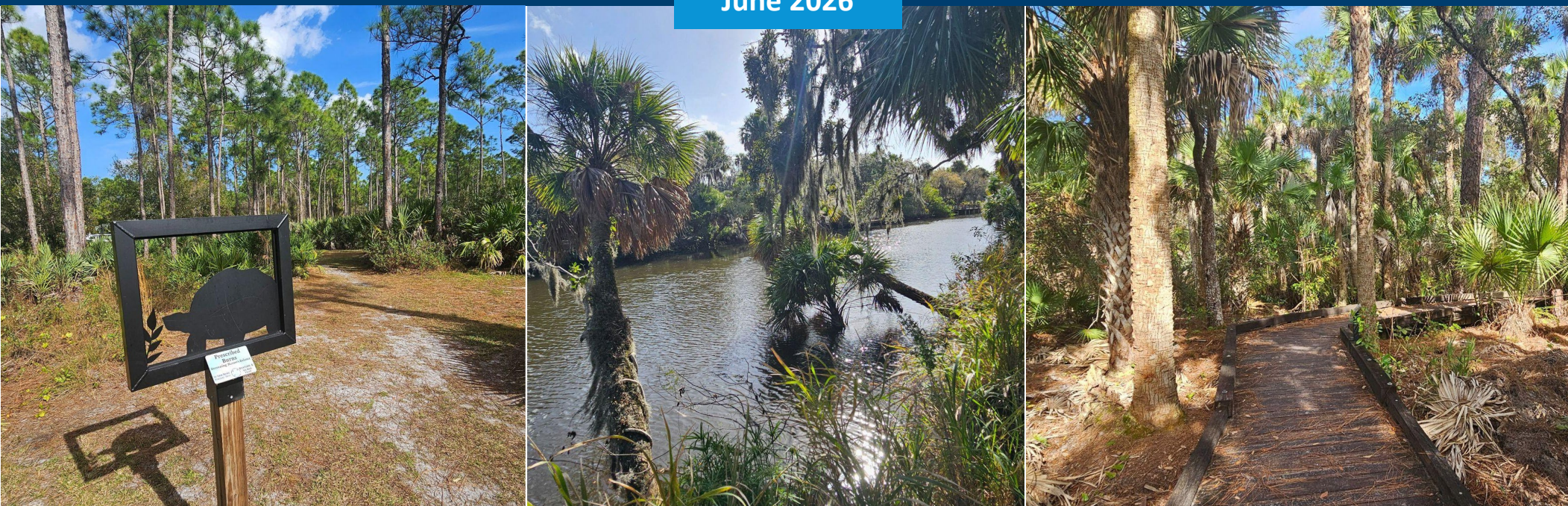


ST. LUCIE TPO

Oxbow Eco-Center Pedestrian/Bicycle Link Connector Feasibility Study

June 2026



PREPARED FOR:

St. Lucie TPO
466 SW Port St Lucie Blvd #111
Port St. Lucie, FL 34953

PREPARED BY:

MARLIN

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Contract # C19-09-701

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Acronyms

AASHTO: American Association of State Highway and Transportation Officials

ADA: American With Disabilities Act

BPAC: Bicycle & Pedestrian Advisory Committee

CAMA: Coastal and Aquatic Managed Areas

CAP: Continuing Authorities Program

CERP: Comprehensive Everglades Restoration Plan

CIP: Capital Improvement Plan

CPTED: Crime Prevention Through Environmental Design

ECG: East Coast Greenway

ERD: St. Lucie County Environmental Resource Department

ERP: Environmental Resource Permit

FDEP: Florida Department of Environmental Protection

FDOT: Florida Department of Transportation

FEMA: Federal Emergency Management Agency

FGTS: Florida Greenways and Trails System

FHWA: Federal Highway Administration

FIND: Florida Inland Navigation District

FIRM: Flood Insurance Rate Maps

FPL: Florida Power & Light Company

FRDAP: Florida Recreation Development Assistance Program

FWC: Fish & Wildlife Commission

LDC: Land Development Code

LRTP: Long-Range Transportation Plan

LWCF: Land and Water Conservation Fund

NEPA: National Environmental Policy Act

NIR: Navigation Impact Report

NSLRWCD: North St. Lucie River Water Control District

OSC: Open Space Conservation Zoning

ROW: Right-of-way

SCORP: Statewide Comprehensive Outdoor Recreation Plan

SFWMD: South Florida Water Management District

SS4A: Safe Streets for All Program

STA: Stormwater Treatment Area

SUN Trail: Shared Use Non-Motorized Trail

SUP: Shared Use Pathway

TA: Transportation Alternatives Set-Aside Program

TCRPC: Treasure Coast Regional Planning Council

TPO: Transportation Planning Organization

USACE: U.S. Army Corp of Engineers

USCG: U.S. Coast Guard

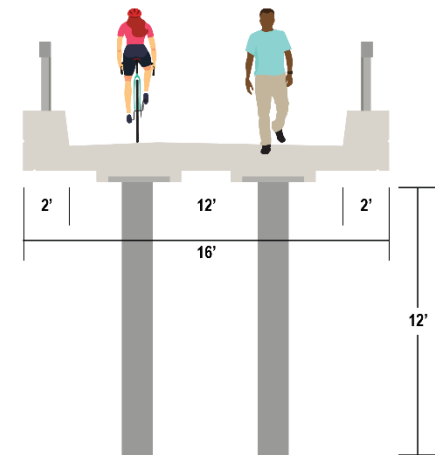
Executive Summary

The ***Oxbow Eco-Center Pedestrian/Bicycle Link Connector Feasibility Study*** identified a potential feasible location (Alternative 1) for a bridge crossing the North Fork of the St. Lucie River in St. Lucie County, Florida, on lands owned by the South Florida Water Management District, which is currently managed by St. Lucie County. Other locations, including Florida Power & Light Transmission Corridor (Alternative 2) and an additional area along the northeast side of the Oxbow Eco-Center's boundaries (Alternative 3), were also reviewed for feasibility. These locations were found to be incompatible with the study's goals and objectives and discovered fatal flaws and unknown impacts; therefore, the most feasible location, Alternative 1, is within the Oxbow Eco-Center's lands, south of the broken oxbow, north of Florida Power & Light's Transmission Corridor.

The **purpose and need** for this study arises from a need for bicycle and pedestrian trails, as identified by St. Lucie County, the St. Lucie Transportation Planning Organization, the City of Port St. Lucie, and the State of Florida. A literature review of similar feasibility studies including research on best practices was conducted in addition to a review of existing conditions. The Oxbow Eco-Center and Citrus Hammock Preserve provide an environmental, cultural, and social benefit to the community, in addition to treating stormwater and pollutants before entering the St. Lucie River. This report provides an overview of the feasibility study conducted, including identification of the preferred alternative, Alternative 1. As a result of this study, several interviews were conducted with key stakeholders to understand their role, responsibilities and what would be needed to construct a pedestrian/bicycle bridge across the St. Lucie River. Requirements for the proposed alternative include stakeholder coordination, design standards, permit requirements, and cost estimates.

Stakeholder Coordination: The project team met with nine key stakeholders including U.S. Coast Guard, U.S. Army Corps of Engineers, Florida Department of Environmental Protection, Florida Power & Light, South Florida Water Management District, North St. Lucie River Water Control District, Florida Inland Navigation District, St. Lucie County Environmental Resource Department, and the City of Port St. Lucie. Coordination will need to be continued as the project progresses, including pre-application meetings with the various agencies mentioned, once the design plans are near completion.

Bridge Design Typical Section: The graphic to the right illustrates a multi-use bridge configuration typical section; however, final design will be driven by navigational clearance requirements, environmental permitting constraints, structural loading demands, and long-term maintenance



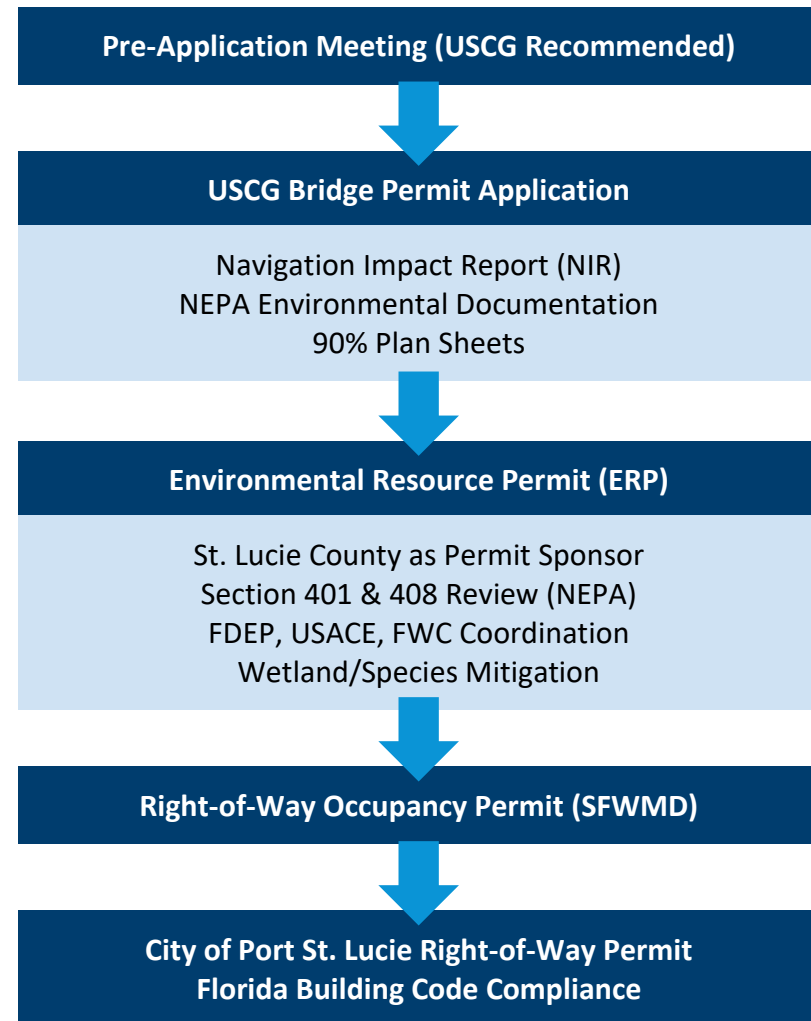
Proposed Bridge Typical
Section

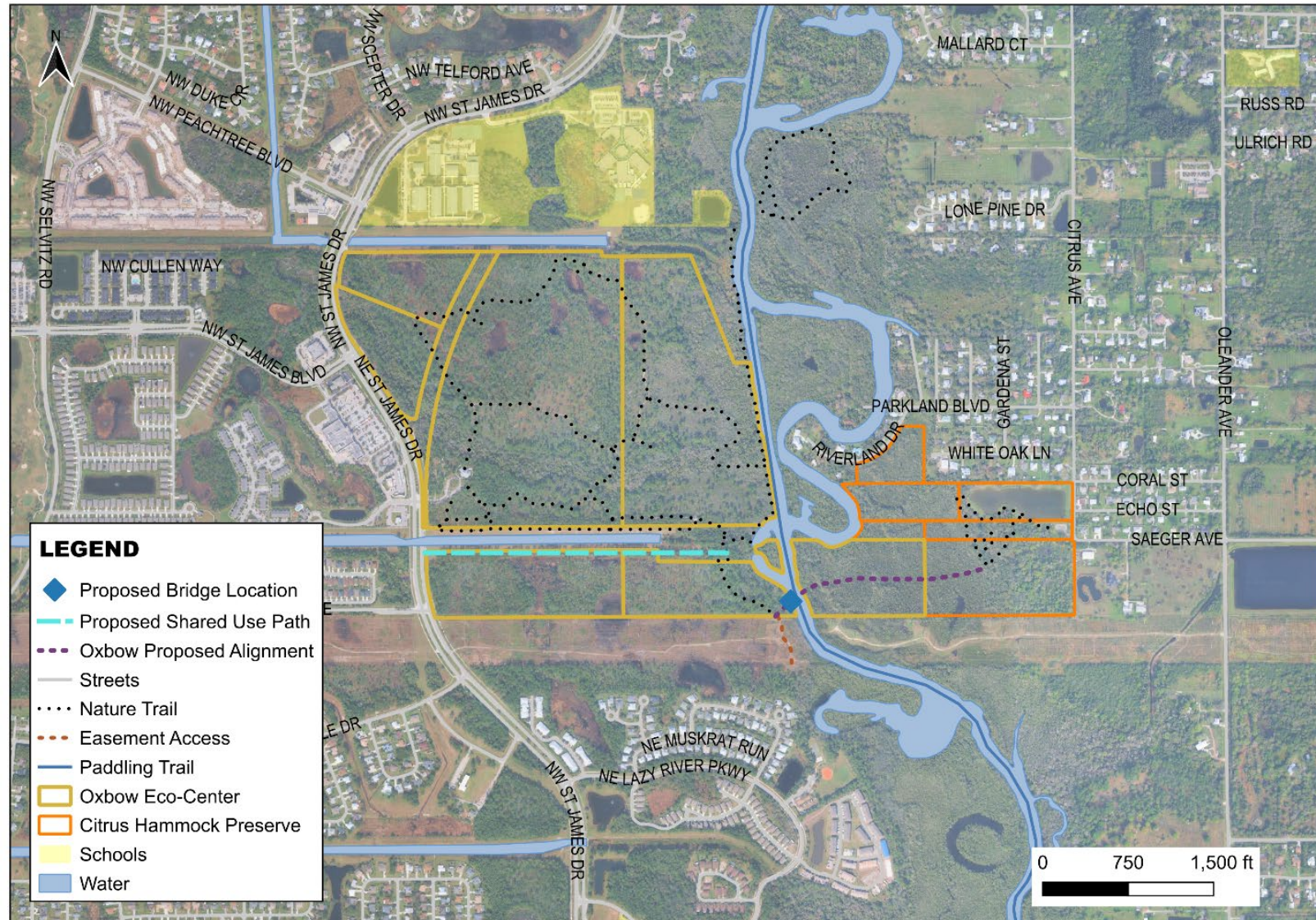
considerations. Early coordination with regulatory agencies and adherence to AASHTO, FDOT, and Florida Building Code standards will be critical to advancing the project from feasibility to implementation.

Permit Process: Advancement of the proposed pedestrian and bicycle bridge will require coordination with the above-mentioned stakeholders. Based on preliminary agency discussions, a structured and proactive permitting approach will be essential to streamline review and minimize delays. The permit process graphic to the right provides an overview of the steps required.

Recommendations: Include a 12' shared use pathway along the south side of Canal 106 in Port St. Lucie, Alternative 1 for a bicycle/pedestrian bridge, and the need for a +/-1,500-foot boardwalk connecting the bridge to Citrus Hammock Preserve. Additional recommendations include the need for further study on environmental impacts, required mitigation, and traffic analysis for crossings and connections from St. James Drive and Citrus Avenue to provide safe connectivity to the proposed pathway, bridge, boardwalk, and regional greenways and trails systems such as SUN Trail, East Coast Greenway, and the North Fork Greenway Trail.

Cost Estimate: The proposed shared use path, bridge, and boardwalk is estimated to be between \$5.3 to \$8 million dollars for construction (in 2026 dollars). Next steps include environmental assessment and surveys, coordination with agency partners and moving forward with design for the proposed recommendations.





Proposed Recommendations

1. Introduction

The Oxbow Eco-Center and the North Fork St. Lucie River Aquatic Preserve represent one of St. Lucie County's premier and unique natural amenities in St. Lucie County, however connectivity across the river is currently limited. The St. Lucie Transportation Planning Organization (TPO) is researching the potential of a pedestrian/bicycle link connection from the Oxbow Eco-Center over the St. Lucie River east to the Citrus Hammock Preserve. The proposed connection would provide access to the future greenways and trails, including the North Fork St. Lucie River Trail and the East Coast Greenway (ECG)/Shared Use Non-Motorized (SUN) Trail. Developing a safe and accessible pedestrian/bicycle connector between the Oxbow Eco-Center and Citrus Hammock Preserve would not only enhance local recreation and conservation opportunities but also contribute to the broader regional and statewide greenways and trails vision.

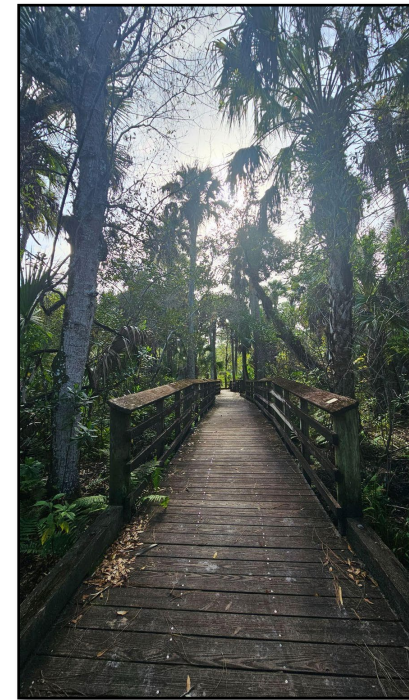
Purpose and Need

The purpose of this feasibility study is to evaluate the potential for a pedestrian and bicycle crossing linking the Oxbow Eco-Center and Citrus Hammock Preserve. The study seeks to:

- **Identify the location** of a pedestrian bridge for future trail route alignment connecting the Oxbow Eco-Center with Citrus Hammock Preserve.
- Select a location that has the **least impact** on natural resources, wetlands, and the community.
- **Enhance access and connectivity** to existing and future greenways and trails in St. Lucie County.

The need for this project arises from the increased countywide demand for non-motorized transportation infrastructure, preserving and showcasing natural resources, and the opportunity to expand regional trail systems in a coordinated manner. Furthermore, the *Statewide Comprehensive Outdoor Recreation Plan* (SCORP) has identified St. Lucie County as a high-priority area in need of walking and hiking trails, in addition to areas of nature viewing, and paddle access.

The St. Lucie TPO supports the development of multimodal networks that expand transportation connectivity, recreational access, sustainable tourism, and healthy and active lifestyles for St. Lucie residents, workers, and visitors. This study builds upon the St. Lucie TPO's ongoing Walk-Bike Network planning efforts and previous safety initiatives to advance a key trail link identified as a community priority.



Oxbow Eco-Center Trail

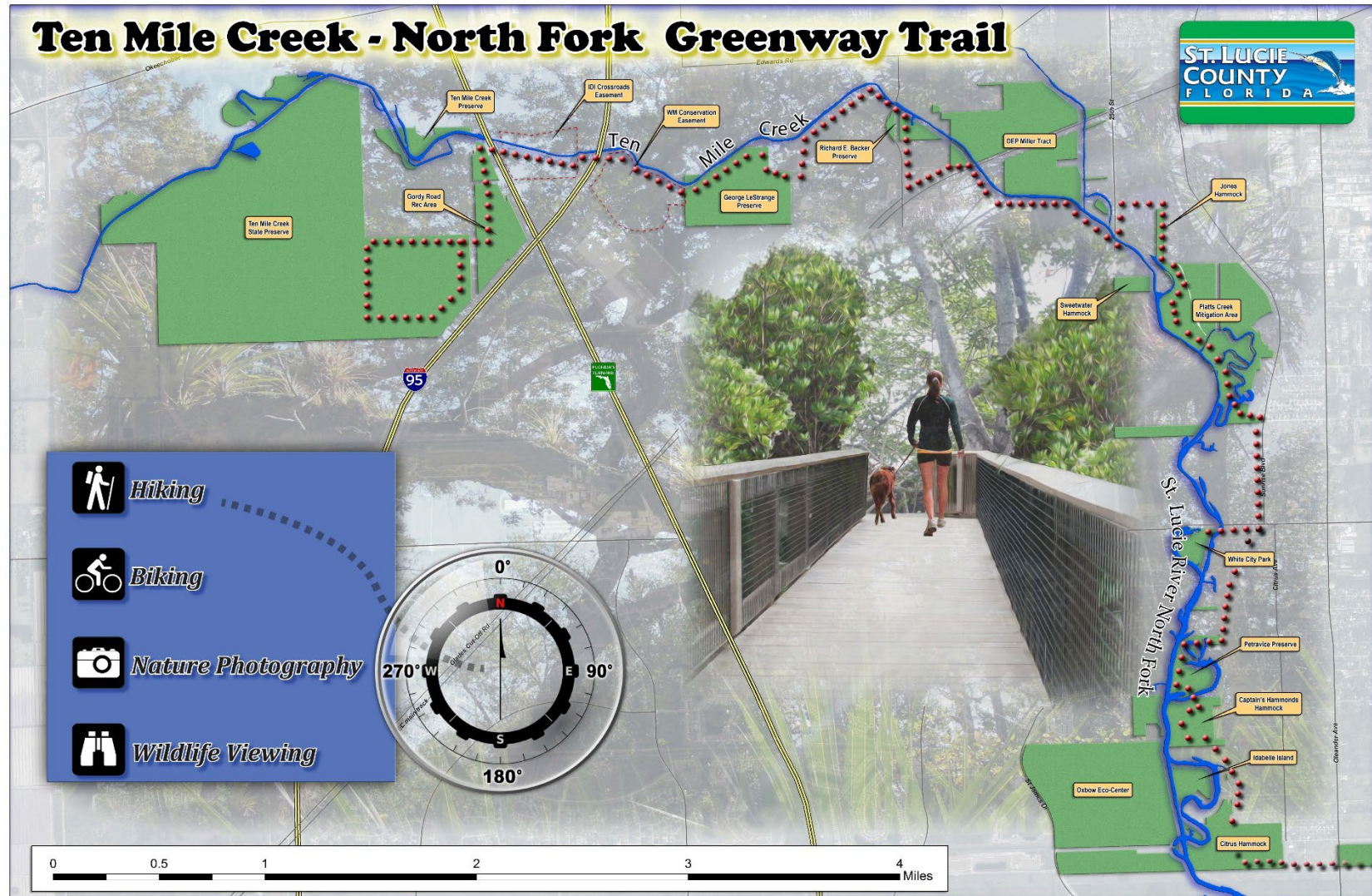


Figure 1: St. Lucie County's Ten Mile Creek - North Fork Greenway Trail Vision

Background Information

The study for a trail connection between the Oxbow Eco-Center and Citrus Hammock Preserve arises from the broader county vision of creating an interconnected Greenway Network along the North Fork of the St. Lucie River, **Figure 1**. The North of the St. Lucie River is part of the North Fork St. Lucie River Aquatic Preserve, a designation offering a higher layer of protection by the Florida Aquatic Preserve Act of 1975. This specific study originated from a Unified Planning Work Program Call for Projects response during a St. Lucie TPO Bicycle and Pedestrian Advisory Committee (BPAC) meeting. Both the Oxbow Eco-Center and Citrus Hammock Preserve are public environmental preserves anchoring this corridor on opposite sides of the river. The Oxbow Eco-Center is an approximately 225-acre county preserve on the west bank of the North Fork St. Lucie Aquatic Preserve in Port St. Lucie. It is a well-established environmental education center with hiking trails, boardwalks, and a canoe/kayak launch, but currently, there is no direct pedestrian or bicycle access across the river. On the east bank, the Citrus Hammock Preserve protects +/-64 acres of hydric hammock and floodplain forest and includes a half-mile nature trail loop and a kayak/canoe stopover. Citrus Hammock, opened more recently, is part of the North Fork St. Lucie River Greenway and serves as an important segment of the Florida Wildlife Corridor along the river. Despite their proximity across the water, these two preserves remain isolated from each other. Today, visitors must travel several miles to the nearest high-volume roadway crossings (Midway Road or Prima Vista Boulevard) to go between the two preserves. This gap underscores the need for a dedicated pedestrian/bicycle link to directly connect the preserves and communities on both sides of the river.

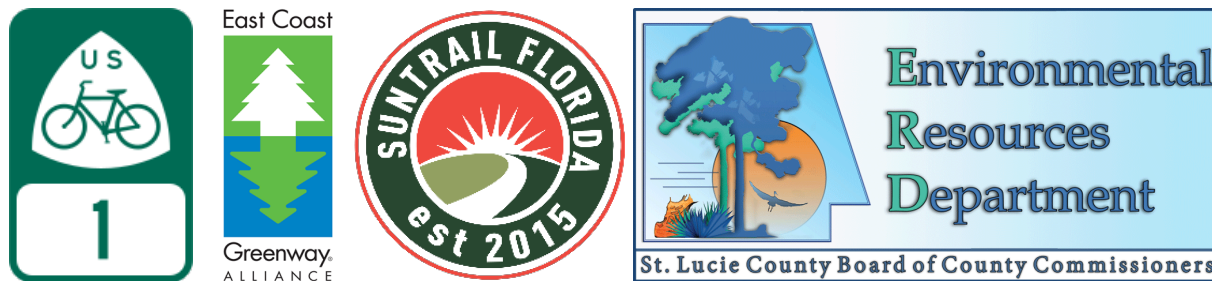


Oxbow's Florida Heritage Trailhead

Local, regional, and statewide plans have long recognized the North Fork corridor as a priority for greenway and trail expansion. St. Lucie County's Greenways and Trails Vision, dating back to the early 1990s, calls for developing a continuous greenway and trail system spanning roughly 85 miles intended to tie together the natural areas and communities for transportation and recreation. The vision is promoted by the County's Environmental Resources Department (ERD) and supported through voter-approved environmental land bonds.

In recent years, the North Fork corridor has also been highlighted as part of the evolving route of the ECG/ Florida SUN Trail through St. Lucie County. The ECG is a 3,000-mile national greenway initiative with the goal of constructing a seamless greenway system for biking, walking, running and rolling stretching from Florida to Maine. This ECG is also part of the SUN Trail Network. The Florida SUN Trail program provides funding for the development of a statewide system of interconnected paved multi-use trails (SUN Trail Network) for bicyclists and pedestrians, physically separated from the road. The SUN Trail Network is the vision of the Florida Greenways and Trails System (FGTS) Plan's Land Trail Priority network. The St. Lucie TPO, in partnership with the Florida Department of Transportation (FDOT) and the Treasure Coast Regional Planning Council (TCRPC), have been working on completing the 27-mile SUN Trail Network/ECG within the county.

The Oxbow-Citrus Hammock connection is a critical component in this context, as it would provide a new crossing and recreational opportunity along the North Fork Greenway that dovetails with the ECG, SUN Trail, and other regional trail efforts. In essence, this study is grounded in a project understanding that bridging the Oxbow and Citrus Hammock preserves will advance multiple community goals such as protecting natural resources while opening them to passive recreation, creating safer non-motorized travel options, and connecting into a larger system of greenways that boosts eco-tourism and quality of life.



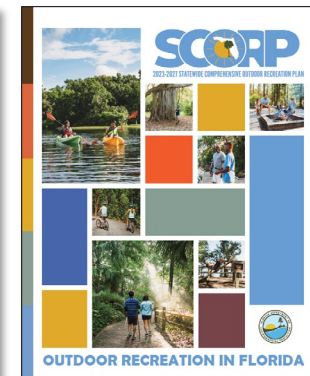
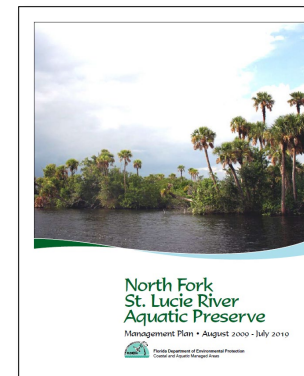
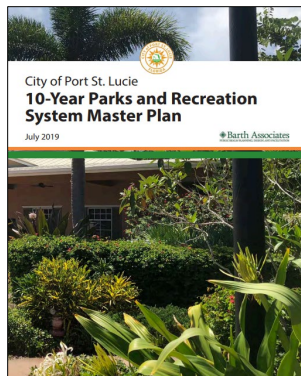
Literature Review

The project team conducted a thorough review of official plans, previous studies, and policy documents relevant to the Oxbow–Citrus Hammock corridor, see **Appendix A**. This task was done to ensure consistency with established plans and to build upon any prior work or recommendations. This section summarizes key documents and information from the review.

Local/City Plans: City of Port St. Lucie and St. Lucie County plans, such as the *Port St. Lucie Parks & Recreation System Master Plan* and the County’s *Comprehensive Plan* and Environmentally Significant Lands Program documentation. These helped the team understand the context of local land use, recreational facility plans, and conservation objectives in the area. For example, Port St. Lucie’s Master Plan references greenway connections and the integration of the ECG through the city’s trail network, which provides important policy support for the Oxbow link. Port St. Lucie’s Mobility Plan identifies St. James Drive as a multi-use path and the FPL Transmission Corridor as a greenway.

St. Lucie TPO Plans: Countywide transportation and trail plans from the TPO were reviewed, including the *St. Lucie Walk-Bike Network Plan*, the *Bicycle-Pedestrian Master Plan*, and the *East Coast Greenway Implementation Plan*. The *East Coast Greenway Implementation Plan* was reviewed to understand how the Oxbow–Citrus Hammock connector could fit into the phased development of the ECG/SUN Trail route through St. Lucie County.

Regional and State Studies: Relevant regional studies facilitated by the TCRPC and state agencies were reviewed. This included any available North Fork St. Lucie River corridor studies (e.g., a 1996 *North Fork River project feasibility study*) and the *Southeast Florida Regional Greenways & Trails Plan*. These sources provided insights on prior conceptual proposals for trails or boardwalks along the river, ecological assessments of the corridor, and regional connectivity goals. The team also reviewed applicable FDOT guidelines for



Shared Use Pathway (SUP) development, bridge design, and the SUN Trail program criteria, to ensure the feasibility study aligns with state standards and funding requirements.

The Florida Department of Environmental Protection (FDEP) published the *North Fork St. Lucie River Aquatic Preserve Management Plan* in 2009 which establishes a management strategy which allows access, while protecting the long-term health of the ecosystem and its resources. FDEP is also responsible for updating the 2023-2027 SCORP which is the state's official document regarding outdoor recreation planning. This document is updated every five years, and guides public outdoor recreation, resource management, and funding priorities in the State of Florida. The document includes an analysis of outdoor recreation participation trends, needs assessment, and an inventory of existing recreation facilities. SCORP prioritizes Complete Streets and connecting existing trails, health and well-being, resource management and stewardship, and economic opportunity and ecotourism. SCORP has also identified recreational gaps in St. Lucie County, including high-priority needs for St. Lucie County:

- **Walking & Hiking Trails:** Ranked as one of the highest “unmet demands” in the region.
- **Nature Study/Wildlife Viewing:** Due to the North Fork's biodiversity, projects that provide access for birding and nature photography score significantly higher in grant evaluations.
- **Paddling Access:** There is a need for more Blueway¹ connections.

Furthermore, **outdoor recreation in Florida generates over \$145 billion annually²**, for St. Lucie County, ecotourism is a primary goal for economic diversification and part of ERD's mission. By researching these official documents and past planning efforts, the project team ensured that the proposed pedestrian/bicycle link is grounded in established plans and community goals. This process helped identify any previously proposed alignments or known constraints, avoided duplicating past efforts, and confirmed that the feasibility study's objectives align with broader recreational and transportation planning initiatives in St. Lucie County.

¹ Is a water-based path or trail designed for recreational use, particularly for paddling (canoeing or kayaking), boating, and fishing (FDEP).

² 2023 – 2027 *Statewide Comprehensive Outdoor Recreation Plan (SCORP)*

Comparable Trail Feasibility Studies

The project team examined several comparable trail feasibility studies from Florida to gather insights and benchmark successful approaches. These reference projects, summarized below, provided valuable perspective on design standards, evaluation methods, and implementation challenges for similar multi-use trail connections:

South Street Multi-Use Trail (New Smyrna Beach, 2022): A feasibility study for a 1.5-mile urban trail connection along existing city streets (Sunset Drive and South Street). The study demonstrated how a 12-foot-wide SUP could be accommodated within a constrained right-of-way (ROW) by making minor width reductions (to 8–10 feet) in a few pinch points. The Plan highlights strategies for fitting a trail around utilities (power poles, fire hydrants) and coordinating with an adjacent municipal airport for required clearances. Environmental impacts were found to be minimal, only minor wetland areas were affected, and the project had a low likelihood of impacting any threatened or endangered species. This example emphasized the importance of flexible design and thorough existing conditions review in proving feasibility, even in built-out corridors.



South Street Trail



Clay-Duval Trail bridge

Clay–Duval County Trail (North Florida TPO, 2022): A Regional Trail Feasibility Study to connect Mike Roess Gold Head Branch State Park in Clay County to the Cecil Recreational Trail in Duval County (a multi-county trail link in Northeast Florida). The project team developed a series of alternative routes through extensive coordination with local agencies and public input, including an online survey of potential trail users. Each alternative was evaluated based on a set of criteria (e.g. length, environmental impacts, safety, connectivity, cost), and the results were summarized in a matrix of pros and cons for each route. The Clay–Duval Study illustrates the value of a data-driven and transparent alternative analysis process. It also emphasized cross-jurisdictional collaboration, a lesson pertinent to the Oxbow project, which will involve county, city, state, and private stakeholders.

Ludlam Trail (Miami-Dade County, ongoing): The Ludlam Trail involves converting an abandoned railway corridor into a 5.6-mile urban trail and linear park in the heart of Miami-Dade County. The planning and design efforts for Ludlam Trail, documented in the *Miami-Dade Trail Design Guidelines and Case Study*, showcase the importance of establishing comprehensive design guidelines and community vision from the outset. The Ludlam Trail initiative built upon the County's *Parks and Open Space Master Plan* "Great Greenways" vision, ensured the trail would integrate with a countywide network to provide transportation alternatives, protect natural resources, and spur economic benefits. Public engagement was a cornerstone of the process, resulting in strong grassroots support that helped move the project forward. For the Oxbow Eco-Center Connector, the Ludlam Trail serves as a model for how a trail can be planned with both top-down strategic guidance and bottom-up community input. It reinforces the need for clear design standards (for trail width, amenities, crossings, etc.) and an articulation of broad benefits (transportation, recreation, conservation) to build consensus around the project.

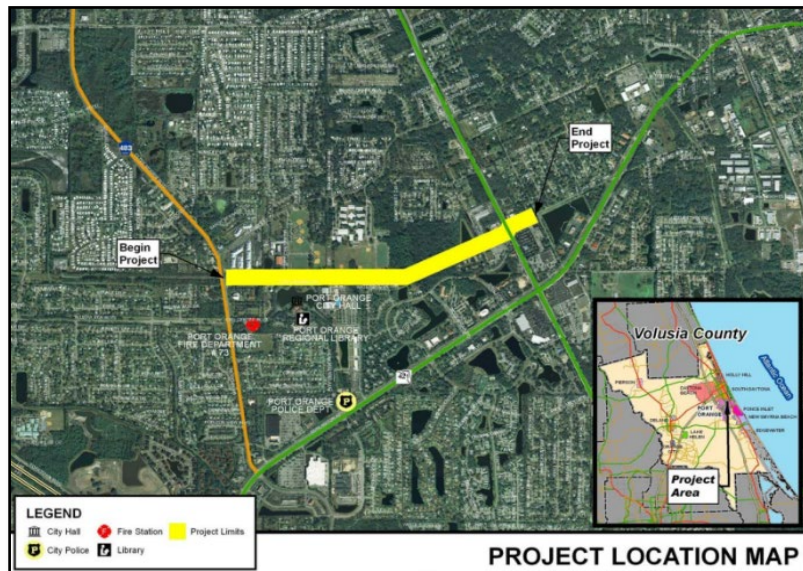


Ludlam Trail Rendering



Gordon River Greenway Boardwalk

Naples Gordon River Trail/bridge: One of the last unspoiled areas of Naples, the Gordon River Greenway stretches over two miles from Golden Gate Parkway to Central Avenue. The greenway includes a recently constructed bridge that crosses the Gordon River and connects to the park's community center, trail extension, and parking lot. The project illustrates the benefits of installing a trail bridge to enhance transportation and ecological connectivity to a natural Florida wetland. The 140-acre Gordon River Greenway Park provides the opportunity to view wildlife and gain an appreciation for southwest Florida's natural lands. The 2.5 miles of asphalt, mulch, and boardwalk trail meander through six different native plant communities and are designed for passive recreational activities such as: walking, running, biking, inline skating and skateboarding.



Port Orange Trail Proposed Alignment

Port Orange Trail: Due to Oxbow Center's proximity to a transmission corridor, the project team researched past projects that involved coordination with a utility company to negotiate corridor access. The Volusia County *Port Orange Trail Feasibility Study* was referenced as a project for further research. In the 2006 study, the county was seeking to utilize a nearby Florida Power & Light (FPL) corridor to develop a 1.2-mile bicycle/pedestrian trail link between Clyde Morris Boulevard and Jackson Street. Within the proposed corridor was a school, neighborhoods, and low-density commercial land uses. After a desktop scan of the proposed location, no trail exists along the corridor today.

By reviewing these similar projects, the project team gained practical insights into best practices and potential pitfalls. Each study offered lessons, from technical design adjustments to stakeholder involvement techniques, that have been considered in the approach to the Oxbow Eco-Center Pedestrian Bicycle Link.

Best-Practice Trail Planning Principles

Drawing from the research into official documents and comparable case studies, the following best-practice principles were identified to guide the development of the Oxbow Eco-Center Connector and similar greenway projects:



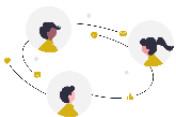
Environmental Stewardship: Trail alignments should be sited and designed to avoid or minimize impacts to sensitive lands and natural resources. In practice, this means favoring routes on existing clear corridors or resilient uplands, bridging over wetlands or streams, and planning early for any necessary mitigation. Protecting the integrity of the Aquatic Preserve and other sensitive areas is paramount, so all decisions, from alignment choice to construction methods, are weighed against their ecological footprint.



Connectivity and Access: The effectiveness of a trail link is measured by how well it connects people to places. The Oxbow connector is being planned to maximize connectivity to existing and future trail networks, including tying into trailheads at each preserve and linking with regional corridors like the ECG/SUN Trail. Equally important is ensuring the trail is accessible to a broad range of users. This means incorporating appropriate grades, surface materials, and widths. Best practices call for a trail width of 12 feet so people walking, biking, and those with disabilities, can use the facility comfortably and safely, in both directions.



Safety and User Comfort: Best practices call for careful attention to safety in trail design, both in terms of structural design, user comfort and personal security. For this project, which includes designing a bridge that meets engineering standards for load and handrail height and ensuring safe approaches on each side (potentially with handrails or clear zones on boardwalk segments). It also involves considerations to sightlines, lighting (which follows Dark Sky Principles), and emergency access. By applying Crime Prevention Through Environmental Design (CPTED) principles, the trail can be an inviting and a secure public space. Regarding comfort, proper signage, wayfinding, trail markers and seating with shade will provide comfort and convenience for all ages and abilities.



Community Engagement: Successful greenway projects actively involve the community and stakeholders throughout planning and design. The Oxbow Connector study prioritizes stakeholder engagement, from engaging community members at the concept stage to consulting preserve managers, adjacent property owners, and local officials. Incorporating community feedback not only improves project design (by addressing local needs or concerns) but also builds public support, which is crucial for funding and implementation. This principle aligns with lessons from the Ludlam Trail and others which showed extensive public input, leading to trails that reflect community values.



Use of Existing Corridors: Whenever feasible, utilizing existing public ROW or utility corridors is preferred to establish new trails. Doing so can minimize the need for land acquisition, reduce environmental disturbance, and simplify permitting. In this case, the presence of the FPL transmission corridor provides an opportunity to follow an established corridor for part of the route. Similarly, leveraging the edges of existing preserved lands or other public properties can help cost-effectively route the trail. The trail also crosses a navigable waterway; therefore, the existing users of the waterway must be examined to determine the height of the bridge and impacts to existing waterway users. This principle is balanced with the need to also consider alternatives; if an existing corridor has insurmountable issues, the project must be flexible to explore new alignments.



Comprehensive Evaluation and Feasibility: A rigorous, multi-criteria evaluation process is the best practice to guide decision-making in a feasibility study. By assessing each potential alignment for factors like environmental impact, engineering feasibility, user experience, cost, and consistency with plans, the study ensures that the recommended alternative is the most viable and beneficial option. Documentation of this evaluation provides transparency. It also lays the groundwork for grant applications and further project development by clearly explaining why and how the preferred alternative was chosen.

These principles collectively form a framework for decision-making for this study. By observing them, the project team aligns the Oxbow Eco-Center Connector with both industry best practices and the goals of the local community.



Oxbow Eco-Center Boardwalk and Signage

Public & Stakeholder Involvement

A robust stakeholder engagement process was integral to the methodology of this study. The project team coordinated with St. Lucie County staff and the St. Lucie TPO through regularly scheduled project meetings to gather local input and guidance from various stakeholders, including community members. **Appendix B** includes the stakeholder presentation, meeting agenda and notes.

Committee and Board Review

The project team presented the report and findings for formal review in May and June 2026. Each reviewing body approved the report unanimously:

- **May 2026:** The St. Lucie Bicycle and Pedestrian Advisory Committee (BPAC), Technical Advisory Committee (TAC), and Citizens Advisory Committee (CAC) reviewed the report and voted unanimously to approve it.
- **June 2026:** The TPO Board received the final presentation and also voted unanimously to approve the report.



Stakeholder Group Meeting Summary

Between September 2025 and January 2026, the project team lead a series of one-on-one meetings with various stakeholders including the South Florida Water Management District (SFWMD), FPL, North St. Lucie Water Control District (NSLWCD), FDEP, U.S. Army Corp of Engineers (USACE), U.S. Coast Guard (USCG), the Florida Inland Navigation District (FIND), and the City of Port St. Lucie. Each meeting focused on informing the agency about the project scope and goals, the agency's role and responsibilities, planned projects or improvements, and detailed discussion on the agency's requirements or guidelines, process, permits, and considerations for the proposed bicycle/pedestrian bridge connector.

On Thursday, October 16th, 2025, the project team organized a key virtual group stakeholder meeting. The meeting was attended by the: St. Lucie TPO, St. Lucie County, City of Port St. Lucie, SFWMD, USACE, and the Oxbow Eco-Center. Together the group discussed the feasibility of the connector link. USACE staff outlined several federal regulatory considerations relevant to the proposed crossing. The agency advised that the USCG may require involvement due to the project's proximity to navigable waters. If a boardwalk or overwater structure is pursued, USACE indicated that FDEP may need to process a **Section 404 Permit** and that a **Section 408 Review** could be required depending on jurisdiction and project ownership. USACE cautioned that if SFWMD is not a federal sponsor for the

project, USACE would directly manage the 408-review process. Staff also emphasized the need to clarify whether the proposed bridge would require in-water footers and to refine the expected bridge height, as these factors influence permitting pathways and potential environmental impacts. The project team confirmed that the bridge is intended to span the river, similar in scale to conceptual images presented during the meeting but acknowledged that additional design guidance is needed.

Summary of Stakeholder Perspectives on Alternatives

Stakeholders demonstrated a clear understanding of the distinguishing characteristics of the three alternatives proposed:

- **Alternative 1 – South Florida Water Management District/Oxbow Eco-Center**
Offers the strongest ecological, scenic, and educational value but introduces moderate challenges related to permitting, environmental sensitivity, and construction feasibility.
- **Alternative 2 – Florida Power & Light Transmission Corridor**
Provides practical advantages for construction and long-term maintenance and enhances connectivity to regional trail systems. However, advancement of this alternative hinge on FPL’s willingness to grant on-going access and the community’s acceptance of a utility corridor alignment. In addition to limitations in height due to the power transmission lines.
- **Alternative 3 – Oxbow Eco-Center - North of Broken Oxbow**
The potential route contains a fatal flaw due to this alternative requiring two bridge crossings since the river is split in this area and would most likely result in environmental impacts greater than the first two alternatives. Furthermore, an active wetland re-hydration project with the county and USACE within the Oxbow property will disrupt the area for an extended period.

Across agencies, stakeholders expressed consistent preferences for alignments that:

1. Utilize publicly owned preserved land to reduce the need for land acquisition;
2. Minimize disturbance to high-quality natural habitat;
3. Provide direct and meaningful connections between conservation areas; and
4. Avoid unnecessarily fragmenting managed lands or impacting private property.

During the stakeholder meeting, a live Slido poll was conducted to gauge preliminary stakeholder preference among the three options. Results indicated that **Alternative 1** was the preferred alignment among participants, reflecting the perceived balance between feasibility, minimized environmental impact, and regional connectivity potential, **Figure 2**.

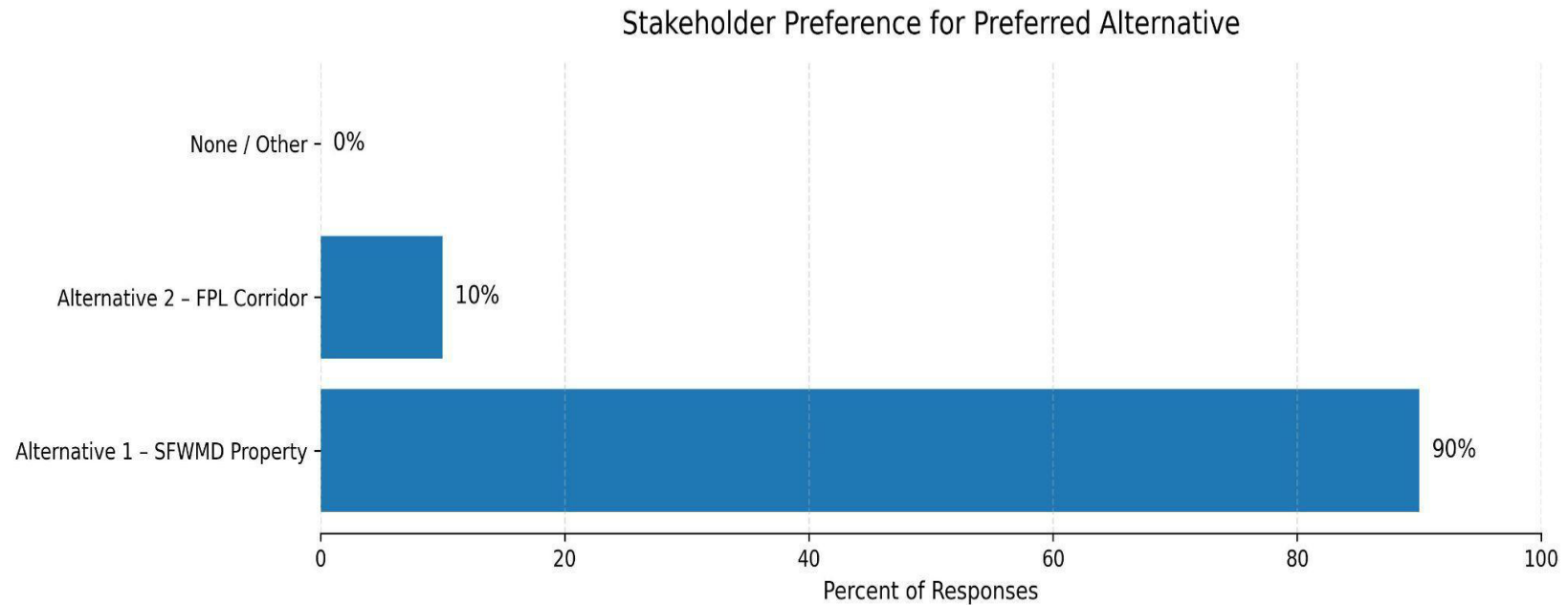


Figure 2: Preliminary Stakeholder Preference Slido Poll

After the group stakeholder meeting, the project team concluded that additional information needed to be gathered and resulted in the scheduling of one-on-one meetings with various stakeholders to gain a greater understanding of the local, regional, state, and federal processes and standards for the proposed Oxbow Connection. The following sections provide a summary of each one-on-one meeting with key agency stakeholders.



South Florida Water Management District Meeting

The project team conducted a one-on-one coordination meeting with the SFWMD on Thursday, September 24, 2025, to discuss the Study, with a particular focus on property ownership, regulatory authority, and long-term stewardship considerations. The discussion provided critical guidance regarding project feasibility on SFWMD-owned lands and clarified agency preferences among the proposed alternatives. The St. Lucie TPO Project Manager met with SFWMD staff again on December 3, 2025, to further discuss the required coordination of a potential bridge across the St. Lucie River on their lands.

Project Overview and SFWMD Interest

The project team summarized the purpose of the feasibility study, which is to identify the optimal and least-impactful location for a pedestrian and bicycle bridge connecting the Oxbow Eco-Center to the Citrus Hammock Preserve. SFWMD staff acknowledged that the current preferred alignment (Alternative 1) would traverse SFWMD-owned lands within the Oxbow, prompting early coordination to understand ownership, permitting, and long-term operational implications.

SFWMD Role, Property Interests, and Approval Requirements

SFWMD clarified that it is the property owner of lands associated with Alternative 1. Any construction, ground disturbance, or installation of infrastructure within these lands would require formal written approval from SFWMD's Land Development Division through a ROW permit process.

Additionally, SFWMD emphasized the requirement for a Maintenance Agreement that clearly identifies the entity responsible for routine and long-term bridge maintenance. This agreement must extend in perpetuity, regardless of the status of the existing 99-year lease between SFWMD and the St. Lucie County ERD. SFWMD noted that if the lease were revoked for any reason, maintenance obligations would remain enforceable. SFWMD further explained that the Oxbow lands were acquired using Comprehensive Everglades



Oxbow Eco-Center Natural Lands

Restoration Plan (CERP) funds. CERP is a federal-state partnership, authorized in 2000, designated to restore, protect, and preserve the south Florida ecosystem. It aims to improve quality, quantity, timing, and distribution of water for the environment while enhancing water supply and flood protection for residents.³

As a result, these properties remain subject to future restoration needs. Should USACE or SFWMD pursue additional re-watering or restoration projects within the Oxbow, SFWMD retains the authority to request removal of any non-essential infrastructure, including a pedestrian bridge, if it conflicts with restoration objectives.



Citrus Hammock Preserve

Planned Projects

At the time of the meeting, SFWMD reported no planned capital projects within the immediate study area. However, staff reiterated that future restoration initiatives remain possible due to the CERP designation of the property.

Key Considerations and Alternative Preferences

From SFWMD's perspective, Alternative 2 (FPL Transmission Corridor) is the preferred alignment. Staff indicated that this Alternative would likely result in the least environmental impact, avoid direct disturbance to SFWMD conservation lands, and reduce long-term risks associated with restoration conflicts. However, SFWMD cautioned that implementation of Alternative 2 would still require coordination with FPL, including potential easements for construction staging and equipment access within the transmission corridor.

For trail connections near Citrus Hammock Preserve, SFWMD highlighted that eastern portions of the project area are particularly wet, and any trail approach in this area would likely require boardwalk construction to minimize impacts to wetlands and hydrology. This condition further reinforces the importance of selecting an alignment that limits disturbance to sensitive natural resources.

Next Steps and Ongoing Coordination

SFWMD requested that the St. Lucie TPO continue to provide project updates and share findings from the final feasibility study report. Ongoing coordination will be necessary should any alternative involving SFWMD land remain under consideration, particularly to address property rights, permitting pathways, and long-term maintenance responsibilities.

³ National Park Service



Florida Power & Light Meeting:

On Thursday, October 2, 2025, the project team met with a representative from the FPL Distribution Team, to gather input regarding the potential proposed alignment along the FPL ROW.

The representative explained the process for requesting access to FPL corridors and provided the project team with official guidelines for review. (FPL and St. Lucie County already share an easement that allows the community to the south, River Place, to cross through the FPL ROW to enter the Oxbow Preserve.)

FPL's Right-Of-Way Use Guidelines

"The following activities **may** be allowable, on a case-by-case basis and will require an FPL Right-of-Way Consent Agreement and be conditioned on written approval from FPL prior to performing such activities or placing such items:"

"(10.) Walking or multi-use paths provided slope and access requirements are met and which do not encourage recreational activity near FPL facilities."

Based on additional feedback from the representative, FPL prefers to keep their corridors free of non-FPL staff and activities, particularly along their transmission corridors. Additionally, **FPL does not allow the placement of structures, plants, or other materials that exceed a height of 14 feet above existing grade.** The project team reviewed a study from the City of Port Orange, Florida that highlighted a potential agreement between the City and FPL to access a portion of their ROW for a multi-use trail. The study was



FPL Transmission Corridor



Trailhead between FPL and Oxbow Properties

written in 2006, and to date, there is no trail existing within the FPL ROW in the City of Port Orange. Furthermore, a bridge exceeding the height requirement would make Alternative 2 infeasible.

North St. Lucie River Water Control District

PROVIDING DRAINAGE, FLOOD CONTROL AND WATER MANAGEMENT SINCE 1918

North St. Lucie River Water Control District Meeting

The project team met with the NSLRWCD on Wednesday, November 19, 2025, to review the Study and to discuss drainage, jurisdictional, and operational considerations relevant to a future bridge crossing. The discussion focused on the physical and operational characteristics of the district's managed systems, the hydrological context of the study area, and potential implications for bridge construction and design study area, and potential implications for bridge construction and design.

NSLRWCD System Overview and Responsibilities

NSLRWCD staff provided an overview of the district's responsibilities, which cover approximately 65,000 acres of land. The district is actively engaged in the development of a Stormwater Treatment Area (STA) located west of the study area, while also managing the hydrology of several key waterways including Ten Mile Creek and Five Mile Creek. Staff noted that a previously planned reservoir at Ten Mile Creek failed to maintain its intended 18-foot storage capacity and today provides only about four feet of water control elevation. As a result, flood management within the interconnected creek system remains challenging.

Within and around the project study area, NSLRWCD highlighted the following conditions:



Canal 106 Looking East



Canal 106 Looking West

- The district maintains the Gordy Road Water Control Structure but does not dredge east of this location; areas downstream are natural and overgrown, with no aquatic vegetation spraying or maintenance.
- Five Mile Creek, historically a tidal system, now flows freely due to inactive water control infrastructure at SR-70 and ultimately discharges into Ten Mile Creek and the North Fork of the St. Lucie River, an area prone to periodic flooding.
- Several canals previously under district management (Canals 105–107) have been transferred to the City of Port St. Lucie, which now maintains these canals.
- Canal 106, located within the broader study area, includes an active water control structure and is currently maintained by the City of Port St. Lucie.
- The district confirmed that it does not control canal ROW within the immediate study area for the proposed bridge; however, **canal segments east of the study corridor may require review should project impacts extend into those areas.**
- Stormwater ponds east of the study area are county-owned and discharge to the North Fork; these facilities were constructed as part of the SR-5/U.S. 1 roadway expansion.
- Canal 22, which serves as the planned alignment for the SUN Trail, is under NSLRWCD's jurisdiction. The district is currently addressing erosion issues along the canal bank and is evaluating riprap stabilization.
- Additional structures, such as the discharge from Canal 28 into the river, contribute to the complex hydrology influencing the project area.

NSLRWCD clarified that its operating budget is funded through property taxes and supports ongoing operations and maintenance. Larger capital improvements rely on grants or partnership funding, including support from the SFWMD. The district also noted that canals situated west of the study area sit at higher elevations, while the North Fork is tidally influenced, creating dynamic water-level conditions that may be relevant for bridge design and environmental review.

Related and Ongoing Hydrological Efforts

While NSLRWCD does not have planned projects within the immediate study area, staff described several ongoing and upcoming initiatives that may inform the feasibility analysis. St. Lucie County is evaluating potential expansion of joint stormwater ponds east of the study area for water quality enhancement. Additionally, the County's Stormwater Master Plan is currently underway and may offer insights into regional drainage constraints. SFWMD continues hydrological modeling associated with the western STA and broader CERP activities, including development of future operating plans. NSLRWCD also has temporary water-stage monitoring equipment installed at Midway Road to collect elevation data and assess park water conditions. Staff offered to share available monitoring data with the project team to support bridge elevation and clearance evaluations, see **Figure 3**.

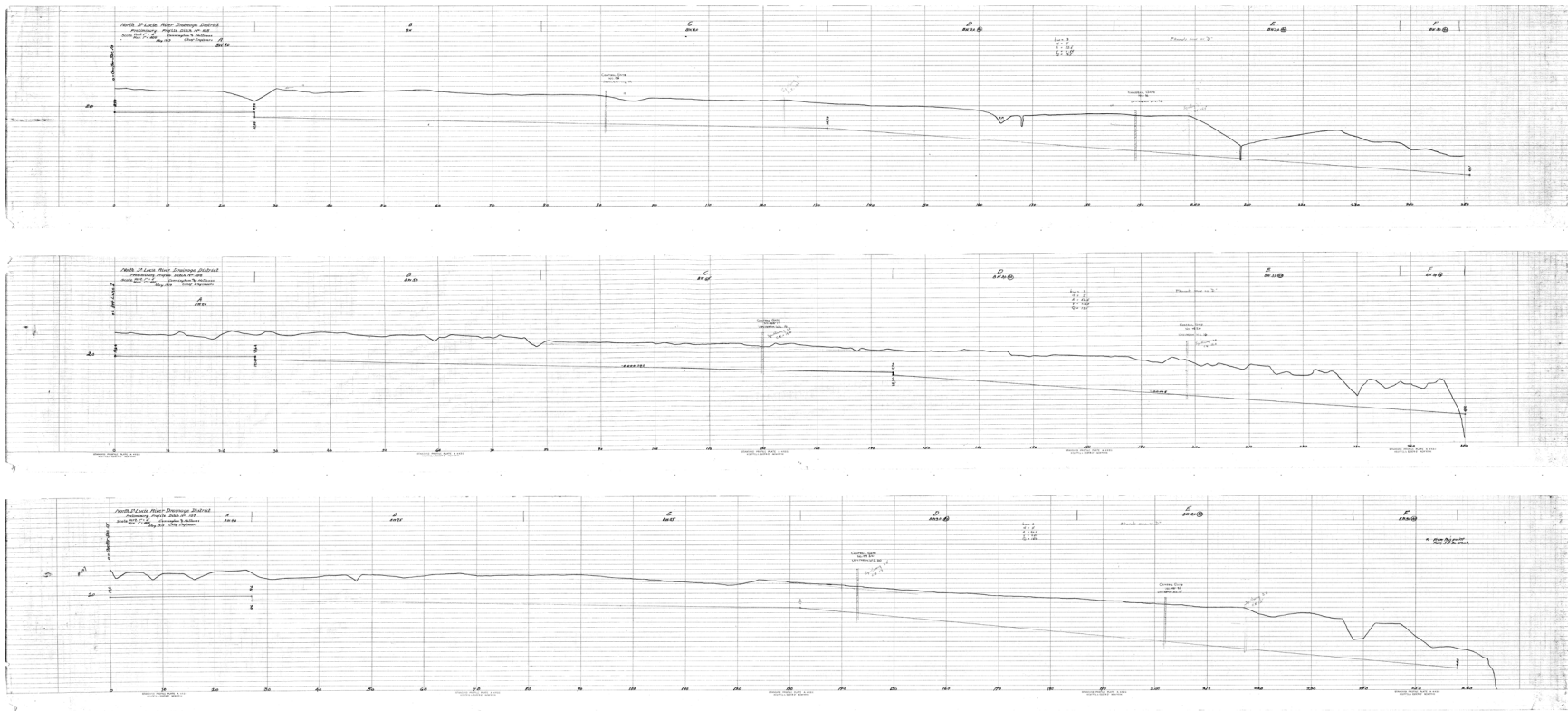


Figure 3: Canal 105 (Top), Canal 106 (Middle), Canal 107 (Bottom) Tidal Elevation Data

Bridge Considerations Relevant to NSLRWCD

Although the water control district does not have jurisdiction over the main river channel where the proposed bridge would be located, NSLRWCD noted that any impacts to canals east of the corridor would trigger review and approval from the district. Staff indicated that linear interpolation between the navigation clearances of the Midway Road and Prima Vista Boulevard bridges may serve as a reasonable initial assumption in estimating the required height for a new pedestrian crossing. However, additional verification, such as vessel traffic data and hydrological inputs, will be necessary as alternatives advance toward conceptual design.

Next Steps and Coordination Needs

NSLRWCD recommended that the project team obtain bridge plans for the Midway Road and Prima Vista Boulevard bridge structures to assist with developing an appropriate bridge height and clearance methodology. The district also advised checking with St. Lucie County to determine whether any vessel traffic data exists for waterways within or adjacent to the study area. NSLRWCD committed to sharing available monitoring data that may aid in refining hydrological assumptions during the feasibility evaluation.

Florida Department of Environmental Protection (FDEP) Meeting

As part of the agency coordination effort the project team held a focused meeting with the FDEP on Thursday, November 20, 2025. The meeting provided an opportunity to review the project purpose, discuss regulatory considerations, and identify early permitting and design factors relevant to a future pedestrian and bicycle bridge across the North Fork of the St. Lucie River.



Prima Vista Bridge over St. Lucie River



Oxbow Eco-Center Trails and Interpretive Signage



FDEP's Role and Regulatory Responsibilities

FDEP staff outlined the agency's responsibilities related to the review of projects occurring within Aquatic Preserves and other environmentally sensitive lands. As the proposed crossing lies within the St. Lucie Aquatic Preserve, any future bridge or trail development **must align with the Aquatic Preserve Management Plan** and comply with applicable state regulations. FDEP emphasized that a full permit review would be required for this project and would be administered by the Southeast District Office under the **Environmental Resource Permit Program**. The permitting process includes three major components:

1. **Regulatory Authority**, which ensures consistency with applicable statutes and environmental regulations;
2. **Proprietary Authority**, governing the use of sovereign submerged lands and requiring an easement for any overwater structure; and
3. **Federal Authorization**, coordinated with U.S. Army Corps of Engineers (USACE).

Given the scale of the proposed crossing, additional layers of review are expected. FDEP advised that permit processing typically takes a minimum of one month, although complex applications may require more extensive time frames. As a reference, staff noted a prior County pedestrian bridge project (the Petravis Bridge) and offered to share files that may support the project team's understanding of similar permitting paths.

Environmental Context and Related Initiatives

FDEP staff reported no current or planned projects directly within the immediate study area. However, they referenced an ongoing collaborative effort between St. Lucie County and USACE to rehydrate wetlands north of the broken oxbow near the canoe and kayak launch. This restoration initiative aims to reconnect portions of the southeastern Oxbow property to the main river channel, which is currently obstructed by sediment and silt accumulation. Understanding the extent and timing of this restoration project will be important as design concepts for the bridge crossing are further refined.



Oxbow Eco-Center wildlife



St. Lucie river at River Park Marina

Bridge Design and Environmental Considerations

During the meeting, FDEP staff identified several key factors that would influence the feasibility of a pedestrian/bicycle bridge across the St. Lucie River. **Bridge height will be regulated under USCG navigational requirements to ensure that upstream vessel movements are not impeded.** The team was advised that FDEP would share guidelines related to water-dependent structures under the Aquatic Preserve Rule to help ensure early design concepts are aligned with state policy.

Any structure involving footers, pilings, or in-water components would require a hydrological review to evaluate potential impacts on water flow, aquatic habitat, and sedimentation patterns. The placement of abutments or support structures also warrants careful consideration due to the area's susceptibility to erosion, particularly given the presence of boating activity. FDEP highlighted the importance of evaluating navigational safety, erosion potential, and compatibility with Aquatic Preserve goals early in the design process.

Coordination Needs and Permitting Partners

FDEP identified several agencies that would need to participate in future coordination or permitting activities. These include:

- **U.S. Coast Guard (USCG)** for bridge height, bridge permitting, and navigation-related requirements.
- **US Army Corps of Engineers (USACE)**, with whom a pre-application meeting is strongly recommended prior to permit submission.
- **Florida Fish and Wildlife Conservation Commission (FWC)** for review of wayfinding and signage standards within managed waterways.
- **Florida Inland Navigation District (FIND)**, which oversees regional dredging activities and local waterway navigation.





**US Army Corps
of Engineers®**

US Army Corps of Engineers Meeting

The project team met with the USACE on Tuesday, November 25, 2025, to review federal regulatory considerations, discuss ongoing ecosystem restoration initiatives in the region, and clarify how future phases of the Oxbow Eco-Center Pedestrian/Bicycle Link Connector project may intersect with current and planned federal activities.

USACE Role and Responsibilities in the Region

USACE described its role as the federal partner to the SFWMD, which serves as the non-federal sponsor for key restoration activities under CERP. Several CERP-related improvements in the area will incorporate recreational features, such as canoe launches and parking areas, funded through a 50/50 cost-share between USACE and SFWMD. USACE staff noted that approximately 300 acres of floodplain are currently being acquired to support these restoration efforts, and that ongoing design and siting decisions are being led by agency staff.

USACE also discussed the long-term plan to remove accumulated muck from the North Fork of the St. Lucie River. This large-scale dredging initiative, anticipated around 2030, will establish sediment traps to manage future accumulation and improve river health. Additionally, the agency highlighted its Continuing Authorities Program (CAP), which supports small-scale survey and restoration projects and may serve as a potential funding source for related ecological enhancements.

Planned Environmental Improvements Near the Study Area

USACE noted that a SFWMD-led effort to rehydrate wetlands north of the study corridor is planned and will restore historical hydrologic connections in the floodplain. While these activities do not directly overlap with the preferred alignment alternatives, they represent important context for understanding future landscape conditions and ensuring compatibility between restoration and recreational objectives.



Midway Bridge at White City Park

Bridge Feasibility, Requirements, and Permitting Pathways

USACE clarified that its jurisdiction over the proposed pedestrian/bicycle bridge would be limited to any in-water components, such as footers or pilings placed within waters of the United States. While the bridge structure itself falls outside of direct USACE authority, selection of the least environmentally damaging location is a key expectation under federal environmental standards. The agency reviewed its permitting processes and outlined several pathways that would apply depending on project impacts:

- USACE and FDEP permitting can occur concurrently, streamlining regulatory review.
- An **Environmental Resource Permit (ERP)**, overseen by FDEP, will be required and serve as the foundational permit for USACE evaluation.
- **Section 408 Review** may be triggered if the project alters a federally authorized civil works project. This engineering-based review considers potential impacts on:
 - Public safety
 - Functional integrity of federal infrastructure
 - Environmental resources
 - Real estate interests
 - Legal and policy compliance



USACE also described how federal regulatory review processes vary based on the scale and nature of impacts. For example, FDEP, not USACE, would permit any proposed boardwalk structures, although federal input would still occur where aquatic resources are affected.

Environmental and Cultural Resource Considerations

USACE identified several environmental topics that must be evaluated as the feasibility study advances. While no in-water protected species are currently known in the project area, **manatee considerations remain important for any overwater structure**. Out-of-water impacts are likely to be of greater concern. USACE advised that **Cultural Resource Assessments and Wildlife Surveys may be required**,

especially if bridge approaches or trail connections disturb upland vegetation or tree canopy that could provide roosting habitat for protected bat species, including:

- Florida Bonneted Bat (Listed Protected Species)
- Tricolored Bat (Pending Protected Status)

These surveys can be cost-intensive and require seasonal timing, emphasizing the value of early coordination to avoid schedule delays.

USACE also explained that **Section 404 Impacts**, defined as adverse effects on aquatic ecosystems from the discharge of dredged or fill material into U.S. waters, will be a key consideration. To minimize such impacts, USACE suggested that **boardwalk-style structures** may be an effective alternative to traditional trail fill sections, especially in sensitive wetland areas where footprint minimization is required.



U.S. Coast Guard Meeting

The project team met with representatives of the USCG on Tuesday, December 9, 2025, to discuss navigational considerations, regulatory responsibilities, and the federal permitting process associated with a potential pedestrian and bicycle bridge over the North Fork of the St. Lucie River. The discussion focused on ensuring the proposed crossing

preserves safe navigation both under existing conditions and for future waterway use. USCG staff described their role as the federal authority responsible for reviewing bridge projects to ensure that navigation is preserved today and in the future. The agency oversees bridge permitting, modifications, and compliance with regulations governing structures over navigable waters.

Bridge Height and Navigational Considerations

USCG explained that the bridge permitting process allows the applicant to propose a **range of potential bridge heights**, including both minimum and maximum clearances. These proposed elevations are evaluated in the context of existing navigation patterns, upstream and downstream constraints, and comparable bridge structures in the vicinity.



Florida Bonneted Bat

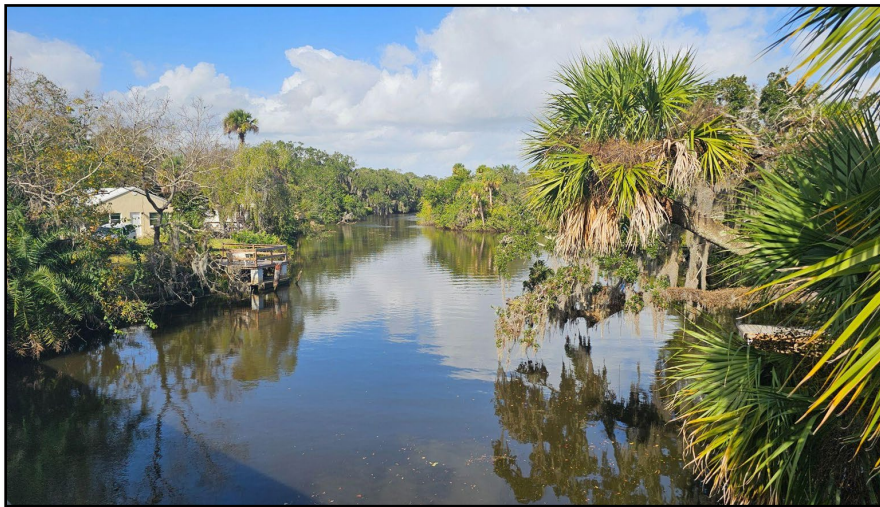


Tricolored Bat

The agency advised reviewing bridge clearances north of the project site as reference points during the feasibility and design process. USCG noted that the **proximity of the proposed bridge location to an existing boat ramp** increases the importance of careful review, as vessel maneuvering, launch activity, and future growth in boating demand must be fully considered when evaluating navigational impacts.

Permitting Process and NEPA Review

USCG outlined the steps required to advance bridge permitting under the **National Environmental Policy Act (NEPA)** framework. The applicant is responsible for gathering necessary supporting information and submitting **90 percent design plans** to USCG for formal review. As part of the process, a **Section 401 Water Quality Certification** application must also be submitted through the appropriate Water Management District.



St. Lucie River Looking North from Midway Bridge

Following submittal, the bridge permit application is issued for **Public Notice** by the agency. USCG will post the notice on its website, and the applicant is required to place a legal advertisement in a local newspaper. During the public comment period, USCG will respond to questions related to navigable waters, while the project team is responsible for addressing all other technical, environmental, or project-specific inquiries.

Coordination and Known Constraints

USCG indicated that it is **not currently aware of any planned projects** that would directly impact the proposed bridge location. The agency reiterated that early coordination and thorough documentation of navigational conditions will be critical to ensure an efficient permit review process.

Next Steps

USCG encouraged the project team to continue refining bridge concepts and gathering vessel usage information to support the permitting process. As the project advances, coordination with USCG will focus on confirming appropriate bridge height ranges, completing required environmental documentation, and preparing materials for public notice and review.



Florida Inland Navigation District Meeting

The project team met with FIND on Tuesday, December 16, 2025, to discuss navigational considerations, bridge clearance requirements, and potential funding opportunities associated with the Study. The discussion focused on ensuring compatibility between a future pedestrian/bicycle bridge and existing and anticipated navigation activity on the North Fork of the St. Lucie River.

Project Overview

The St. Lucie TPO provided an overview of the feasibility study, which seeks to identify an optimal and least-impactful location for a pedestrian and bicycle bridge connecting the Oxbow Eco-Center and the Citrus Hammock Preserve. **FIND staff acknowledged the importance of improving public access to waterways while maintaining safe and functional navigation corridors.**

FIND Role and Responsibilities

FIND explained that its primary role is to support safe navigation and vessel movement within Florida's inland waterways. The district also administers Phase 1 and Phase 2 Grant Programs that fund public access improvements such as boat ramps, waterfront parks, and other water-dependent recreational facilities. **FIND noted that projects enhancing multimodal access to waterways, including pedestrian and bicycle facilities, may be eligible for funding consideration.**

Planned and Funded Projects in the Region

FIND highlighted several funded public access projects in the region that reflect ongoing investment in recreational boating and waterfront access, including:

- White City Boat Ramp and Launch (anticipated 2026)
- River Park Marina Boat Ramp (anticipated 2026)

FIND staff indicated that a summary of additional funded projects would be shared with the project team. They also noted the



St. Lucie River at River Park Marina

potential availability of boating traffic data, which may inform bridge height and clearance decisions, and committed to following up if such data can be provided.

Bridge Clearance Requirements and Navigation Considerations

FIND emphasized that its **primary concern** regarding the proposed pedestrian/bicycle bridge is **vertical clearance** to ensure continued navigability of the North Fork of the St. Lucie River. Staff referenced nearby bridge clearances as benchmarks for the feasibility analysis:

- **Prima Vista Boulevard Bridge:** approximately 12.8 feet
- **Crosstown Parkway Bridge:** approximately 23 feet
- **Midway Road Bridge:** approximately 9 feet

Based on these comparisons, FIND recommended a **minimum vertical clearance of 12 feet** for any new pedestrian bridge to accommodate recreational vessels and maintain navigational continuity. FIND clarified that the district does not issue permits for bridge construction; however, its clearance guidance is an important input for design coordination with other regulatory agencies, including FDEP, USACE and the USCG.

Funding Considerations

FIND noted that the proposed bridge and associated trail connection could be eligible for funding if framed as part of a broader waterfront park or public access enhancement. This potential funding pathway reinforces the project's alignment with FIND's mission to expand safe, equitable public access to Florida's navigable waterways.

City of Port St. Lucie Meeting



The project team met with representatives from the City of Port St. Lucie Public Works Department on Tuesday, January 6, 2026, to discuss local planning initiatives, ROW considerations, and potential multimodal connections associated with the Oxbow Eco-Center. The meeting focused on how the proposed bridge and associated trail connections could integrate with planned mobility improvements and existing infrastructure along Canal 106 and St. James Drive.

City of Port St. Lucie Planned Projects and Mobility Initiatives

City staff shared information on several ongoing and planned mobility projects that may influence or complement the feasibility study. The City's *Mobility Plan* includes a planned SUP along St. James Drive, which is currently in the planning phase. Additionally, the city

has a separate project underway along Peachtree Boulevard. These initiatives indicate a broader interest in expanding bicycle and pedestrian infrastructure and improving non-motorized connectivity within the area.

Canal 106 Shared-Use Path and Bridge Access Discussion

A significant portion of the meeting focused on the feasibility of using the south side of Canal 106 as a multimodal connection between St. James Drive and the proposed pedestrian/bicycle bridge. The project team and City staff discussed the potential for a SUP along the canal's south bank to accommodate both bicyclists and pedestrians, while the north side of the canal would continue to function as an access road used by the Oxbow Eco-Center and City operations. City staff indicated support for a multi-use configuration on the south side of the canal, potentially incorporating:

- Bollards to manage access,
- A stabilized base suitable for maintenance and emergency access, and
- A 10-foot-wide asphalt path designed to meet SUP standards while also accommodating utility and service vehicles as needed.

City representatives noted that the city is exploring similar multi-functional corridor designs in other parts of the city, suggesting precedent for this type of approach for people walking, biking and rolling.

Land Use, Permitting, and Coordination Considerations

City staff raised several land use and regulatory considerations that will require further coordination as the project advances. Existing land use designations, including Open Space Conservation (OSC) Zoning, may limit certain types of development and could necessitate additional review or modifications to support a SUP. City staff also noted that water control structures can sometimes be considered a security asset or risk, and that internal coordination with the City's Stormwater Division would be necessary to evaluate implications. The city identified several key contacts who may be involved in future coordination:

- Stormwater Division Head, who may provide guidance on stormwater-related permits or approvals;
- Planning Division, who can assist with zoning, land use, and site planning considerations; and

City staff also indicated that there may be existing easement access along the canal, which could support the proposed alignment, though this would require verification. Depending on final design and alignment decisions, a city ROW Permit may be required to implement the proposed SUP along Canal 106.

Next Steps

The city committed to providing relevant staff contacts to support follow-up discussions related to planning, zoning, and stormwater considerations. The project team will continue to evaluate the Canal 106 SUP concept as part of the overall feasibility analysis, incorporating City input related to access, design standards, land use constraints, and permitting requirements.

Earth Day Community Event 2026

The project team attended the **22nd Annual St. Lucie Earth Day Festival** at the Oxbow Eco-Center on Saturday, April 18, 2026, from 10:00 AM to 4:00 PM to showcase the project and gather feedback from the community. The project team spoke to over 100 community members about the project with over 98% supporting the project. When the project team asked community members what types of features they would like to see as part of the proposed improvements, the following items were mentioned:

- Shade trees (7)
- Water fountains (7)
- Restrooms (7)
- Lighting (4)
- Bat houses (4)
- Butterfly gardens (4)
- Distance markers (3)
- Trash cans (3)
- Pet waste stations (3)
- Pollinators (3)
- Signage for natural habitats (3)
- Seating (2)
- No motorized mobility devices (2)
- Recycling (2)
- Environmentally friendly materials (2)
- Environmentally friendly construction practices (2)
- Fishing/observation pier (2)
- Bicycle and pedestrian separation
- Security
- Emergency response access



Earth Day Festival Flyer

There were two community members who were not in favor of the project.

Their main concerns were related to e-bikes/e-motos/dirt bikes using the facility and accessing their neighborhoods in addition to electronic mobility devices and their users not following the rules.

Other concerns included trash, noise pollution, poaching, and destruction of native habitat.

All comments and boards from Earth Day can be found in **Appendix C**.

Figure 4 includes a collage of photos from the event.



Figure 4: April 2026 Earth Day Photos

2. Summary of Existing Conditions

A geographic analysis of the study area was conducted to document existing conditions of the study area. Available data on socio-demographics, land use, property ownership, utilities, and environmental features were compiled and reviewed.

Background

The North Fork of the St. Lucie River is part of the St. Lucie Aquatic Preserve, established in 1972, is bounded to the north by Midway Road in White City and the southern boundary extends to just west of the Roosevelt Bridge (SR-5/US-1) in Martin County. The Aquatic Preserve is 2,972 acres and is west of the Intracoastal Waterway. The St. Lucie Aquatic Preserve is managed by the FDEP's Office of Coastal and Aquatic Managed Areas (CAMA).

The St. Lucie Aquatic Preserve supports a diversity of species and serves as an important nursery ground for a variety of fish and wildlife. There is a diversity of habitats within the preserve, including freshwater tidal swamps to estuarine mangrove forests and oyster reefs. Most of the preserve is between one- and five-feet elevation and consists of wetland communities including tidal and floodplain swamp and forest. The area is also subject to water quality issues from stormwater discharge and agricultural runoff.

Within the study area, there were sections of the North Fork St. Lucie River that was straightened between the 1920s and 1940s by the NSLWCD and USACE for navigation and flood control purposes. The associated spoil was piled as much as 25-foot high and 50-feet wide along the newly created channel, creating a non-contiguous berm that has isolated historic floodplains and cut off old riverbeds. Today part of the berm is used as a boardwalk along the western bank of the St. Lucie River at the site of the Oxbow Eco-Center. The County is currently working with USACE to re-hydrate the area north of the study area's broken oxbow.

The North Fork of the St. Lucie River has four public boat ramps, with the study area falling in between White City Park and River Park Marina's, along with three public canoe stopovers along the river, including one at the Oxbow Eco-Center, which also connects



Oxbow Trailhead and Amenities

into a hiking trail. There are six bridges that cross the aquatic preserve within St. Lucie County:

1. Midway Road (CR-712), at the northern boundary
2. Prima Vista Boulevard
3. Crosstown Parkway
4. Port St. Lucie Boulevard
5. Mapp Road, and
6. Murphy Road, at the southern boundary.

The study area falls between Midway Road and Prima Vista Boulevard Bridges, 1.5-to-2-miles respectively, from the study area.



Citrus Hammock Trailhead and Amenities

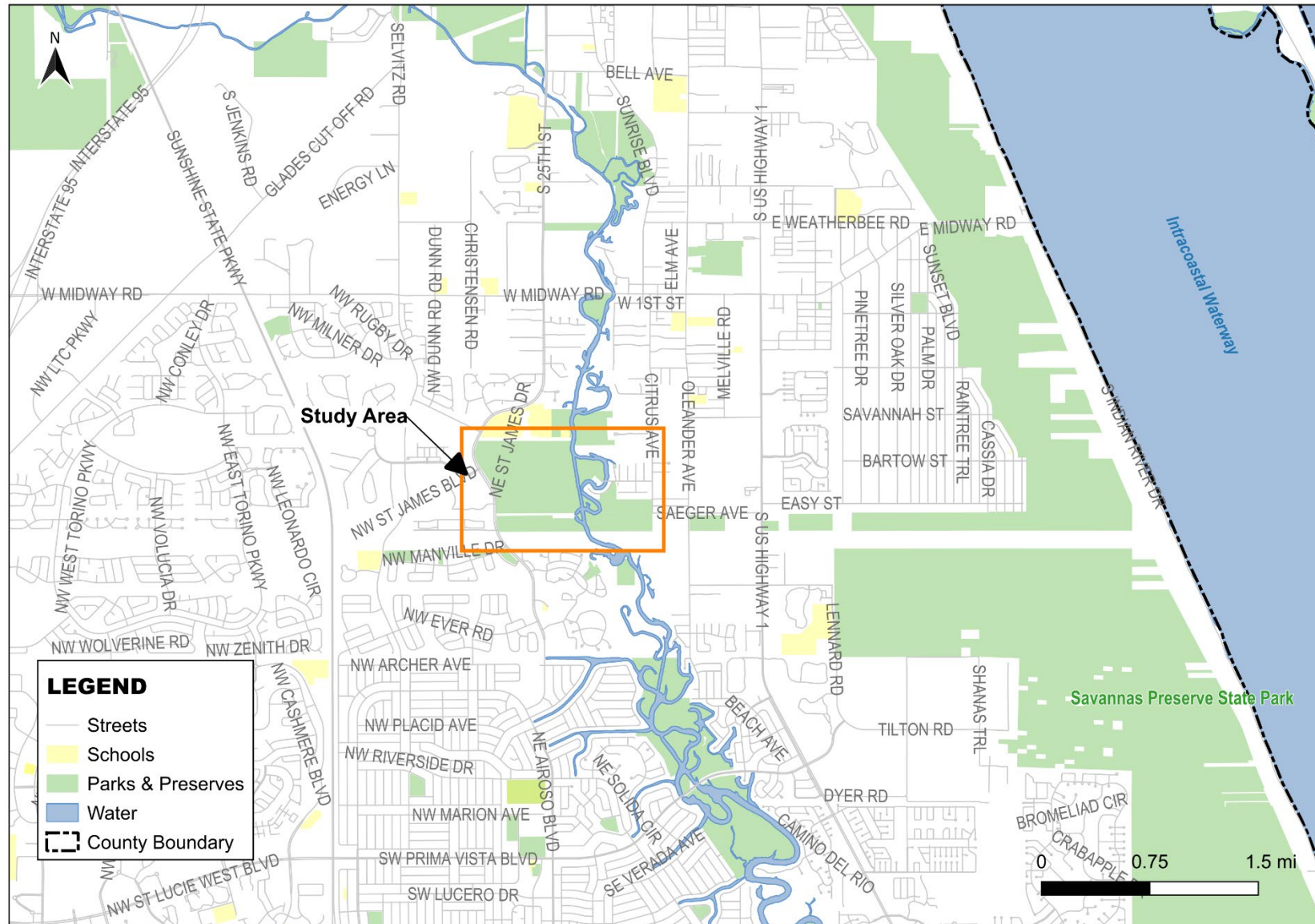


Figure 5: Study Area

Study Area

The study area encompasses the Oxbow Eco-Center and Citrus Hammock Preserve, **Figure 5**, which is characterized by rich natural environments and several existing infrastructure features that influence potential trail development. Both are part of the North Fork St. Lucie River Greenway, serving as critical wildlife corridors for the region.

The Oxbow Eco-Center, **Figure 6**, is a 225-acre preserve located west of the St. Lucie River and is accessible via St. James Drive, it is managed by St. Lucie County. The Eco-Center features pine flatwoods, floodplain forests, and seasonal wetland ecosystems, nature trails, and environmental education facilities. Wildlife at the center includes gopher tortoises, sandhill cranes, wading birds, and manatees. There are over 3.5 miles of hiking trails, an observation tower, boardwalks, and a canoe/kayak landing dock. The center itself includes solar panels, passive lighting, and rainwater cisterns. The Eco-Center has planned improvements, **Appendix D**, which include a new education building, an outdoor classroom, new trailhead, and 250 feet extension of the boardwalk in addition to a rebuilding of the existing boardwalk, and trail markers. Additional projects include footbridge, redesign and rebuilding of the canoe dock, rebuilding of the platform, and a pavilion for school field trips.

Citrus Hammock Preserve, **Figure 7**, is a 64-acre preserve located east of the St. Lucie River and is accessible via Citrus Avenue, protecting native habitat and providing opportunities for passive recreation. The preserve is dominated by a mature hydric hammock or wet forest and floodplain forest which includes ancient live oaks, laurel oaks, cabbage palms, red maples, and pond apple trees. There is a four-acre man-made pond designed to filter stormwater runoff from local streets before reaching the river. Wildlife at the preserve includes woodland birds such as Pileated Woodpeckers, Red-bellied Woodpeckers, and Cardinals. The pond attracts wading birds and other waterfowls. There is a ½-mile self-guided interpretive trail, fishing, and a stop-over for paddlers.

Figure 8 includes a map of property boundaries, outlining the parcels under review for this study. The St. Lucie River is managed by multiple agencies, including St. Lucie County, SFWMD, US Fish and Wildlife (FWC), USCG, and USACE. FPL is the owner of the Transmission Powerline Corridor south of the Oxbow Center and Citrus Hammock Preserve, the FPL Transmission Corridor has been identified as a conservation easement and wildlife corridor by the *North Fork St. Lucie Aquatic Preserve Management Plan*. Residential subdivisions are established to the west and east of the river near the preserves. Feasibility studies of similar trails prioritize routing on public parcels where it is possible to reduce costs and permit complexities.

In the area south of the broken oxbow, the North Fork of the St. Lucie River spans approximately 130 to 150 feet in width. North of the broken oxbow, the North Fork of the St. Lucie River splits in two, before meeting again into one river for the span of the Oxbow Eco-Center. At this split, the width of the river is between 640 to 725 feet in width, which includes Idabelle Island Marsh.

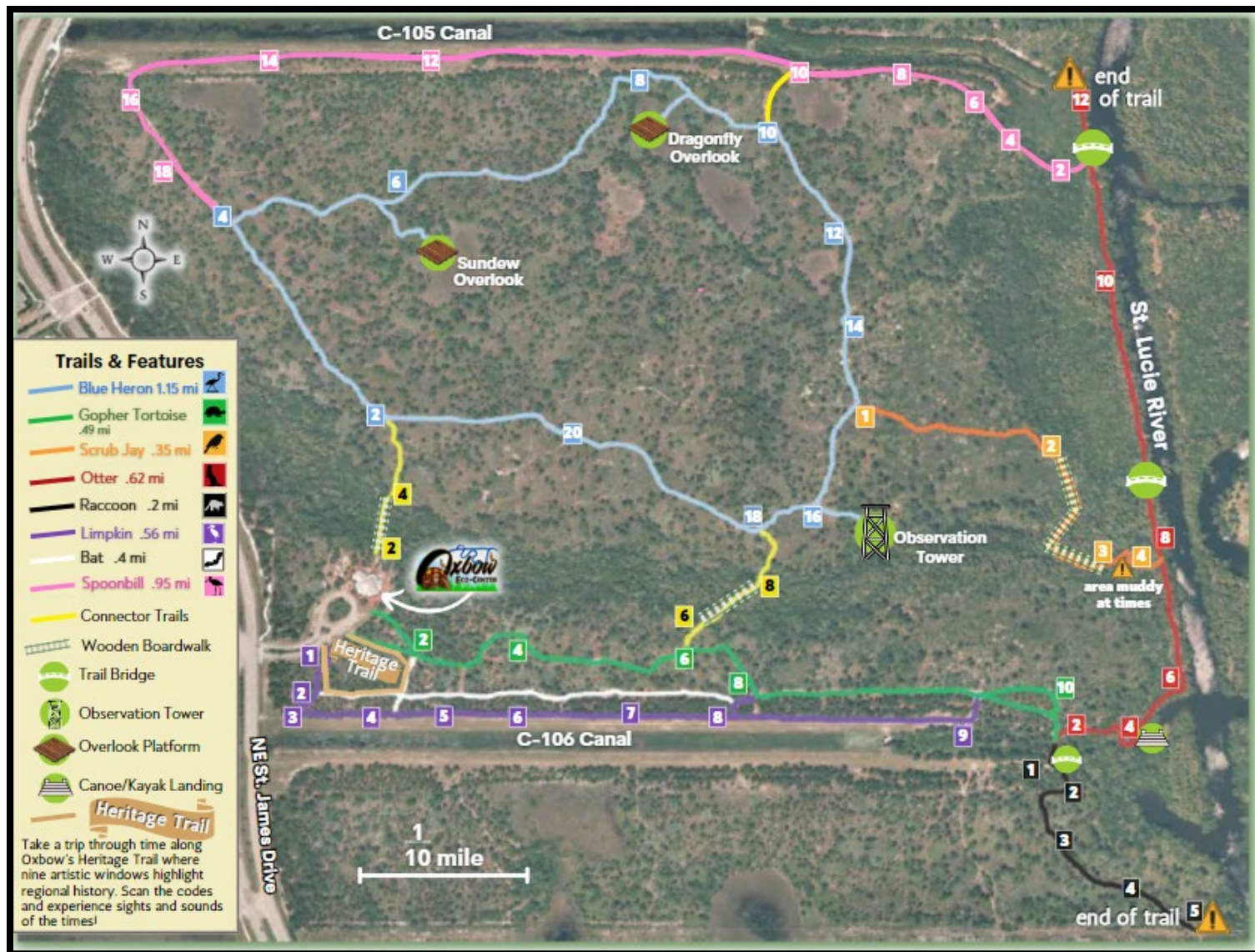


Figure 6: Oxbow Trail & Features Map

Citrus Hammock Preserve



Map Key

- Hiking Trail
- Future Hiking Trail
- Wildlife Viewing Areas
- Kayak/Canoe Stop-over
- Trailside Bench
- Trailhead
- Parking
- Picnic Areas

YOU ARE HERE

Scan for Digital Map

St. Lucie County Environmental Resources Department

Welcome to Citrus Hammock Preserve

This 64-acre preserve is located within the historic boundaries of White City. Citrus Hammock Preserve is an integral part of the North Fork St. Lucie River (NFSLR) the state designated paddling trail and acts as a green space for plants and wildlife.

Deep within this site lies a remnant of the historic floodplain forests like those that once lined the banks of the entire St. Lucie River. The half-mile interpretive trail weaves through the area once dominated by George Venters' citrus groves and tomato fields. Hike to see how the natural plant communities are steadily.

Restoration Efforts:
Importance of Preservation: Citrus Hammock Preserve was purchased with funds from the St. Lucie County Environmentally Significant Lands Bond Program, a local voter approved bond, and matched with Florida Communities' Trust Program, a State funding program to preserve and provide passive public access to Florida's remaining natural treasures. Acquisition of this site allowed for the continuation of the ecological corridor that runs along the NFSLR which was designated as an aquatic preserve in 1972.

Stormwater Pond: The 4-acre man-made pond provides habitat for wildlife such as wading birds and waterfowl, helps offset historic wetland habitat loss in St. Lucie County, and provides water quality and flood protection for stormwater runoff. Pollutants such as sediments, fertilizers, pesticides, heavy metals, oils and grease historically drained directly into the river; this pond now functions like a filter-system helping to trap and treat these harmful pollutants.

Plants and Wildlife:
 Citrus Hammock is home to many rare varieties of plants and wildlife. In fact, 13 of the species living in this preserve are listed as threatened or endangered. Commonly seen wildlife include: aquatic turtle species, barred owls, anhinga, raccoons, cormorants, great egrets, bobcats, wild hogs, and many species of snakes. Unique plants include: shoestring fern, pond apple, red maple, large historic slash pine, live oak, and many more.

The Pleasant Side of Poison Ivy: Believe it or not, the poison ivy (*Toxicodendron radicans*) growing within Citrus Hammock Preserve is an important food source for raccoon, rabbits, native bees and over sixty species of birds, many of which depend on this plant during migration. Although the roots, leaves, stems and fruits of this plant contain urushiol, a chemical that causes a severe and painful rash in humans, most wildlife is unaffected by poison ivy. This plant grows as a vine as seen in the image to the right, or as ground cover and shrub with alternative leaves which are pointed and usually shiny leaflets of three.

Take only photos and leave only footprints!
 Please observe all wildlife from a safe distance.



Shoestring Fern
Vittoria linearis



Peninsula Cooter
Pseudemys peninsularis



Raccoon
Procyon lotor



Halloween Pennant Dragonfly
Calthemis spumata

Preserve Etiquette:

Enjoy: Hiking, birding, photography, picnicking, other wildlife viewing or a peaceful retreat. Use Citrus Hammock Preserve at your own risk. Be aware of uneven slippery terrain and trip hazards. **Always be prepared for the Florida heat, sudden thunderstorms/lightning & wildlife.**

Call 911 in case of an emergency.

To ensure public safety and environmental protection, the following are **NOT** allowed:

- Motorized vehicles;
- Littering/destruction of property;
- Trapping, hunting, feeding, disturbing, or releasing wildlife;
- Removal of plants, animals, archeological or cultural resources.

Attention Pet Owners: Keep pets on a leash and pick-up pet waste, it's the law.

Fishing on site is catch and release only.

Pack: water, snacks, sunscreen, insect repellent, and a cell phone when venturing onto trails.

This site is open from Sunrise to Sunset.

For more information about this conservation area or other lands managed by St. Lucie County Environmental Resources, please contact:

St. Lucie County Environmental Resources Department
 2300 Virginia Avenue
 Ft. Pierce, FL 34982
 (772) 462-2526

Please help keep this area clean — Pack trash out with you!
 It takes your tax dollars to clean up vandalism and litter on public lands.

Figure 7: Citrus Hammock Preserve

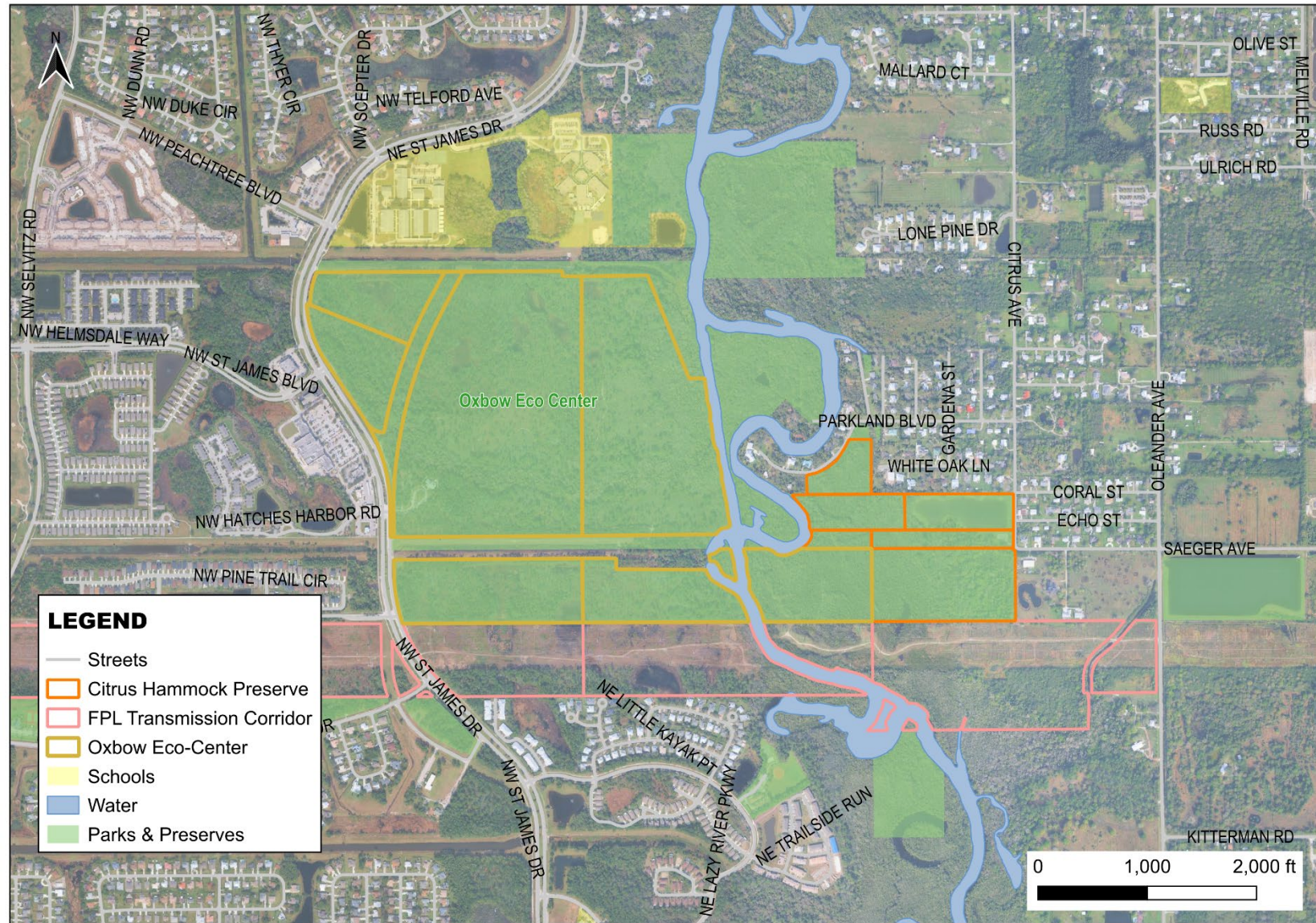


Figure 8: Property Boundaries Map

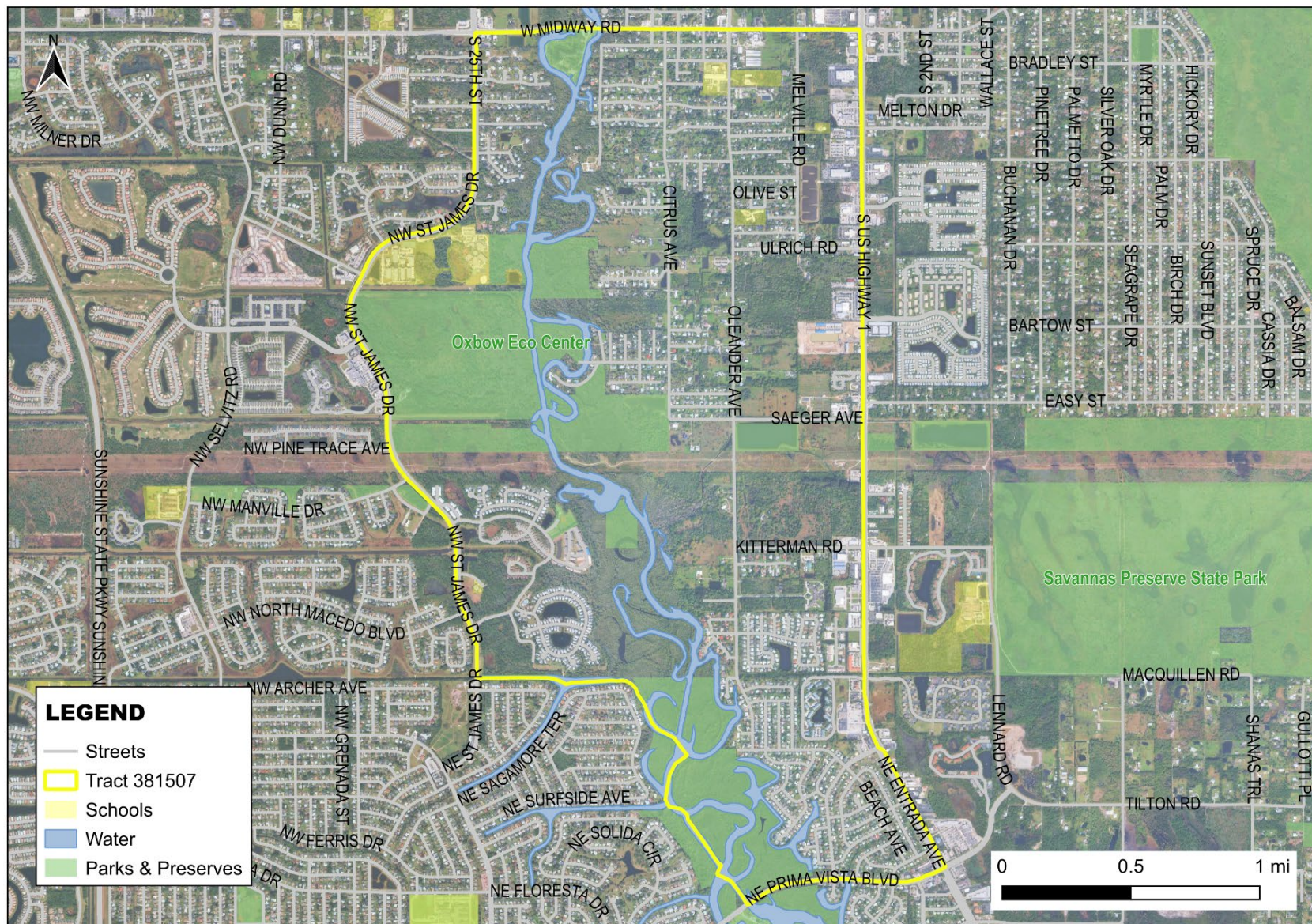


Figure 9: Study Area Census Tract

Socio-Demographic Summary

The study area sits within Census Tract 12111381507, which encompasses much of the surrounding Port St. Lucie suburban neighborhoods, see **Figure 9**. According to the American Community Survey or ACS, this tract has an estimated population of 6,406 residents over an area of 4.9 square miles.



The population in this community is older compared to the county, with a median age of 57.6 years versus the countywide median age of 45 years. Household incomes in the tract are higher compared to the county average, with a median household income of \$71,120 (compared to \$66,530 countywide). Per capita income is \$46,243 with a poverty rate of 4%, which is less than the county's 9.5% poverty rate. Education levels in the tract reflect higher attainment compared to the county average: 21.3% of adults hold a bachelor's degree or higher, compared to 16.6% across St. Lucie County.

The median travel time to work is 25.1 minutes, which is also consistent for the region. Within this census tract, average commute times are consistent with countywide averages (~30 minutes), indicating residents rely heavily on automobile travel to employment centers outside their immediate neighborhoods.

Regional commuting patterns in St. Lucie County shows that a large majority of residents commute by automobile to work, reflecting the suburban context. However, there is growing policy emphasis on diversifying travel options; the City of Port St. Lucie's *Mobility Plan* identifies multi-use trails, side paths, and bicycle / pedestrian facilities as critical investments to support safe, sustainable commuting.



Midway Road Approaching Midway Bridge Over the North Fork St. Lucie River

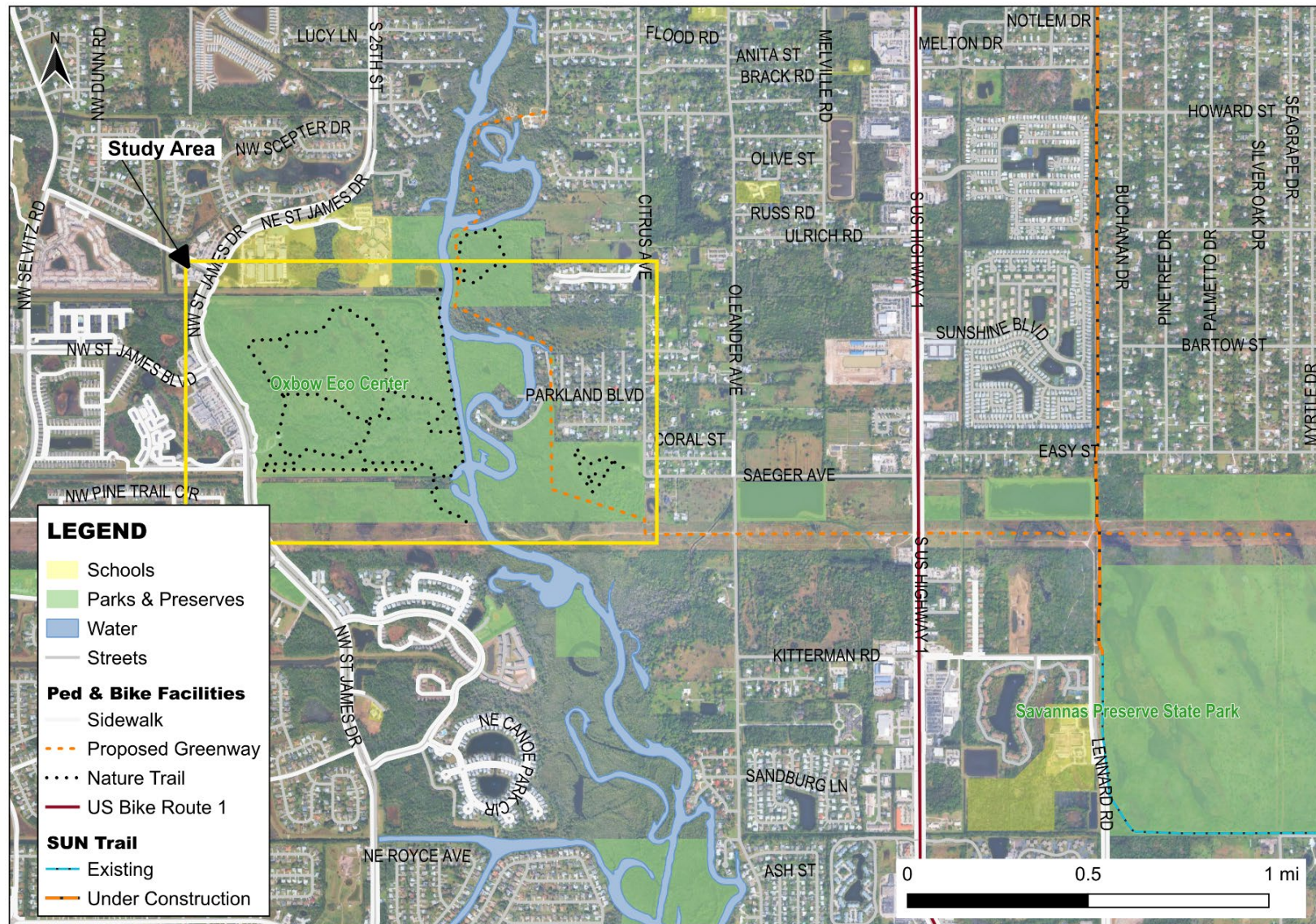


Figure 10: Study Area Connectivity

Study Area Trail Connectivity

The proposed connector would close a direct east-west gap across the river of approximately 0.2–0.6 miles (depending on landing locations and geometry) between existing trailheads/parking areas at the Oxbow Eco-Center and Citrus Hammock Preserve, thereby linking local trail assets with planned county and regional corridors. By connecting two managed preserves and tying them into the North Fork Trail and the ECG / SUN Trail can increase recreational ridership, foster ecotourism, and provide residents and visitors with safe access to long-distance trail routes. The ECG / SUN Trail system includes approximately 27-miles of regional trail connectivity within St. Lucie County which includes the 85-miles of trails and greenways envisioned by county plans.

By learning from these precedents, this Study has been tailored to not only find a technically feasible solution, but one that is environmentally responsible, publicly supported, and strategically significant for the region's trail system. These lessons will continue to guide the project as it moves beyond feasibility into implementation.



Educational Trail Signage



Trail Marker



Managed Areas

The proposed Oxbow Connector link runs east–west and effectively provides a straight-line alignment between the Oxbow Eco-Center and the Citrus Hammock Preserve. The study area is managed by various public and private entities, **Figure 11**, notably Oxbow Eco-Center and Citrus Hammock preserve, which are both managed by St. Lucie County. The Oxbow Eco-Center is operated and maintained by St. Lucie County ERD via a 99-year lease with the SFWMD, who is the property owner. Citrus Hammock Preserve is owned and operated by St. Lucie County ERD.

Adjacent properties include the FPL Transmission Corridor to the south, as well as numerous residential neighborhoods surrounding the preserves, on both sides of the river. In addition to the property owners, there are several agencies responsible for various activities related to the St. Lucie River and preserved lands. These stakeholders include:



Citrus Hammock Preserve

- **US Coast Guard (USCG)** is responsible for the safety, security, and stewardship of U.S. navigable waters.
- **US Army Corp of Engineers (USACE)** is responsible for managing, maintaining and regulating the nation's navigable water resources, including dredging to maintain channel depths in the St. Lucie Inlet and authorizing construction activities to protect navigation.
- **Florida Department of Environmental Protection (FDEP)** is the state's leading environmental regulatory agency.
- **Florida Fish and Wildlife Conservation Commission (FWC)** manages fish and wildlife resources and is responsible for boating safety regulations, including signage within the waterway.
- **South Florida Water Management District (SFWMD)** is responsible for managing and protecting water resources from Orlando to the Florida Keys.
- **North St. Lucie Water Control District (NSLRWCD)** is responsible for managing and maintaining the surface water drainage and flood control infrastructure in the area.
- **St. Lucie County** is responsible for policy, budget, land use, health, safety, and development in the county.
- **St. Lucie TPO** is responsible for allocating federal funds and long-range transportation planning within the county.
- **Oxbow Eco-Center** is both a nature preserve and an environmental learning center in Port St. Lucie, Florida and is also the Environmental Education and Community Outreach Division of St. Lucie County's ERD.

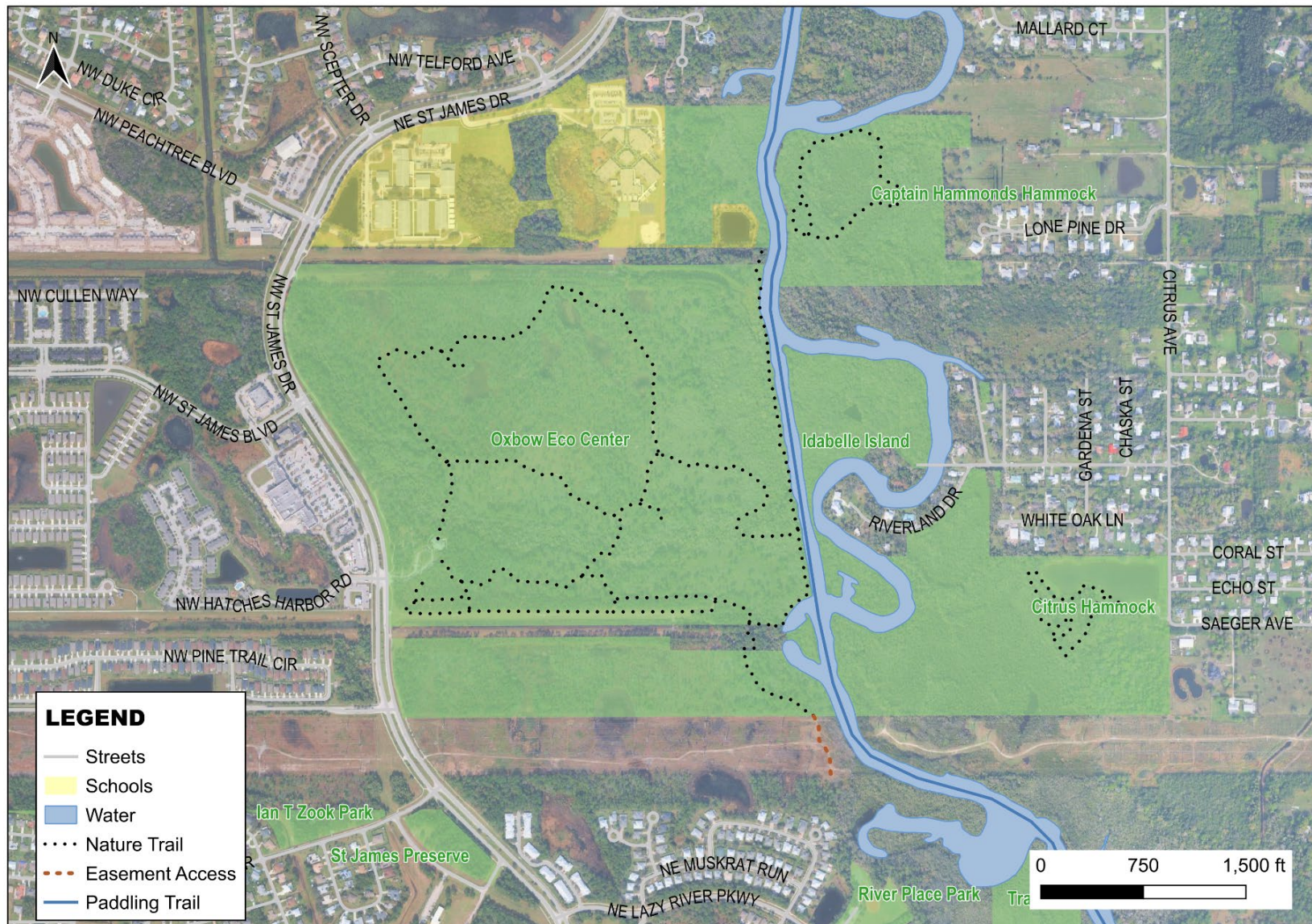


Figure 12: Study Area Recreational Features

Recreational Features



Oxbow Seating Along a Trail



Figure 13: Raccoon Trail Pedestrian Counter (2025)

Within the Oxbow Eco-Center, there are existing unpaved nature trails and boardwalks that approach the river's edge, offering scenic overlooks of the North Fork St. Lucie River. Nature trails within the Oxbow Eco-Center currently lack direct connectivity across the St. Lucie River. The absence of a river crossing for pedestrians and bicyclists represents a critical gap between these natural assets. Filling this gap would significantly enhance the functionality and connectivity of the region's active transportation network. The North Fork St. Lucie River itself is a designated Blueway, with paddling routes providing recreational opportunities for kayaking and canoeing.

On the Oxbow Eco-Center side (west), the primary access is via St. James Drive, there is an existing parking area and trailhead at the Oxbow Eco-Center. On the Citrus Hammock Preserve side (east), access is from Citrus Avenue; a small gravel parking area and kiosk exist at the preserve entrance. A new trail connector should be tied into these access points. ROW ownership along prospective alignments varies, much of the land is County-owned preserve or private utility, but there may be private parcels adjacent to the corridor (i.e., residential properties or undeveloped land) that must be identified to avoid trespass or to explore easement or acquisition, if necessary.

The project team was informed that the Oxbow Eco-Center managed a pedestrian counter on the Raccoon hiking trail leading toward the proposed trail alignments. Pedestrian counts show the access point receiving steady activity throughout the year with the most active time usage during the cooler and dryer parts of the year, see **Figure 13**.



Land Cover

On the east side, the Citrus Hammock Preserve primarily comprises of Mixed Wetland Hardwoods, Mixed Shrubs and Brazilian Pepper, with a notable four-acre retention pond in the interior of the preserve which collects and treats stormwater discharge. At this location, the river is an oxbow, a bend in the North Fork River, which contributes to scenic views but also indicates possible deeper channels or unique hydrological conditions to consider for bridge support.

The west end of the corridor at the Oxbow Eco-Center consists of Pine Flatwoods, Mixed Wetland Hardwoods, some Freshwater Marshes, and some Mixed Shrubs. The terrain on both sides of the river is low-lying and periodically inundated, reflecting the river's floodplain. This presents both ecological value and engineering challenges for a trail connection, such as the potential need for elevated boardwalks or bridging over wetlands.

These wetlands provide valuable wildlife habitat and water quality benefits, as noted in the preserve's management plan. The presence of wetlands means any trail or bridge construction must be sensitive to minimizing fill or dredge impacts. Elevated structures such as boardwalks on pilings will likely be used where the trail crosses wetland areas.



Citrus Hammock Wetlands



Citrus Hammock Trail seating



River Park Marina Wildlife



Utilities

A significant existing feature in the corridor is the FPL utility corridor spanning east and west, crossing the river, south of the Oxbow Eco-Center and Citrus Hammock Preserve, **Figure 15**. The FPL Transmission Corridor is a clear linear path containing high-voltage power transmission lines on tall towers from the nuclear power plant on Hutchinson Island westward across the Indian River Lagoon and our study area and ending just west of I-95. The *North Fork St. Lucie Aquatic Preserve Management Plan* highlights it as one of two wildlife corridors connecting Savannas Preserve State Park and the North Fork St. Lucie Aquatic Preserve.

The FPL Transmission Corridor initially presents a potentially feasible route for locating the trail and bridge. However, use of the FPL ROW would require coordination with the private utility company and careful design to ensure safety clearances under the power lines.

Although the corridor itself has been cleared, a bridge would still be required to span the river along this alignment. Such a structure would need to be newly constructed for pedestrian use, as there is no service bridge currently extending across the water. Any proposed structure could not exceed 14-feet vertical clearance from the existing grade.

St. Lucie County has obtained an easement access agreement with FPL for a 10-foot pedestrian accessway to/from the Oxbow Eco-Center and the River Place Community, a single-family residential neighborhood south of the Oxbow Eco-Center and FPL Transmission corridor, see **Appendix E**.

In addition to the transmission lines, there are various weirs, indicated by the red dots on **Figure 15** within the study area that the team is aware of. It is important to note that the project team does not anticipate impacts to existing weirs and will note if there are potential impacts upon further investigation. There are no other known utilities without a field review of the study area.



FPL Transmission Corridor

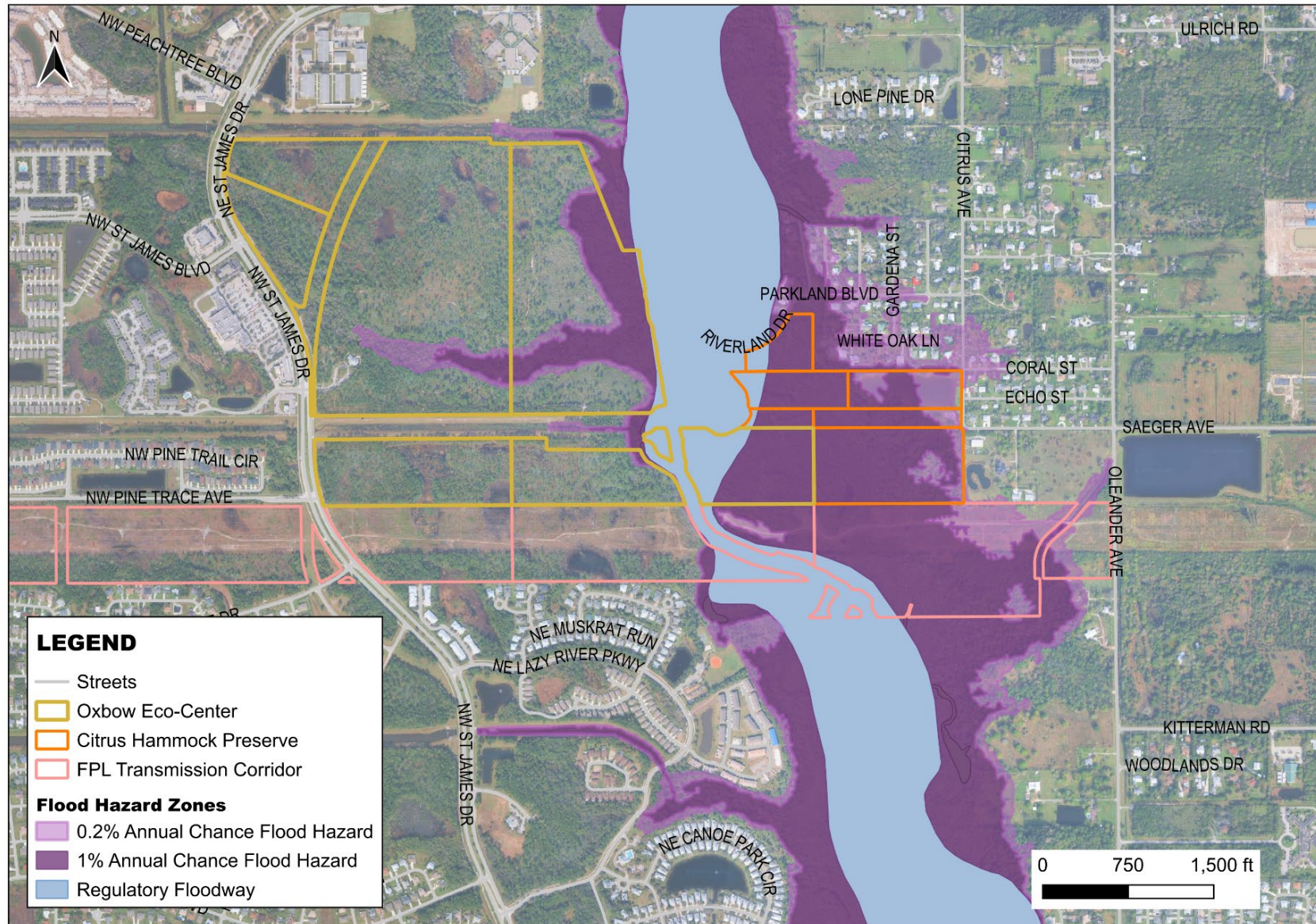


Figure 16: Study Area Flood Zones

Flood Zones

The North Fork of the St. Lucie River and adjacent floodplain wetlands create complex hydrology. Any crossing (bridge or boardwalk) must be designed for tidal flows and wet seasonal high water. USACE in partnership with St. Lucie County has a planned project to rehydrate the west riverbanks north of the broken oxbow. This project may provide an opportunity to coordinate planning efforts for public access.

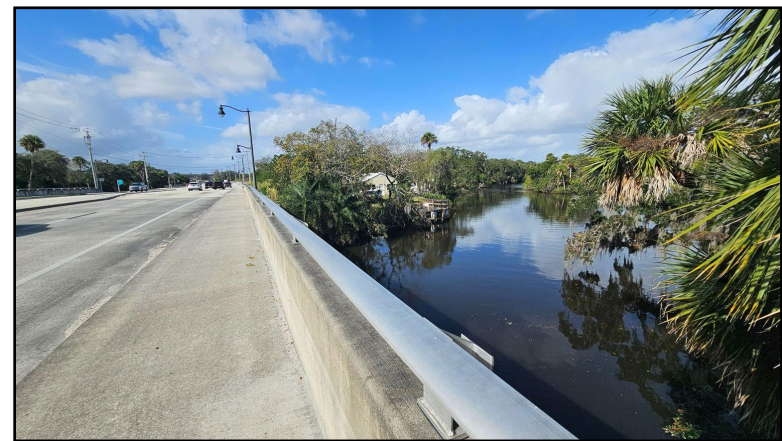
Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRMs), **Figure 16**, indicate that portions of the project area, particularly adjacent to the North Fork of the St. Lucie River, lie within the 100-year and 500-year floodplains. Any connector alignment must therefore account for flood resilience, structural design requirements, and potential permitting challenges associated with water crossings.

Regional planning documents (St. Lucie TPO LRTP and Florida Greenways guidance) emphasize resilience, designing trail and bridge features to accommodate future changes in flood frequency and water levels. Elevated trail approaches, longer spans to avoid placing fill in floodways; and low-maintenance, corrosion-resistant materials are recommended.

In addition to flooding, the Southeast Florida Regional Climate Change Compact recommends planning for 92 to 136 inches of sea level rise for projects that have an expected design life of 50 years or more.



Citrus Hammock Preserve Water Retention Area



Midway Bridge Looking West

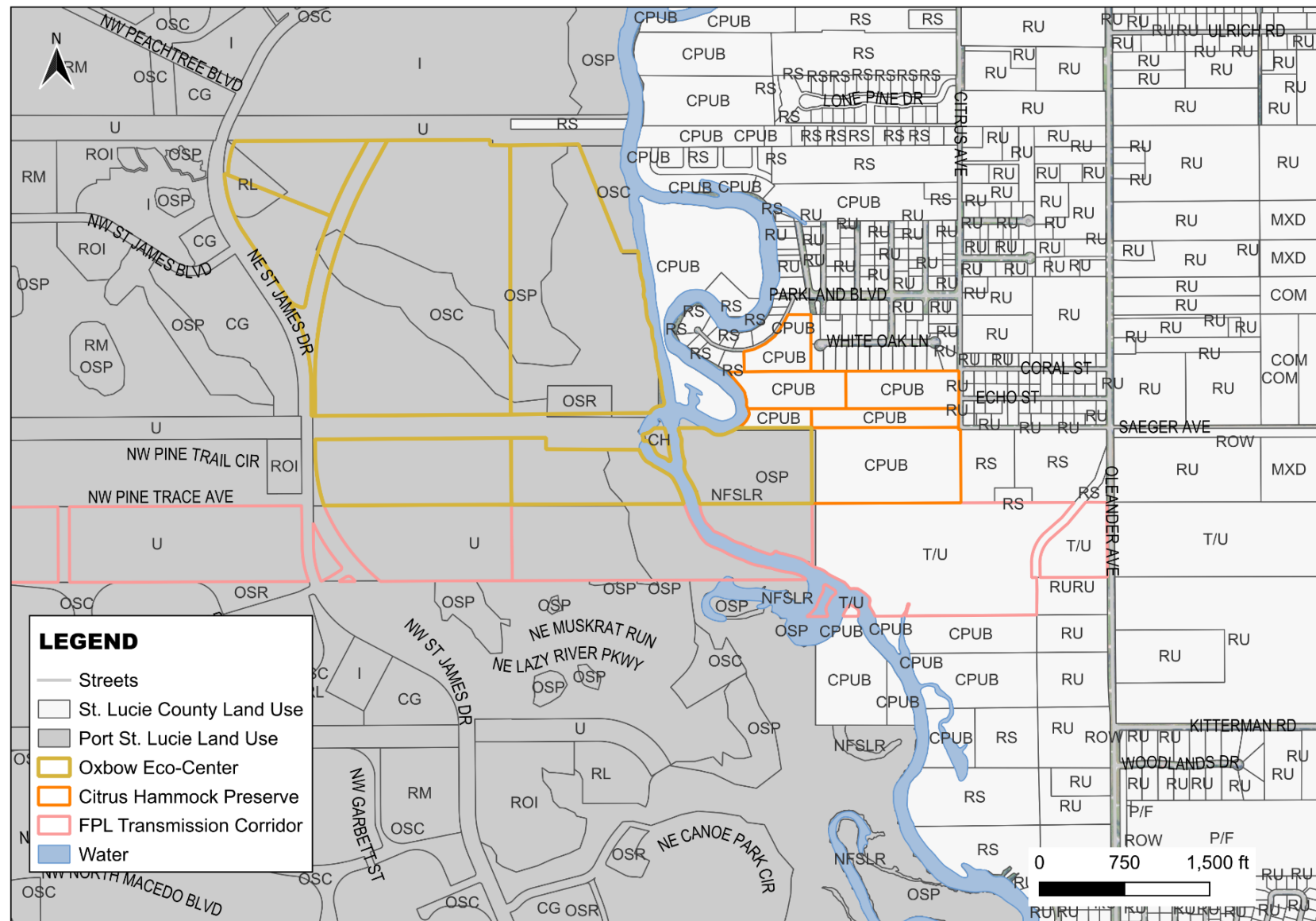


Figure 17: St. Lucie Future Land Use

Future Land Use

The study area falls within the boundaries of St. Lucie County to the east and the City of Port St. Lucie to the west. According to the County's Future Land Use Map, the study area land uses include Conservation Public (CPUB), Residential Suburban (RS), Residential Urban (RU), and Transportation/Utilities (T/U). The City of Port St. Lucie Land Use Map includes North Fork St. Lucie River (NFSLR), Open Space Conservation (OSC), Open Space Preservation (OSP), and Utilities (U).

According to the Future Land Use Map for Port St. Lucie and surrounding unincorporated areas, the neighborhoods around the Oxbow Eco-Center and Citrus Hammock Preserve are designated predominantly as Residential and Preservation/Conservation lands along the river corridor. These residential zones are car-dependent suburban neighborhoods, with limited pedestrian or bicycle connections across the North Fork. Existing roadways, such as St. James Drive (west side) and Citrus Avenue (east side), provide vehicular access to individual preserves but do provide viable connectivity for non-motorized users.

This underscores the benefit for local connections that reduces auto reliance for short trips, such as walking or biking, to a nearby preserve, park, or school. The Oxbow Connector would thus serve both recreational and functional commuting purposes. By creating a low stress, safe, and comfortable pedestrian/bicycle link across the river, the project would shorten travel distances between residential areas and natural/recreational amenities. In the longer term, integration with the North Fork Greenway and ECG / SUN Trail network will enhance non-motorized commuting options, tying the local neighborhood network to regional active transportation systems. This reflects the vision of balancing suburban residential growth with environmentally sensitive, multimodal infrastructure.



Bike Parking Near the Oxbow Eco-Center Educational Center and Trailhead

Findings

Overall, the project's purpose is to identify a pedestrian/bicycle connection that balances natural resource stewardship with non-motorized connectivity at the local and regional scale. The study area can be summarized as an ecologically sensitive landscape with high-value habitat; current crossings are located at Prima Vista Boulevard (~2 miles south) and/or Midway Road (~1.5 miles north). The groundwork laid in this phase, understanding environmental and socio-cultural conditions directly informed the development of feasible alignments.

The study's existing conditions assessment identified the general span length needed for a bridge (on the order of +/-140 to +/-175 feet, based on mapping) and the potential need for intermediate support or landing areas in the floodplain. The assessment considers all available utility data for the area (e.g. underground pipelines, overhead transmission lines, and outfalls) and any cultural or historical features (none were registered within the direct corridor, as the preserves are primarily natural lands).

From a planning perspective, demographics suggest a trail connection would serve a family-oriented and older population base with a mix of middle- and higher income households. The relatively high share of working-age residents and older families underscores the potential for strong demand for accessible recreational trails, safe active transportation routes, and educational amenities linked to the study area. The demographic composition reinforces how the Oxbow Connector could provide meaningful community health and recreational benefits while enhancing access to nature-based resources and conservation.

Existing Conditions Key Takeaways:

- The Oxbow Eco-Center is operated and maintained by St. Lucie County via a 99-year lease with the SFWMD, who is the property owner. The Citrus Hammock Preserve is owned and operated by St. Lucie County, both are public lands.
- The FPL Transmission Corridor is owned and operated by FPL, a private company.
- USACE has planned a project to rehydrate riverbanks north of the broken oxbow. This may provide opportunities to coordinate planning efforts for public access.
- The County has an easement agreement with FPL for pedestrian access to/from Oxbow Center and River Place community.
- SFWMD provided the current engineering standard for a pedestrian bridge, which is currently being revised.
- The FWC oversees signage within the waterway, this project will need coordination with FWC at later stages.
- The USCG oversees navigable waters and bridge permitting, this project will need early coordination for a bridge.
- Existing boat traffic will determine the height for the bridge.
- Design standards fall under FDOT, American Association of State Highway and Transportation Officials (AASHTO), and Florida Building Code standards.

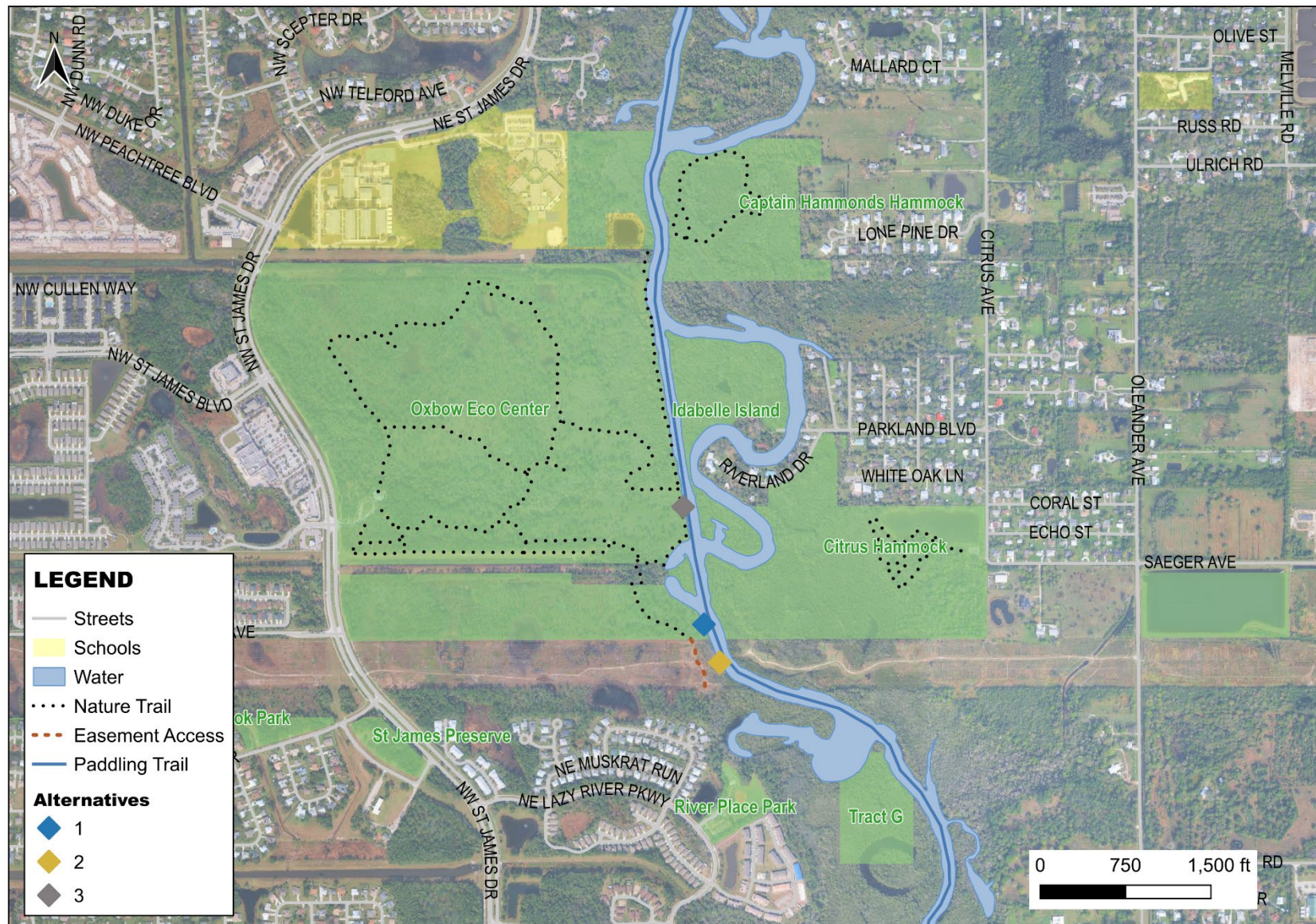


Figure 18: Bridge Location Alternatives

3. Route Alignment Alternatives

Using the collected data and stakeholder input, the project team developed three alternatives for the pedestrian/bicycle link. These included one option utilizing the area south of the broken oxbow, along Oxbow Eco-Center Lands, owned by SFWMD (Alternative 1); a second option using the existing FPL Transmission Corridor (Alternative 2), as well as a third option, north of the broken oxbow, along Oxbow Eco-Center Lands, owned by SFWMD (Alternative 3), **Figure 18**.

Each route alternative was examined at a planning level for feasibility factors such as land ownership and ROW availability, constructability (the need for bridge or boardwalk structures), connectivity to existing trails, user safety, and potential fatal flaws (e.g., insurmountable environmental or engineering constraints). A qualitative matrix of pros and cons was developed to summarize the findings for each option, including an assessment of impacts on social, natural, physical, and cultural features and then shared with stakeholders for feedback.

Project goals for this study were developed with stakeholders and are aligned with the County's Comprehensive Plan:

- Use county-owned preserve land to minimize acquisition;
- Limit disturbance of critical high-quality habitat;
- Provide direct, high-value connections between the two preserves; and
- Avoid fragmenting managed parcels or crossing private parcels unnecessarily.



Oxbow Eco-Center Trail Bridge, Educational Signage & Trail Marker

Alternative 1: SFWMD/Oxbow Eco-Center Property

Table 1 provides an overall summary of Alternative 1 proposed on the land owned by the SFWMD but is maintained via a 99-year lease by St. Lucie County. Some impacts to natural lands and wetlands are expected but would be mitigated with the opportunity to remove any existing invasive vegetation. This alternative would provide a direct link between the Oxbow Eco-Center and Citrus Hammock Preserve and future greenways and trails, in addition to providing a more direct route to ECG / SUN Trail Network and U.S. Bike Route 1. Furthermore, construction staging and equipment may pose a challenge, soil testing would be required to determine stabilization needs for the bridge structure. Riverbed borings to support a bridge, if needed. Wildlife surveys are also expected due to clearing needs for the pathway and bridge, in addition to the proposed boardwalk through Citrus Hammock Preserve wetlands. Maintenance requirements will include maintenance of a paved pathway, bridge structure, boardwalk, and amenities.

Table 1: Alternative 1 Assessment

Factor	Pros	Cons
Ownership & Access	County currently operates and maintains Oxbow Eco-Center property. City of Port St. Lucie owns parcels east and west of the broken oxbow.	SFWMD land subject to conservation restriction and potential future CERP needs, proposed infrastructure may need to be vacated if property is used for future CERP needs.
User Experience	Scenic, immersive natural experience and wildlife viewing; direct tie to Oxbow Eco-Center programming and education.	Bicycles are not currently permitted on Oxbow Eco-Center Trails, creating potential policy and operational conflicts.
Environmental Impact	Opportunity to highlight wetlands and habitats through education, provide scenic views of the North Fork of the New River and wildlife.	Sensitive and protected habitats, wetlands, marshes and floodplain areas present permitting and construction challenges. Impacts will require mitigation. Would require wildlife surveys. Clearing and land stabilization required for trail and bridge approach on the west side, wetlands will have impacts as a result of a boardwalk on the east side.
Construction Feasibility	Potential synergy with planned Oxbow Eco-Center improvements (e.g. boardwalks, new facilities). Potential to access and stage equipment within FPL corridor.	Bridges will require longer spans to account for ADA access. A boardwalk will be required for access to Citrus Hammock Preserve. Limited access for construction staging and equipment.
Connectivity	Direct link to the Oxbow Eco-Center, Citrus Hammock Preserve, future Greenways & Trails. Access to the ECG / SUN Trail and US Bike Route 1.	More recreational than commuter-oriented non-motorized travel.
Maintenance	Oxbow Eco-Center presence may support stewardship and monitoring.	Boardwalk structures are vulnerable to flooding, storm damage, and long-term maintenance costs. Bridge subject to maintenance and regular inspections.

Alternative 2: FPL Transmission Corridor

Table 2 includes a summary of Alternative 2 proposed on the FPL Transmission Corridor, which is owned and maintained by FPL, a private utility company. Coordination with the property owner would be required and include a maintenance and access agreement. Environmental impacts would be minimal since the land has already been cleared and stabilized. Construction would be a challenge due to existing transmission infrastructure (e.g., high-voltage power lines, towers, substations, and wires). This alternative would link both the Oxbow Eco-Center and Citrus Hammock Preserve and future greenways and trails, in addition to providing a more direct path to the ECG / SUN Trail Network and US Bike Route 1. Maintenance requirements include an agreement with the private property owner which includes, and may not be limited to, pathways, bridges, and amenities.

Table 2: Alternative 2 Assessment

Factor	Pros	Cons/Constraints
Ownership & Access	Existing FPL corridor has already been cleared, and there is a reduced need for land clearing. County currently has access agreement for 10'-wide pedestrian pathway.	Private property owned and maintained by FPL. County would require an access and maintenance agreement. Recreational access to transmission corridor.
User Experience	Wide sightlines, open, perceived safety, commuter-friendly alignment.	Less scenic and aesthetics are impacted by the overhead transmission lines. Lack of shade/canopy.
Environmental Impact	Minimal - land has already been cleared and stabilized.	Impacts (if any) would require mitigation.
Construction Feasibility	Surface is stabilized. At-grade trail is feasible, reduced need for a boardwalk.	Staging and equipment access for bridge construction will be challenging due to existing infrastructure.
Connectivity	Strong link to regional network and proposed trails.	Prohibited from utilizing existing access roads.
Maintenance	FPL maintains current infrastructure, landscaping, and access road(s).	County would require access and maintenance agreement for trails, bridge, and any additional infrastructure.

Alternative 3: North of the Broken Oxbow

Table 3 includes a summary of Alternative 3 proposed on land owned by the SFWMD and St. Lucie County. Environmental impacts are not fully realized but expected to be moderate to severe due to the width of the river at this point. Impacts are expected at Idabelle Island Marsh and Citrus Hammock Preserve wetlands. Careful consideration would also be required to avoid property owners along Riverland Drive. This location would connect to the existing Oxbow Eco-Center Boardwalk Otter Trail, which needs replacement. Construction may pose a challenge since the area would be difficult to access with construction equipment, although construction may most likely occur on the water utilizing a barge. This area would require more in-depth analysis. Maintenance includes pathways, bridges, boardwalk, and any amenities.

Table 3: Alternative 3 Assessment

Factor	Pros	Cons/Constraints
Ownership & Access	County maintains Oxbow Eco-Center. The County owns Idabelle Island.	SFWMD owns the Oxbow Eco-Center property. Idabelle Island is zoned for Conservation.
User Experience	Scenic, immersive natural experience and wildlife viewing; direct tie to Oxbow Eco-Center programming and education.	Bicycles are not currently permitted on Oxbow Eco-Center Trails, creating potential policy and operational conflicts.
Environmental Impact	Opportunity to highlight wetlands and habitats through education, provide scenic views of the North Fork of the New River and wildlife.	Sensitive and protected habitats, wetlands, marshes and floodplain areas present permitting and construction challenges. Impacts will require mitigation. Would require wildlife surveys. Clearing and land stabilization required for trail and bridge approach on the west side, wetlands and Idabelle Island will have impacts as a result of a boardwalk on the east side.
Construction Feasibility	Potential synergy with planned Oxbow Eco-Center improvements (e.g. boardwalks, new facilities) and USACE rehydration project.	Two bridges would be required in addition to a boardwalk on both sides. Limited access for construction staging and equipment.
Connectivity	Direct link to the Oxbow Eco-Center, Citrus Hammock Preserve, future Greenways & Trails. Access to the ECG / SUN Trail and US Bike Route 1.	More recreational than commuter-oriented non-motorized travel.
Maintenance	Oxbow Eco-Center presence may support stewardship and monitoring.	Boardwalk structures are vulnerable to flooding, storm damage, and long-term maintenance costs. Bridge subject to maintenance and regular inspections. Would require maintaining two bridge structures.

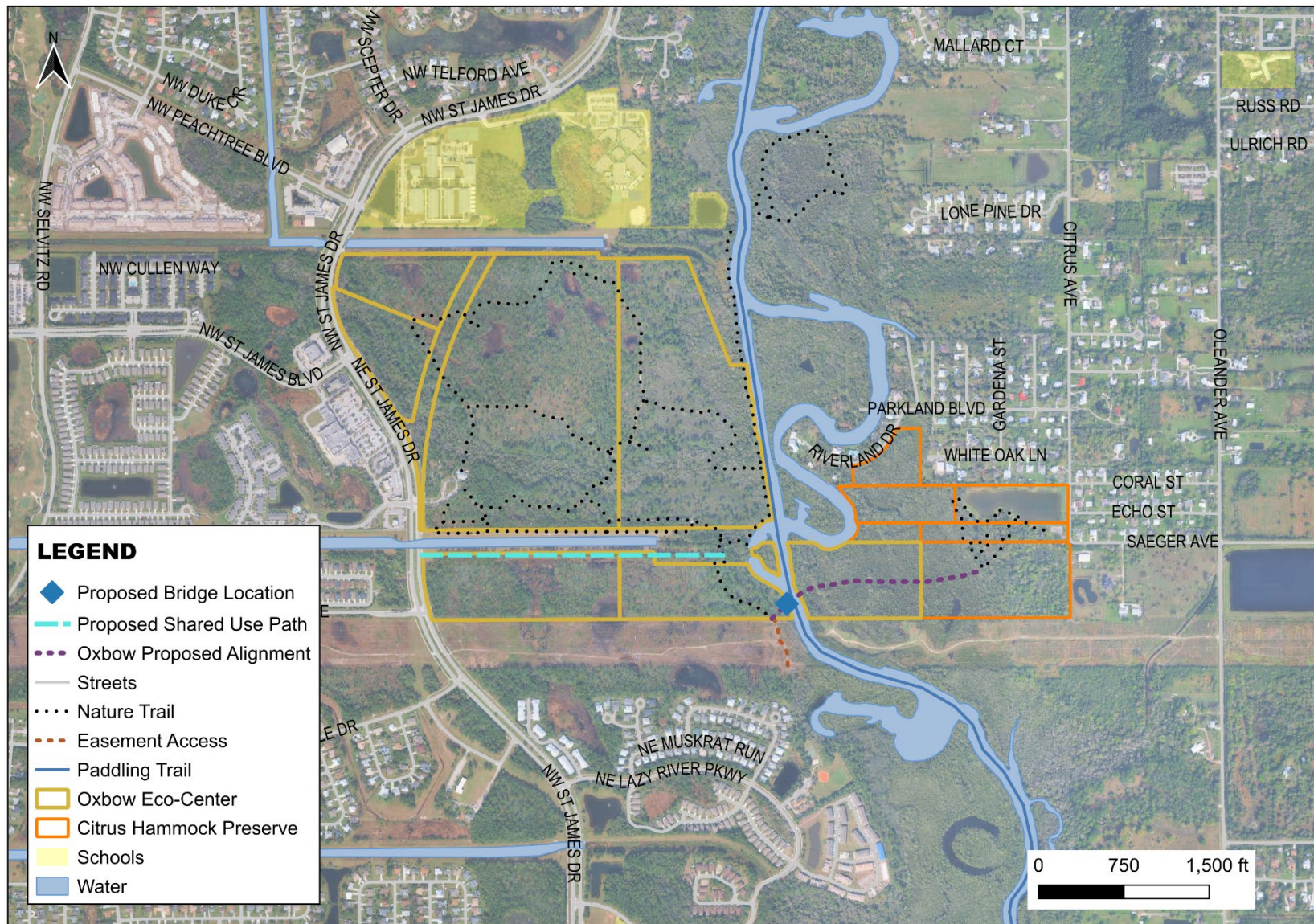


Figure 19: Proposed Alignments

4. Selection of Proposed Alignment

The selection of the preferred route alignment (**Figure 19**) and bridge location was determined from a review of existing conditions and input from stakeholders. Alternative 3 was eliminated early on due to several factors, including future projects to rehydrate wetlands and the need for more than one bridge or a very long bridge since the river splits in two in this section. There would also be impacts to Idabelle Island. Additionally, Alternative 2 was eliminated later due to restrictions within the FPL ROW and minimum height requirement for the bridge. **Table 4** provides an assessment of all three alternatives, goals of the project, and overall feasibility.

Table 4: Overall Alternative Assessment

Goals	Alternative 1	Alternative 2	Alternative 3
Overall Feasibility	Moderate	Fatal Flaw Exists	Difficult
Environmental Impacts	Minimal to Moderate	Minimal	Moderate to Severe
Connectivity	Yes	Yes	Yes
Avoids Fragmentation	Minimal to Moderate	Yes	Moderate to Severe
Private or Public Property	Public Lands	Private Property	Public Lands

Stakeholder input and involvement had originally selected Alternative 1, within the existing SFWMD property, and later research and discussions with stakeholders identified challenges with the other alternatives. The FPL Transmission Corridor is privately owned, there are restrictions on the public use of their lands, especially among the transmission corridors, including a 14-foot height restriction within the property make building a bridge a fatal flaw.

Figure 19 provides proposed routes connecting the Oxbow Eco-Center and Citrus Hammock Preserve for a potential bicycle/pedestrian bridge crossing. In addition to a proposed SUP along Canal 106 and boardwalk into Citrus Hammock Preserve. The area between the FPL Transmission Corridor and the broken oxbow will need to be further evaluated for a bridge connection. Further evaluation of the selected alternative will include and not be limited to:

- Site visit of the area
- Verification of utilities
- Soil testing/Riverbed boring
- Waterway traffic
- Habitat evaluation/impacts
- Wildlife surveys
- Corridor analysis

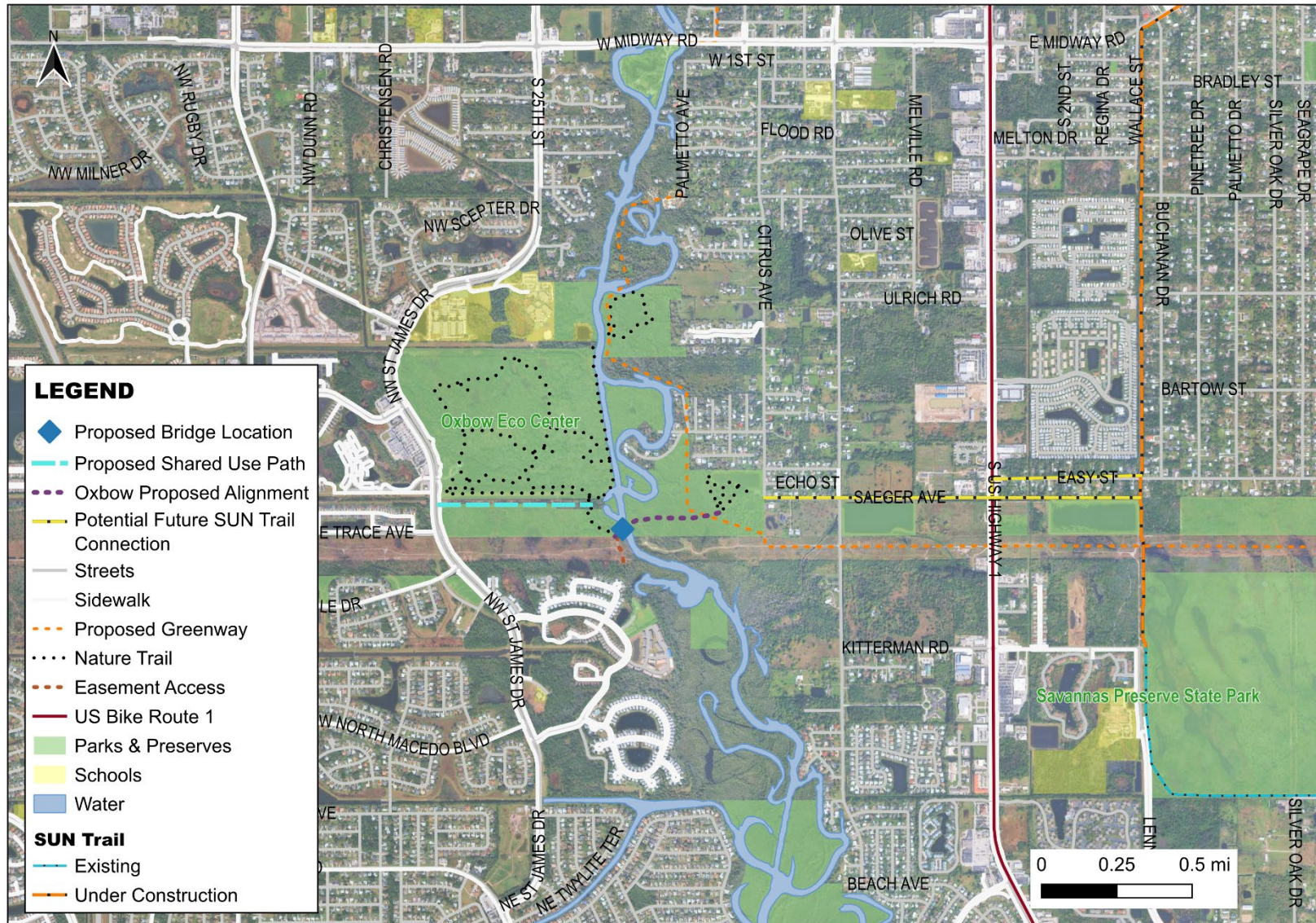


Figure 20: Connectivity & Network Integration Map

Connectivity & Network Integration

Connectivity and network integration is provided in **Figure 20**, illustrating the location of the existing street network, ECG/ SUN Trail, which is currently under construction, US Bike Route 1, St. James Drive, and Citrus Avenue. In addition to proposed greenways and trails.

This study identified Canal 106 for potential SUP which would connect to St. James Drive to the pedestrian/bridge connection, this route also avoids bicycle entry into the Oxbow Eco-Center. Other proposed pathways include a boardwalk connecting the proposed bicycle/pedestrian bridge to the Citrus Hammock Preserve along with a potential route to connect to US Bike Route 1 and future ECG / SUN Trail, this proposal would require additional review and analysis. The proposed improvements provide a critical link between:

- St. James Drive (planned shared-use improvements),
- The proposed pedestrian/bicycle bridge over the St. Lucie River
- The Oxbow Eco-Center trail network
- The broader regional trail system including the ECG / SUN Trail Network.

By utilizing an existing canal bank, the concept minimizes property acquisition needs while enhancing regional connectivity.

Supporting Features

When planning for a trail or pathway, it is important to consider supporting features which include, but are not limited to:

- Seating
- Shelter
- Trail Heads
- Trail Markers
- Educational Signage
- Lighting
- Emergency Access/Security
- Restrooms
- Water Fountains
- Waste/Pet Waste Receptacles
- Signage
- Bicycle Parking
- Bicycle Repair Stations
- Observation Areas/Outlook
- Habitat Restoration
- Safe, Comfortable, & Convenient Crossings

These items are sometimes considered amenities but are integral to use of recreational and transportation assets and increasing the safety, comfort, and connectivity of a pedestrian/bicycle facility.

Potential Impacts

When conducting the review of all alternative's, impacts were taken into consideration as part of the evaluation. This is outlined in the previous chapter. This section highlights potential impacts of the preferred alternative and route as it relates to social, natural, physical, and cultural features.

Social

Social impacts include connectivity of the surrounding neighborhoods, which could increase social cohesion and coordination. The St. Lucie River currently acts as a barrier between the two sides of the river; the proposed project would improve connectivity and access to natural features. The connectivity would improve access to parks, preserves, and schools, but it may also improve access to jobs and services. Furthermore, the recommendations take people with disabilities into consideration, which may improve access to individuals who do not drive. The pathway also has the potential to increase health outcomes including increased access to walking/biking trails/facilities and the known mental health benefits of being exposed to nature.

Adverse impacts may include land use changes, increased property values, which in turn may result in displacement of individuals. Taking the necessary policy actions to reduce displacement is recommended. Additional items to consider include security of the pathway/trail and access to natural areas for potential illegal activities such as wildlife trading, catching, poaching. Police members discussed issues with this occurring on the FPL Transmission Corridor at the Earth Day event; therefore, careful consideration should be taken to limit illegal use and activities occurring on natural lands and public assets.

Natural

Key considerations to natural resources include wildlife and biodiversity habitat, water quality, air quality, noise pollution, environmental hazards, and resource degradation. Construction causes habitat destruction and fragmentation, noise and air pollution. Ensuring construction practices are the least invasive and taking the precautions necessary to the natural area will be paramount, especially around water quality and pollution. Furthermore, connecting two preserves may cause increased movement of wildlife between the two preserves, understanding the benefits and challenges of this will be critical to ensure wildlife habitat and biodiversity is not negatively impacted.

Soil testing will be required to understand the soil composition to reduce erosion and ensure the existing areas can support a bridge structure. Protecting against erosion will also be key to ensure aquatic habitats and water bodies are not adversely impacted. In addition to soil testing, water quality monitoring, and surveys for species and water habitats will be critical to avoid adverse impacts. Because much of the project will be near or around the St. Lucie River, manatees, birds, fishes, and other land and aquatic species will

need to be monitored and considered during and after construction. Citrus Hammock includes a large area of wetlands, if a boardwalk is to be constructed, identifying an area that will be the least impactful to the wetlands is key. Wetland mitigation may be required.

Climate change and environmental hazards must be accounted for as hurricanes become stronger and more frequent and flooding becomes more regular. Ensuring structures meet the latest Florida Building Code standards will be crucial, considerations should be taken to the shoreline with living shoreline treatments taking precedent over hardening and the expectation of wet trails during periods of flooding or heavy rains. Materials within and along the pathway should be environmentally friendly and non-toxic. The bridge height should also take sea level rise into account.

Finally, heavy use of natural areas can result in degradation of the land, careful considerations should be considered for trash, regular use, and protected species. Ensuring the path does not cross important landscapes, species habitats or nesting grounds will ensure impacts are minimal. The area should also be surveyed to account for any invasive species and removal planned during construction of the pathway/trail and bridge.

Physical

Physical impacts include traffic and mobility, traffic safety, accessibility and connectivity. The proposed projects are separate facilities for walking, biking or rolling. These facilities will be considered a Level of Traffic Stress or LTS 1, level of traffic stress is a methodology to evaluate the level of stress a person may feel when walking, biking or rolling on a walking or biking facility. Since the facility is not located next to a motor vehicle roadway, this facility will be safe and comfortable for people of all ages and abilities. Furthermore, the St. Lucie River acts as a barrier between the two sides of the river, the proposed bridge will connect communities for people walking, biking, and rolling, providing several key benefits discussed under the social section above.

An important consideration will be access and connectivity to St. James Drive and Citrus Avenue. Ensuring pedestrian/bicycle crossings are marked with high visibility pavement markings and signage will ensure a safe and comfortable crossing for access to the proposed bridge, boardwalk, and trail. Further evaluation will be needed to determine the exact location of the crossing on St. James Drive and Citrus Avenue, in addition to treatment type (e.g., raised crossing, standard crossing, or signalized crossing). The project has the potential to increase walking and biking trips, especially between the two preserves.

Additional impacts to consider are the impacts of electronic mobility devices, including e-bikes, e-scooters, e-motos, e-unicycles, etc. During discussions with community residents, several residents discussed their concerns with these devices and their adverse impacts to the community and disregard to the current rules. As the Florida Legislature continues regulating these devices, it will be important

to not only educate the community, but monitor uses and trends related to electronic mobility devices. Furthermore, the county may want to consider the utilization of technology (e.g. sensors, cameras, drones) to mitigate illegal activities.

Cultural

During the existing conditions phase and discussions with stakeholders, there were no known cultural sites identified within the study area. There are no known historic structures, archaeological sites, or resources within the study area. The project has the potential to connect community, add gathering spaces, and provide community cohesion. The North Fork of the St. Lucie River is a protected Aquatic Preserve, and the necessary precautions and protections will need to be followed to ensure this rare and unique habitat is protected. Impacts, because of a bridge, pathway or boardwalk, are expected and mitigation should be planned and accounted for.



Citrus Hammock Preserve

5. Design, Permit Requirements, and Cost Estimates

This section provides preliminary overview of the design standards, permit requirements, and cost estimates for design and implementation of proposed improvements.

Design Standards

The conceptual design of the proposed pedestrian and bicycle bridge will be guided by nationally recognized engineering standards and applicable state and local regulations to ensure safety, durability, accessibility, and long-term functionality.

Bridge design will be developed in accordance with **AASHTO Guidelines** for SUP facilities and the bridge. Under AASHTO recommendations, pedestrian and bicycle bridges typically range from 8 to 12 feet in clear width, depending on projected usage and operational considerations. For this project, a minimum clear width of 10 feet is recommended to safely accommodate two-way pedestrian and bicycle traffic, with 12 feet representing best practice to support comfortable passing movements and increased user volumes. AASHTO standards also require that bridge railings for bicycle and pedestrian facilities have a minimum height of 54 inches to ensure user safety. Where bridge width exceeds seven feet, the structure must be designed to accommodate a maintenance vehicle, which influences structural loading requirements and overall bridge design. This will also be required for emergency access.

Because the project is in Florida and subject to regional environmental conditions, including high wind loads, storm exposure, and corrosive coastal environments, the bridge will also be designed consistently with the **FDOT Structures Design Guidelines**. These guidelines address Florida-specific material durability, environmental exposure considerations, and structural resilience requirements.

At the local level, the St. Lucie County Land Development Code (LDC) will guide connectivity requirements to ensure the bridge and associated approaches integrate with planned and existing pedestrian and bicycle networks. This coordination is critical to ensuring the crossing functions as part of a broader mobility system rather than as an isolated facility.

Accessibility will be governed by the **2023 Florida Building Code**, including applicable **Americans with Disabilities Act (ADA) standards**. Best practices for ADA access are now found in the Federal Highway Administration's (FHWA) [Public Right-of-Way Accessibility Guidelines](#) also known as PROWAG. It is important to note these requirements address ADA best practices, including maximum allowable slopes, landing intervals, handrail specifications, surface textures, and other accessibility elements to ensure the facility **accommodates users of all ages and abilities**.

Lastly, **vertical clearance requirements will be established in coordination with the U.S. Coast Guard** to preserve navigational capacity along the North Fork of the St. Lucie River. Based on preliminary discussions and the clearance of the existing Prima Vista Boulevard Bridge, a **minimum vertical clearance of approximately 12 feet is assumed for planning purposes**. Final bridge height will be confirmed through the USCG permitting process and supporting navigational analysis.

Together, these standards form the technical framework guiding the conceptual development of the proposed pedestrian and bicycle bridge, ensuring compliance with federal, state, and local requirements while supporting safe and durable infrastructure design.

Bridge Design Typical Section

Figure 21 illustrates a conceptual multi-use bridge configuration typical section; however, final design will be driven by navigational clearance requirements, environmental permitting constraints, structural loading demands, and long-term maintenance considerations. Early coordination with regulatory agencies and adherence to AASHTO, FDOT, and Florida Building Code standards will be critical to advancing the project from feasibility to implementation.

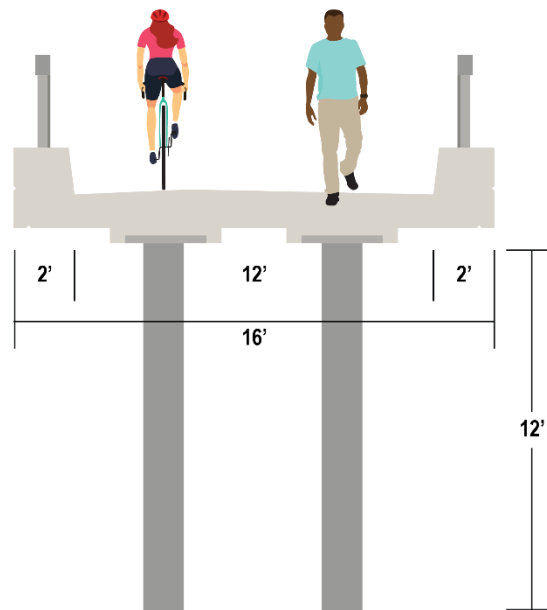


Figure 21: Bridge Design Typical Section

Shared-Use Path Typical Section

The Canal 106 SUP concept, **Figure 22**, represents a feasible and context-sensitive solution for improving bicycle and pedestrian connectivity in the study area. With appropriate attention to drainage constraints, ROW coordination, and ADA compliance, the corridor can function as a safe, durable, and regionally significant non-motorized connection linking St. James Drive to the Oxbow Eco-Center and future bridge crossing. The SUP should also be able to accommodate maintenance vehicles at the request of the City of Port St. Lucie. Green Infrastructure treatments should be considered for stormwater treatment, aesthetics, and other environmental/social benefits.

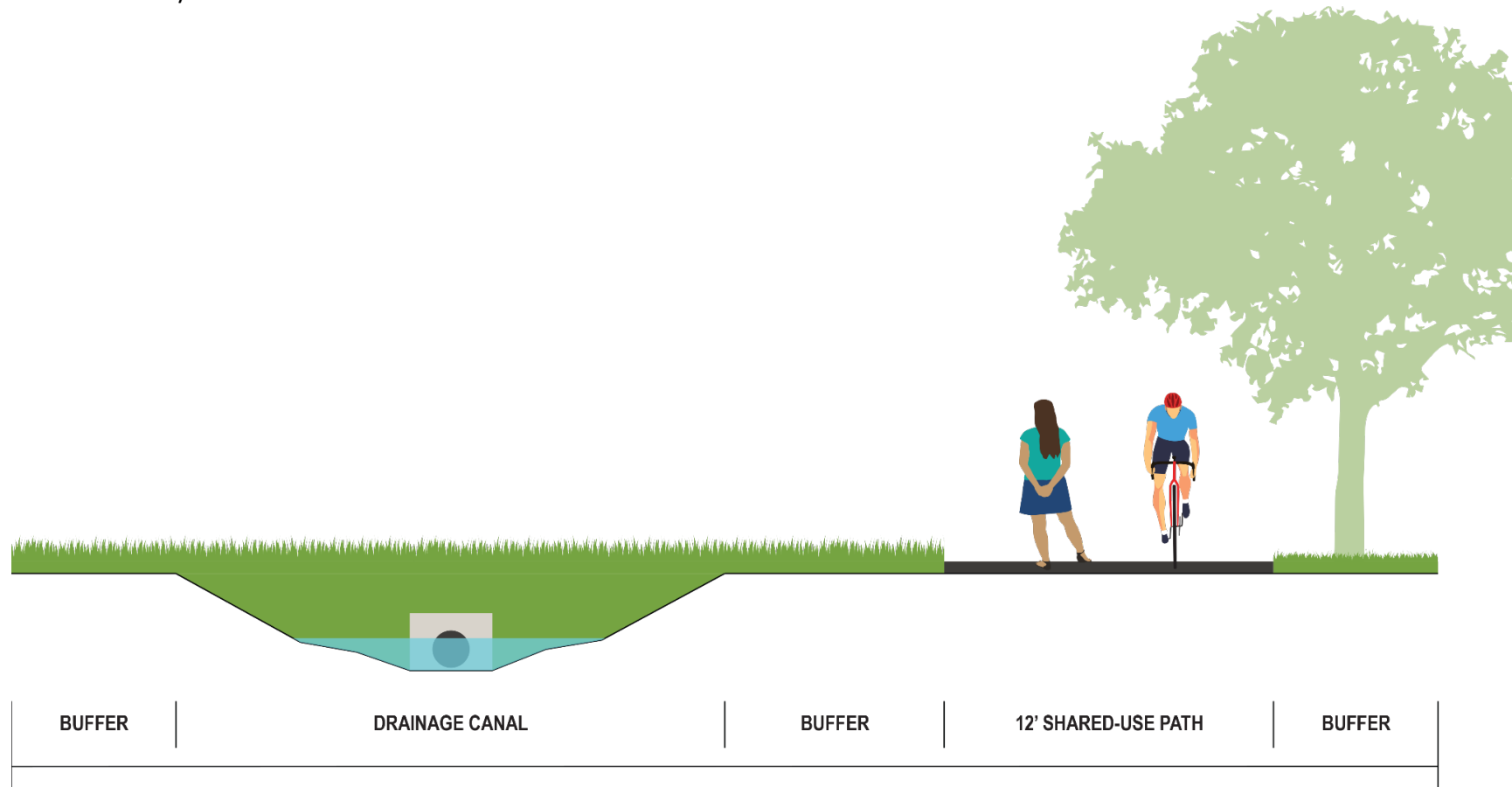


Figure 22: Shared-Use Path Typical Section

Permit Process

Advancement of the proposed pedestrian and bicycle bridge will require coordination with multiple federal, state, and local agencies. Based on preliminary agency discussions, a structured and proactive permitting approach will be essential to streamline review and minimize delays.

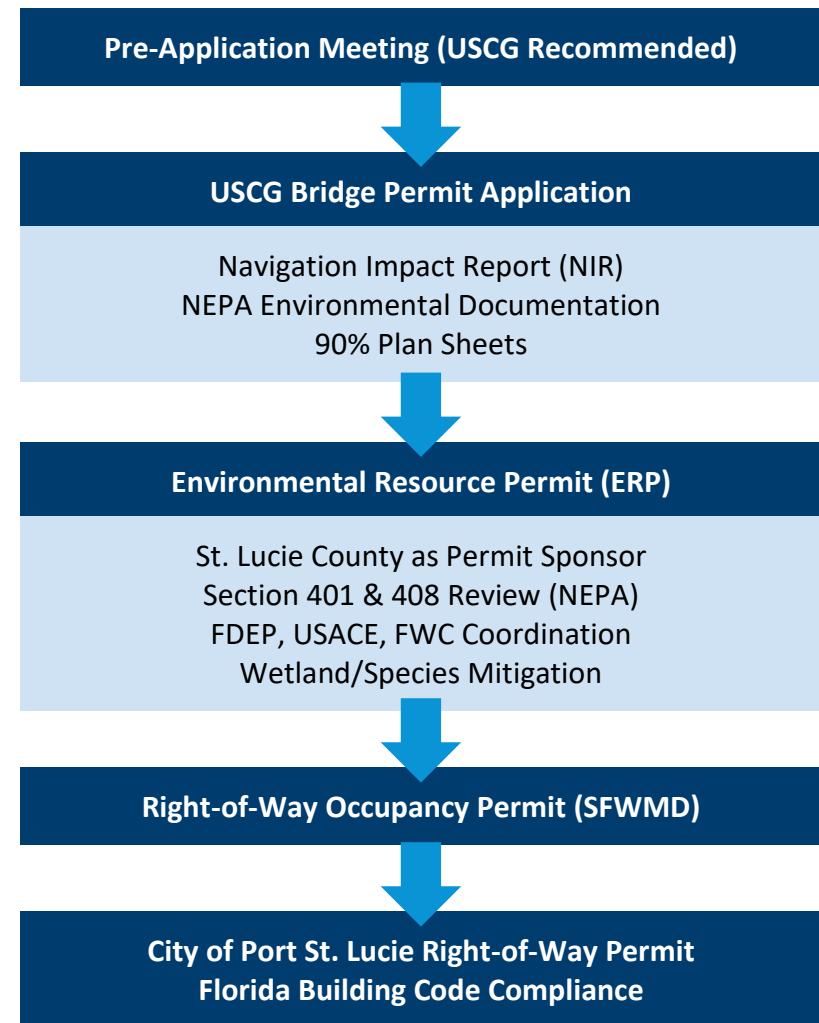
U.S. Coast Guard Bridge Permit

A **pre-application meeting** with the USCG is strongly recommended prior to formal permit submission. Early coordination will allow the project team to confirm navigational data requirements, clarify bridge height assumptions, and align documentation with federal review expectations.

The formal USCG Bridge Permit application will require submission of materials consistent with the agency's **Bridge Permit Application Guide, Appendix F**. Key components of this submittal will include:

- **A Navigation Impact Report (NIR)** documenting existing and projected vessel traffic, navigational patterns, and potential impacts to marine operations;
- Environmental documentation in accordance with the **NEPA**; and
- **Detailed plan sheets** reflecting approximately 90 percent design development.

USCG review will focus primarily on preserving safe navigation and confirming appropriate vertical clearance and structural configuration. USGC does not charge an application fee. However, there are costs associated with the technical studies required as part of the permit package.



Environmental Resource Permit

In addition to the federal bridge permit, **the project will require an Environmental Resource Permit (ERP)**. Because SFWMD owns the property where the bridge is proposed, St. Lucie County would serve as the permit sponsor. The ERP process will trigger additional federal coordination, including:

- A Section 401 Water Quality Certification review,
- A Section 404 Review Process; and
- A Section 408 Review Process (where applicable), conducted under NEPA for any impacts to federally authorized civil works projects.

The ERP review will include coordination with multiple resource agencies, including FDEP, USACE, and FWC. Impacts to wetlands, surface waters, or protected species habitats will likely require mitigation measures, which may include avoidance, minimization, compensatory mitigation, or habitat restoration strategies as determined during agency review. Mitigation for any impact on mangroves or seagrasses can cost between \$50,000 - \$150,000 per acre of impact.

The permit fee associated with an ERP permit can range from \$1,500 to \$5,000 in addition to the fees associated with mitigation. Furthermore, because the proposed bridge would occupy a state-owned riverbed, there is a **Sovereignty Submerged Lands Easement** of approximately \$800.

Additionally, 404 impacts to mangroves or wetlands may require the purchase of credits at \$100,000 per acre of impact. The purchasing of credits is only made once a determination has been made that impacts cannot be avoided or minimized. If future findings find that mitigation will be required, some things to consider:

- Can the bridge be moved to an area with no wetlands?
- Can the bridge be narrower or use a longer span to avoid putting pilings in seagrass?

Right-of-Way and Local Permits

Because SFWMD is the underlying landowner, a **Right-of-Way Occupancy Permit** will be required from SFWMD to authorize construction activities and long-term infrastructure placement within their property. Additionally, a **Right-of-Way Permit from Public Works** will be required from the City of Port St. Lucie to ensure compliance with applicable provisions of the Florida Building Code and to confirm adherence to local construction standards, access requirements, and inspection protocols.

Collectively, these permitting steps underscore the importance of early coordination and phased submittals. A coordinated strategy involving federal, state, and local agencies will be critical to advancing the project from feasibility to implementation while ensuring full regulatory compliance. A City ROW Permit from Public Works can range between \$100 - \$500+ depending on the level of review and complexity required.

Additional Fee Considerations

A \$250 fee is required for a **Generic Permit** for Stormwater Discharge from Construction Activities from FDEP. There is a high probability that a **Benthic Survey** (to check for seagrasses) and a **Manatee Impact Study** will also be required.

For the design of the bridge foundation, **boring of the riverbed will be required**. This typically requires a temporary permit to have a barge in the water, adding \$5,000 - \$15,000 in specialized mobilization costs.

For items such as lighting or emergency callboxes, there may be utility connection fees to consider, which can be \$5,000 - \$15,000 depending on the number of fixtures.

Finally, **Engineering/Design is typically 10 - 15% of the construction costs**, permit coordination can cost between \$10,000 - \$25,000, depending on the level of complexity.

Cost Estimate

Based on FDOT's Historic Cost Estimates in the Treasure Coast and current market trends **Tables 5** through **Tables 8** include cost estimates for the proposed pedestrian/bicycle bridge, 12-foot SUP, +/-1,500-foot boardwalk, and potential amenities that are typically associated with trails.

Table 5 includes an estimated price for the proposed bridge, foundation, and mobilization. The figures assume a prefabricated steel truss or concrete girder system. High-end aesthetic finishes (e.g. decorative lighting, custom railings) can increase these costs by 15% - 20%.

Table 6 includes a cost estimate for the proposed SUP. The use of permeable pavement can increase this cost by 25% - 50% and require special equipment and maintenance.

Table 7 includes the estimate for a proposed +/-1,500-foot boardwalk through Citrus Hammock Preserve and **Table 8** includes a breakdown of additional items to consider for the proposed pathway, including amenities, signage, landscaping, etc.

Table 5: Pedestrian Bridge Cost Estimate

Cost Component	Estimated Unit Price (2026)	Estimated Subtotal
Bridge Superstructure	\$550 - \$850 per Sq. Ft.	\$1,276,000 - \$1,972,000
Substructure / Foundations	25% 30% of the superstructure	\$319,000 - \$591,600
Mobilization	10 - 15% of Construction Cost	\$159,500 - \$384,540
Total Construction Cost	Rough Order of Magnitude	\$1.75 M - \$2.95 M

Furthermore, there are several factors which can impact the bridge cost estimate, this includes:

- **Foundation Type:** If the soil near the river is “muck”, deep piling (60 - 80 feet) will be required, pushing costs toward the high end of the estimate.
- **Clearance vs. Approach:** A 12-foot clearance over the water requires long ADA-compliant ramps (1:12 slope) on either side to reach the boardwalk, which may add another 50 - 100 feet of the bridge structure not included in the estimated 145-foot span.
- **Environmental Mitigation:** State and Federal agencies may require “turbidity curtains” and manatee observers during construction, which are standard pay items, but can add-up quickly.

Table 6: Canal 106 Shared Use Pathway Cost Estimate

Cost Component	Estimated Unit Price (2026)	Estimated Cost
Clearing & Grubbing	\$15,000 - \$25,000 per acre	\$12,000 - \$20,000
Earthwork / Grading	\$25 - \$45 per linear foot	\$50,000 - \$90,000
Sub-Base (6" Limerock)	\$15 - \$22 per Sq. Yd.	\$40,000 - \$58,600
Asphalt (1.5" - 2" Type SP)	\$18 - \$28 per Sq. Yd.	\$48,000 - \$74,600
Mobilization/MOT/Administration	15% - 20% of Construction Cost	\$22,500 - \$48,600
Total Estimated Cost	Rough Order of Magnitude	\$172,500 - \$291,800

The SUP cost estimate is based on an asphalt pathway which requires a sealcoat every 5 years and resurfacing every 15 years. If a concrete pathway is preferred, this can increase the estimated cost by approximately \$40,000 - \$60,000 but can last 30+ years with minimal maintenance.

Table 7: Boardwalk Cost Estimate

Cost Component	Estimated Cost Per Sq. Ft. (2026)	Estimated Cost
Timber (Pressure Treated)	\$110 - \$160	\$1.98 M - \$2.88 M
Composite	\$150 - \$210	\$2.70 M - \$3.78 M
Concrete	\$190 - \$260	\$3.42 M - \$4.68 M

Considering the Florida weather, **Timber is not recommended** as deck board replacement would be required every 10 - 12 years. While concrete has the highest installation cost up front, **there is little maintenance involved and concrete has a lifespan of 50+ years**. In addition to the above estimated construction cost of an elevated boardwalk, there are additional costs that should be considered, this includes:

- **Handrails:** These are requested in stainless steel or cable-stay railings which can add an additional \$300,000 to the above-mentioned totals.
- **Lighting:** The addition of low-profile rail lighting or bollards every 30 feet can add \$150,000 to \$250,000 in electrical and conduit costs. Lighting should be “Dark Sky” compliant to protect wildlife and the night sky. Therefore, lighting should be orange or red to minimize disruptions to wildlife and communities.
- **Bump-outs/Observation Decks:** Are popular in natural areas for wildlife viewing, these are also called “scenic overlooks.” Standard size bump-outs are typically 10’ x 15’ or 150 square feet and can cost between \$25,000 - \$45,000 per bump-out.

Table 8: Estimated Cost for Miscellaneous Pathway Components

Cost Component	Estimated Price (2026)	Notes
Mid-Block Crossing	\$125,000 - \$250,000 per location	Includes paint, RRFP, and ADA Ramps
Environmental Surveys	\$25,000 - \$50,000 per survey	Minimum 2 surveys will be required. May need additional surveys depending on future findings.
Contamination Screening	\$15,000 - \$30,000	If required, for soil and groundwater testing for hazardous materials.
Bench	\$1,500 - \$3,000 each	This includes concrete pads and stainless steel or powder coated aluminum. Marine grade materials are recommended due to the proximity to the sea water.
Trash/Recycling Receptacles	\$1,200 - \$2,200 per unit	This includes animal resistant lids.
Shade Trees	\$850 - \$1,500 per tree	Standard trees are typically a 2.5" to 3" caliper.
Community Wayfinding Sign	\$2,500 - \$7,500 per sign	Price includes decorative post and blade.
Water Fountain (ADA/Bottle Filler)	\$6,000 - \$10,000 per station	Price includes water line tie-in and dedicated drainage connection.
Post-Top Pedestrian Light (LED)	\$8,000 - \$15,000 per pole	Price includes the concrete base, pull boxes, fixture, and conduit.
Solar Pedestrian Light	\$6,000 - \$9,000 per pole	No trenching or wiring needed, but there is a higher maintenance cost due to the battery requiring replacement every 5 years.
Bike Racks (U-Loop or Inverted U)	\$800 - \$1,500 per rack	Price includes installation, concrete thickener, and high-strength stainless steel bolts.
Bike Repair Station	\$2,500 - \$4,500 per station	Price includes the tools on cables and an integrated air pump.
Solar Cellular Call Box Tower	\$12,000 - \$18,000 per unit	Price includes the 9-foot blue light tower, solar panel, and cellular transmitter.
Post-Mounted Call Box	\$4,000 - \$7,000 per unit	Operational costs include monthly cellular service fee per box of approximately \$50 - \$100 per month.
Automated Pedestrian/Bicycle Counter	\$6,000 - \$10,000 per unit	Price includes permanent sensors installed in the pathway or trail to track 24/7 usage.
Information Kiosk	\$8,000 - \$15,000 each	Price includes the roof, panels, metal frame, and concrete pad.
Covered Pavilion	\$45,000 - \$75,000 each	This is for a standard 20' by 20' pavilion.
CCTV/Security	\$15,000 - \$25,000	Price includes cameras and solar/hardwired connectivity.
Restroom Facilities (Prefabricated Concrete)	\$230,000 - \$350,000	Prices include a standard 2-stall vaulted or plumbed restroom plus utility stub-outs.

The **total cost of the proposed improvements would cost between \$5.3 to \$8 million dollars⁴**, with lower costs available if composite was decided upon rather than concrete for the boardwalk. The estimated price does not include amenities or the cost of additional studies.



Oxbow Eco-Center Trail

⁴ This cost assumes the use of concrete for the boardwalk.

6. Implementation

Funding Strategies

The proposed project touches upon transportation, environmental conservation, outdoor recreation and ecotourism providing several programs and grant strategies available to St. Lucie County for implementation. The following federal, state, and local grant programs are available for implementation of the project.

- **Safe Streets for All (SS4A):** This is a federal grant opportunity focused on safety, since the proposed shared use pathway, bridge, and boardwalk avoid high-traffic crossings, framing this project to avoid fatalities and improving safety of vulnerable users will be key.
- **Land and Water Conservation Fund (LWCF):** This is a federal program administered by the FDEP providing matching grant funds for the acquisition of development of public outdoor recreation areas.
- **Transportation Alternatives (TA) Set-Aside:** This is a federal program managed through the St. Lucie TPO and FDOT. Since the proposed Canal 106 SUP would connect neighborhoods and communities, the SUP would be eligible for TA grant funding.
- **Section 319 Grant Program:** Is a federal grant program for “nonpoint source” pollution. If the proposed facilities include green infrastructure, such as bioswales to filter runoff before it enters the river, green infrastructure improvements can be funded through this program.
- **Florida Recreation Development Assistance Program (FRDAP):** A competitive state-funded grant for local governments to develop land for public outdoor recreation. This program can be used for the proposed boardwalk and any associated bump outs for passive recreation. Applications typically open in the fall (October) for the following fiscal year. Emphasis on alignment with SCORP will be key to receiving funding.
- **State Wildlife Grants (SWG) Program:** Managed by the FWC, this program focuses on implementing *Florida’s State Wildlife Action Plan* or SWAP. If the project is determined to need a significant restoration component of the hydric hammocks or wetlands, funds could be acquired through this program.

- **Florida Boating Improvement Program (FBIP):** A Florida FWC grant program which funds the development of public boating access and related facilities. If the proposed bridge or boardwalk includes a kayak/canoe launch, a small dock for viewing, or boating-related educational signage, it could qualify for funding boarding docks, piers, or upland amenities.
- **Wildlife Foundation of Florida Grants:** The foundation is a non-profit partner which works with the FWC to distribute funds for educational and environmental projects including wildlife viewing platforms, interpretive kiosks, and habitat restoration.
- **Florida Inland Navigation District (FIND):** A key stakeholder during the review of the feasibility of the proposed bicycle/pedestrian bridge connection, FIND provides grants for projects which increase public access to waterways. This grant opportunity could assist in funding the proposed bridge and boardwalk.
- **St. Lucie County Half-Cent Sales Tax:** The county can utilize this bucket as a local match for larger state and federal grants. To qualify, the project must be listed on the Capital Improvement Plan (CIP). Most grants require a 25% to 50% local match, utilizing this sales tax would assist in receiving larger grants.

Key Insights & Application to this Study

This research and analysis produced significant observations that have a direct impact on the recommendations of this feasibility study. First, early and continual stakeholder engagement is essential, the input gathered via stakeholders, residents and county staff has proven invaluable in shaping the preferred alignment and ensuring community buy-in, mirroring the success seen in other projects that embraced public involvement from the start. The project will require coordination with various federal, state, regional, and local agencies, continued early coordination will be key in ensuring agency and community buy-in.

Comparative case studies have underscored the importance of minimizing environmental impacts as a core criterion for feasibility. Ensuring the required steps, process, and practices are planned for will be vital to reduce adverse impacts to the preserves, St. Lucie River, community, and wildlife. Therefore, additional in-depth analysis of environmental impact will need to be taken as the next step.

Another lesson learned is the value of designing to standards (e.g. aiming for a 12-foot trail width, providing safe bridge railings, using durable materials) which emerged from both the guidelines review and the South Street example; our feasibility plan accordingly includes typical sections that meet these standards, thereby easing the transition to future phases of design.

Finally, and importantly, this study recognizes that aligning with broader plans and visions greatly enhances a project's viability.

Next Steps

The County has coordinated meetings with USACE regarding the wetland restoration/rehydration project, which includes potential removal of a berm and reconstruction of the Oxbow Eco-Center boardwalk. This project could provide additional opportunities for inspection, soil testing, habitat impacts, and wildlife monitoring in the study area. This project could also provide opportunities for coordinating improvements to the area for public access.

Currently, bicycles are not permitted on existing Oxbow trails due to erosion concerns, pedestrian conflicts, and the sensitivity of natural areas. However, no formal County ordinance prohibits bicycle use; rather, this is an internal land management decision. To address connectivity needs while minimizing impacts. The project team discussed a SUP along the south side of Canal 106 to provide bicycle and pedestrian access to the proposed bridge. This path would avoid the Oxbow Eco-Center's sensitive habitats and trails, providing a safe and comfortable pathway to the bridge and future trail. The north side of the canal is currently used for overflow parking for the Oxbow Eco-Center. While future development may expand parking availability for the Oxbow Eco-Center, the south side of the canal was identified as a potential location for an SUP connecting to the proposed bridge. Both ERD and the Oxbow Eco-Center expressed support for this approach.

Additional discussions included the possibility of a future land swap or acquisition of Oxbow Center property currently owned by SFWMD. Although the lands CERP status may conflict with a potential land swap, discussions with SFWMD should begin to address any potential conflicts with both agency goals and objectives. It is important to note this project does not impede future CERP use of the land but identifies recreational uses and access to the land.

Furthermore, a study to evaluate existing vessel traffic between Midway Road and Prima Vista Boulevard would be required to understand existing boat traffic, boat heights, and requirements to satisfy FIND and USCG goals. This information was not available during the project's team research and information gathering but will be critical to future design of the bridge.

Finally, the next phase of this study should include a more detailed environmental assessment, including identification of the exact location of the bridge and boardwalk location, in addition to identification of impacts as a result of the bridge structure and proposed boardwalk.

7. Conclusion

The methodology used in this project ensured that the study is comprehensive and collaborative, consistent with the project's scope of services. By combining technical analysis with stakeholder engagement at each step, the study develops a well-vetted preferred solution ready for advancement toward design and funding. The proposed recommendations will provide connectivity to the planned 85-miles of greenways and trails identified by St. Lucie County, including the North Fork Greenway Trail. In addition to providing access to two unique preserves in St. Lucie County, the proposed recommendations can provide social, cultural, recreational, and mobility benefits to the community.

The study included one-on-one meetings with stakeholders to understand each agency's role, responsibilities, planning projects and considerations for the proposed project. Each meeting provided valuable insight into understanding the permit process, requirements, and needs to move forward with the proposed concept. A review of existing conditions provided an overview of the North Fork St. Lucie Aquatic Preserve and its importance to Everglades Restoration, the community, water quality, and aquatic life. It also provided an understanding of the existing conditions as it relates socially, recreationally, environmentally, and future considerations. The review of alternatives provided a cursory review of three alternatives which lead to the development of a preferred alternative, Alternative 1, located south of the broken oxbow on lands owned by SFWMD and managed by St. Lucie County ERD. This alternative was recommended due to several factors including flaws identified with the other alternatives. Furthermore, a summary of potential impacts as it relates to social, natural, physical and cultural features was examined.

Recommendations include moving forward with Alternative 1, SFWMD/Oxbow Eco-Center for the location of the bridge, including a 12-foot SUP connecting the bridge and St. James Drive to provide access to pedestrian, bicycles, and people with disabilities. Additional recommendations included constructing a +/-1,500-foot boardwalk connecting the bridge to Citrus Hammock Preserve. The proposed SUP, bridge, and boardwalk is estimated between \$5.3 to \$8 million dollars for construction (in 2026 dollars). Additional research related to the North Fork St. Lucie River vessel traffic and impacts as a result of the proposed bridge will be required. The County will also need to determine a policy and how it will treat and regulate electronic mobility devices along with the proposed features. Lastly, St. Lucie County and the St. Lucie TPO should also consider a traffic study to identify locations for midblock crossings on St. James Drive and Citrus Avenue to connect to the proposed trail once the location has been determined, in addition to a study to identify a feasible alignment to connect the proposed alignment to the ECG/SUN Trail Network.

Next steps include environmental assessment and surveys, coordination with agency partners and moving forward with design for the proposed recommendations.

Appendices

Appendix A.

Literature Review

Literature Review of Relevant Plans and Case Studies

Relevant Planning Documents and Trail Design Guidelines (Florida)

Study/Document Title	Year	Source/ Download Link	Geographic Scope	Summary of Key Findings	Relevance to Oxbow Connector Project
Southeast Florida Regional Greenways & Trails Plan	2014	PDF – Palm Beach TPA (Palm Beach TPA)	Palm Beach, Broward, Miami-Dade	Regional network blueprint with priority corridors emphasizing ecological linkages and encouraging routing along low-impact corridors (canals, utility easements) to minimize environmental disturbance.	Shows multi-jurisdictional coordination and landscape-sensitive routing—useful for protecting riverine habitat along the Oxbow connection.
Ludlam Trail Corridor Study – Phase I	2003	PDF – MD TPO / FDOT (Miami-Dade TPO)	Miami-Dade County, FL	Detailed environmental screenings, two concept alternatives (rail-with- and rail-to-trail), typical cross-sections, ROW and constraints maps, scoring methodology, and public workshops with bilingual outreach. Includes natural resource evaluation and soil mapping.	Excellent model for trail in constrained corridor—shows how to formulate a matrix, score alternatives, map wetlands/contamination, define ROW, and engage stakeholders—strong parallels to Oxbow Feasibility study requirements.
Ludlam Trail – Natural Resources Evaluation (NRE)	2019	PDF – MD Parks / FDOT (Miami-Dade County)	Miami-Dade County, FL	Comprehensive assessment of soils, wetlands, canals, and protected species. Includes contour, soils, and hydrology maps that identify constraints for trail design.	Provides environmental screening templates and mapping techniques applicable to the Oxbow context, especially around waterways and floodplains.
Miami-Dade Trail Design Guidelines & Case Study	2010	PDF – MD Trail Guidelines (Miami-Dade County)	Miami-Dade County, FL	Contains design typologies, cross-section figures, cost data, amenity descriptions, signage/bike-ped treatment examples, and implementation steps for regional trails.	Useful for typology definitions (widths, buffers, materials, amenities) that can inform the connector’s design.
Ludlam Trail PD&E Fact Sheet	2021	PDF – MD Parks PD&E Factsheet (Miami-Dade County)	Miami-Dade County, FL	Summarizes PD&E study status, purpose/need, public involvement processes, environmental and social assessment, and route planning through the former rail corridor.	Demonstrates how to integrate environmental planning and public outreach in feasibility studies, offering a good reference for structuring Oxbow’s stakeholder integration.
Ludlam Trail Overpass Feasibility – West Flagler	2021	PDF – MD TPO Proposal (Miami-Dade TPO)	Miami-Dade County, FL	Focused study on an overpass structure: environmental impacts, structure type, costs, and corridor constraints.	While narrower in scope, it shows a site-specific bridge feasibility approach applicable to Oxbow’s River crossing.

Literature Review of Relevant Plans and Case Studies

Hobe Sound North SUN Trail Feasibility Study	2023 ~	PDF – Martin MPO Florida Trail Association	Martin County, FL	Includes mapping of wetlands, flood zones, and wildlife habitats along the corridor. Presents two alternatives connecting Seabranh Preserve State Park to the existing trail. Outlines land acquisition strategies and ROW within rural, ecological lands. Features detailed constraint mapping: wetlands, flood zones, historical sites, and species habitats. Assesses existing ROW and field conditions. Multiple trail alignment alternatives, including boardwalks over wetlands. Strong public workshop input.	Demonstrates environmental constraint mapping, ROW planning, and alignment alternatives within a preserve-connected trail corridor—closely comparable to Oxbow needs.
US 90 Multi-Use Trail Feasibility Study	2022 ~	PDF – Capital Region TPA CRTPA	Leon & Jefferson Counties, FL	Delivers full corridor analysis, including environmental constraints mapping and concept alternatives. Incorporates ecological site visits. Breaks the corridor into segments, identifies priority crossings, and ROW acquisition opportunities.	Offers comprehensive environmental screenings paired with ROW analysis and field engagement—mirroring Oxbow’s need for wetland-sensitive trail alignment and community input.
Core-2-Coast Trail Alignment Feasibility Study	2024	PDF – North Florida TPO	North Florida region	Performs desktop and field evaluation of corridor, including wetlands impact assessment and ROW lease considerations (FAA easement). Presents concept plan showing typical cross-sections and buffer zones. Includes community feedback.	Useful for its cross-jurisdictional environmental review (wetlands) and corridor lease strategy, along with design standards in constrained environments—applicable where the trail interacts with preserves/critical habitat.
Clay–Duval Multi-Use Trail Feasibility Study	2021 ~	PDF – North Florida TPO	Clay & Duval Counties, FL	Includes environmental screening (mapped wetlands/wildlife habitats), ROW review of state and local parcels, segment-based alternatives, and prioritization ranking using feasibility and impact metrics. Community feedback recorded.	Parallels Oxbow Corridor’s need for environmental constraints, segment-level alignment alternatives, and structured scoring methodology—within conserved or semi-rural lands.
South Street Multi-Use Trail Feasibility Study	2022	PDF – R2CTPO River to Sea TPO	New Smyrna Beach, Volusia County		

Appendix B.

Stakeholder Meetings



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Oxbow Eco-Center Pedestrian/Bicycle Connector Link Feasibility Study



VIRTUAL STAKEHOLDER MEETING TUESDAY, OCTOBER 7, 2025 10:00 AM – 11:00 AM

PROJECT PURPOSE

The St. Lucie TPO wants to conduct a feasibility study for a **pedestrian connection in St. Lucie County from the Oxbow Eco-Center over the St. Lucie River east to Citrus Hammock Preserve**. The connection will provide access and enhance connectivity to the future greenways of the North Fork St. Lucie River Trail and the East Coast Greenway/SUN Trail.

STAKEHOLDER COORDINATION

Please join the St. Lucie TPO and other key stakeholders to discuss progress for the Oxbow Eco-Center Pedestrian/Bicycle Connector Link Feasibility Study. The Study team will review existing conditions, discuss potential connector link alignment methodologies, and review at least one of three potential connector link alignments. The Study team values your feedback in this important feasibility analysis.



Please contact Stephanie.Torres@stlucieco.gov for any additional details.

Oxbow Connector Trail Feasibility Study

Stakeholder Meeting Notes

Thursday, October 16, 2025

1. Introductions

1. Stephanie Torres, St. Lucie TPO Project Manager
2. Christina Fermin, AICP, Marlin Project Manager
3. Eric Katz, AICP, PMP, Marlin Senior Planner
4. Jennifer McGee, St. Lucie County Environmental Resources Department
5. Amy Griffin, St. Lucie Environmental Resources Director
6. Brian P., St. Lucie County Environmental Resources
7. Lauren J., St. Lucie County Environmental Resources
8. Everette T., City of Port St. Lucie
9. Emily Seitter, City of Port St. Lucie
10. John Baehre, U.S. Army Corp of Engineers
11. Dan Cotter, South Florida Water Management District

2. Project Overview

- a. Christina provided an overview of the scope, purpose and need, and project schedule.

3. Role and Expectations

- a. Christina asked stakeholders to review the information shared and to provide input, feedback, or information related to the study area or future projects.

4. Existing Conditions

- a. Christina provided an overview of existing conditions, including demographics, property ownerships in the study area, land cover, flood zones, utilities, and existing trails.

5. Proposed Alternatives

- a. Christina provided an overview of Task 4 – Route Development and Report
- b. Christina then introduced three (3) alternatives the Project Team identified and discussed the pros and cons of each.
- c. Alternative 3 was eliminated due to various factors, including the future project to rehydrate the wetlands north of the broken oxbow, in addition to other complexities with the alternative.
- d. Stakeholders were asked to cast their preferred alternative in a Slido Poll. Alternative 1 received 9/10 votes with Alternative 2 receiving 1/10 votes.



slido

6. Next Steps

- a. Christina concluded the meeting with an overview of next steps and upcoming meetings and events.
- b. Stakeholders were encouraged to reach out to the Project Team to schedule one-on-one stakeholders meeting to discuss the project further or share additional information.



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7. Questions / Comments

a. Emily with PSL provided comments:

- i. Are there overhead transmission lines within the FPL corridor?**
 - 1. Yes, Alternative 2 is proposed in a transmission corridor.**
- ii. The City of PSL had had a difficult time in getting FPL to provide use agreement for their transmission corridor.**
- iii. FPL is difficult to work with; you will need to go to them with 30% plans to review and get feedback on.**
- iv. There would be significant hurdles to get access with FPL.**

b. Dan (SFWMD) believed Alternative 2, FPL corridor, would be the best alternative because it is the least impactful for the environment and surrounding area.

- i. SFWMD would need additional one-on-one meetings to discuss Alternative 1.**
- ii. Dan recommended including other sections/departments with SFWMD including their real estate and regulatory divisions.**
- iii. Dan would like a copy of the presentation to share internally with his team.**
- iv. USACE is currently working on various projects within the county, including the study area. Advised reaching out to Michael Bush with USACE.**
- v. SFWMD cannot permit itself, therefore, further coordination with USACE or Florida DEP would be required to move forward with Alternative 1.**

c. John with USACE provided additional comments:

- i. US Coast Guard may need to get involved.**
- ii. If a Boardwalk is proposed, the Project Team would need to involve Florida DEP for possible 404 permitting and potentially a 408 review.**

- iii. If SFWMD is not the federal sponsor, then the 408 review would fall under USACE.
- iv. USACE is focused on dredging and filling.
- v. Will the bridge require footers?
 - 1. At this time, the Project Team is unsure, we would need to explore the alternative further.
- vi. Is the bridge expected to span the river like the pictured image on the presentation (slide 16)?
 - 1. Yes, the bridge is expected to span the river, but the Project Team needs to gather more information on the height of bridge and how this will impact the design.



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Oxbow Eco-Center Pedestrian/Bicycle Connector Link Feasibility Study

Stakeholder Meeting - Thursday, October 16th, 2025





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Agenda

01

Welcome & Introductions

02

Scope Review

03

Team Roles & Expectations

04

Existing Conditions

05

Route Alternatives

06

Questions/Comments





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Scope

Task 1 - Project Management

**Task 2 - Existing Conditions &
Data Collection**

**Task 3 - Public & Stakeholder
Involvement**

**Task 4 - Route Development &
Report**





Purpose & Need

- Identify location of pedestrian bridge for future route alignment connecting the Oxbow Center with Citrus Hammock Preserve.
- Preferred location should have the least impacts to natural resources, wetlands, and the community.
- Pedestrian bridge link to enhance access and connectivity to future greenways and trails of the North Fork St. Lucie River Trail and East Coast Greenway/SUN Trail.





Schedule

Oxbow Connector Feasibility Study

	Jul 2025	Aug 2025	Sep 2025	Oct 2025	Nov 2025	Dec 2025	Apr 2026	May 2026	June 2026
Task 1 - Project Management	●		●	●		●	●		
Task 2 - Existing Conditions & Data Collection									
Task 3 - Public & Stakeholder Involvement			●	● ●	●		●	●	●
Task 4 - Route Development & Report						●		●	

Key

- = On-going Production ● = Stakeholder meetings ● = Earth Day 2026
● = PM Meetings ● = Draft/Final Report



Roles & Responsibilities

Local Stakeholders



State/Regional Stakeholders



Federal/National Stakeholders



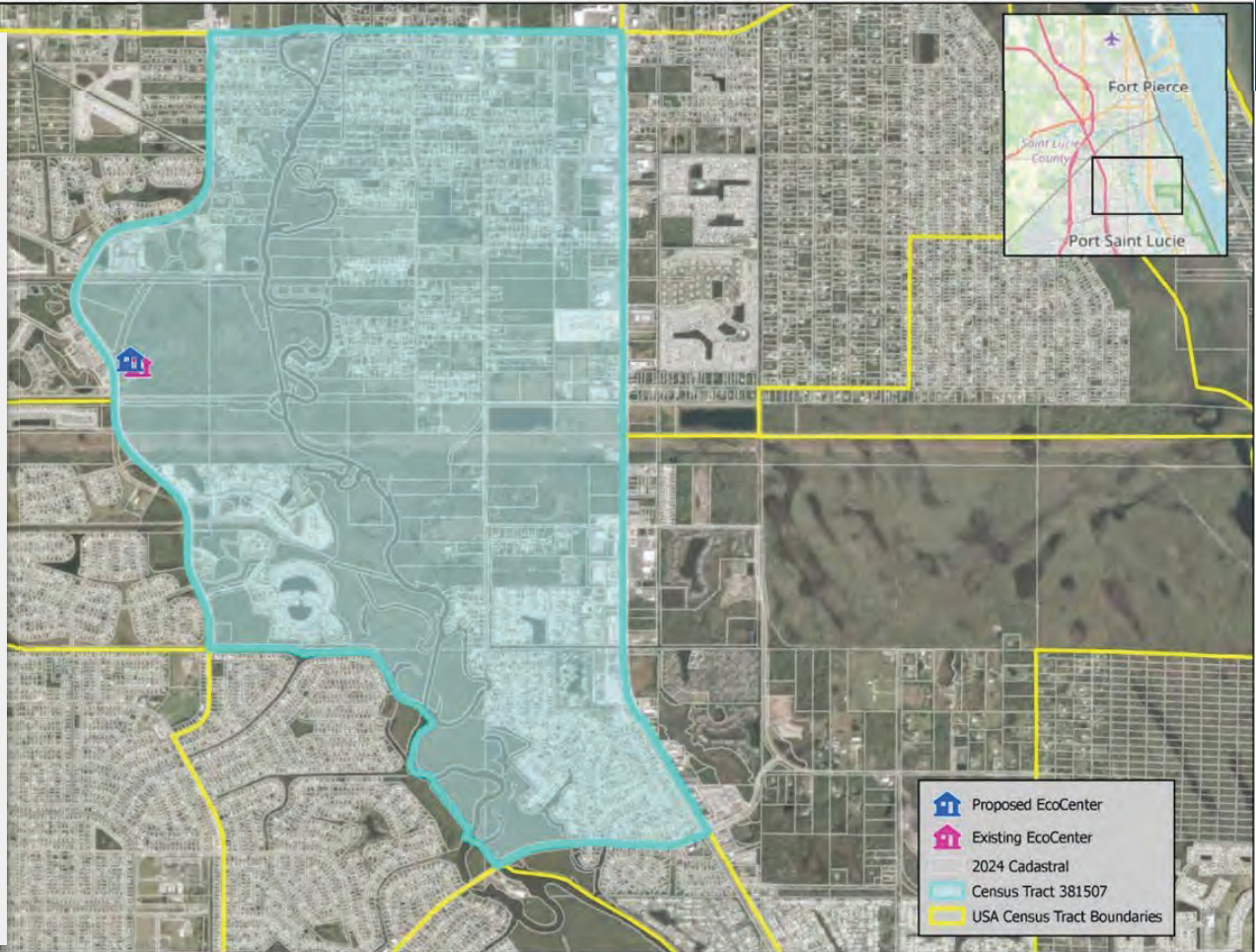


Existing Conditions



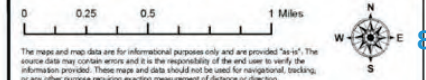
Census Tract 12111381507

- **Population:** ~6,406 residents, over 4.9 sq mi (~1,314 people/sq mi)
- **Median age:** 57.6 years
- **Median household income:** \$71,120
- **Per-capita income:** \$46,243
- **Poverty rate:** 4%
- **Education:** 21.3% hold a bachelor's degree or higher
- **Transportation:** 25.1 minute travel time to work

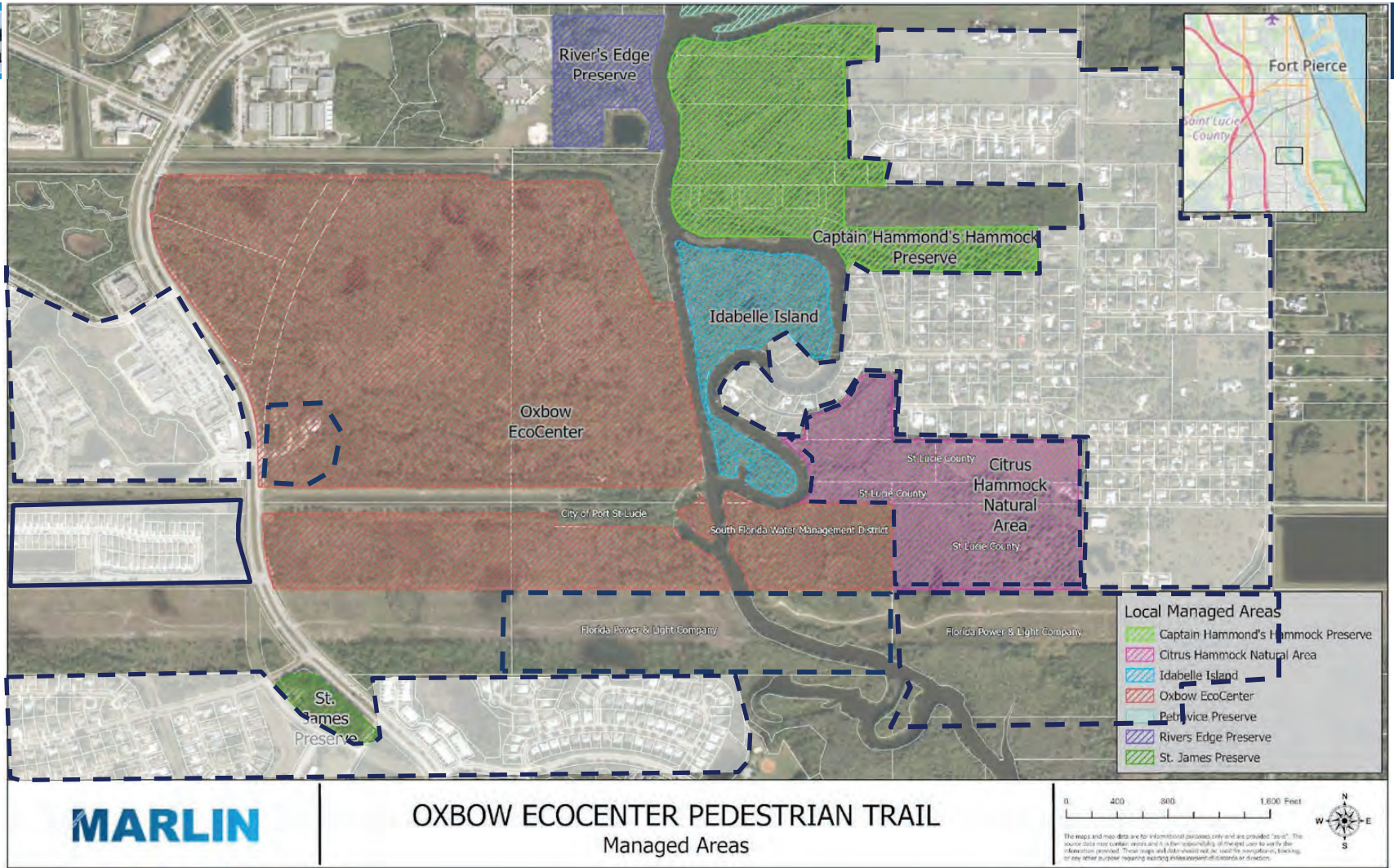


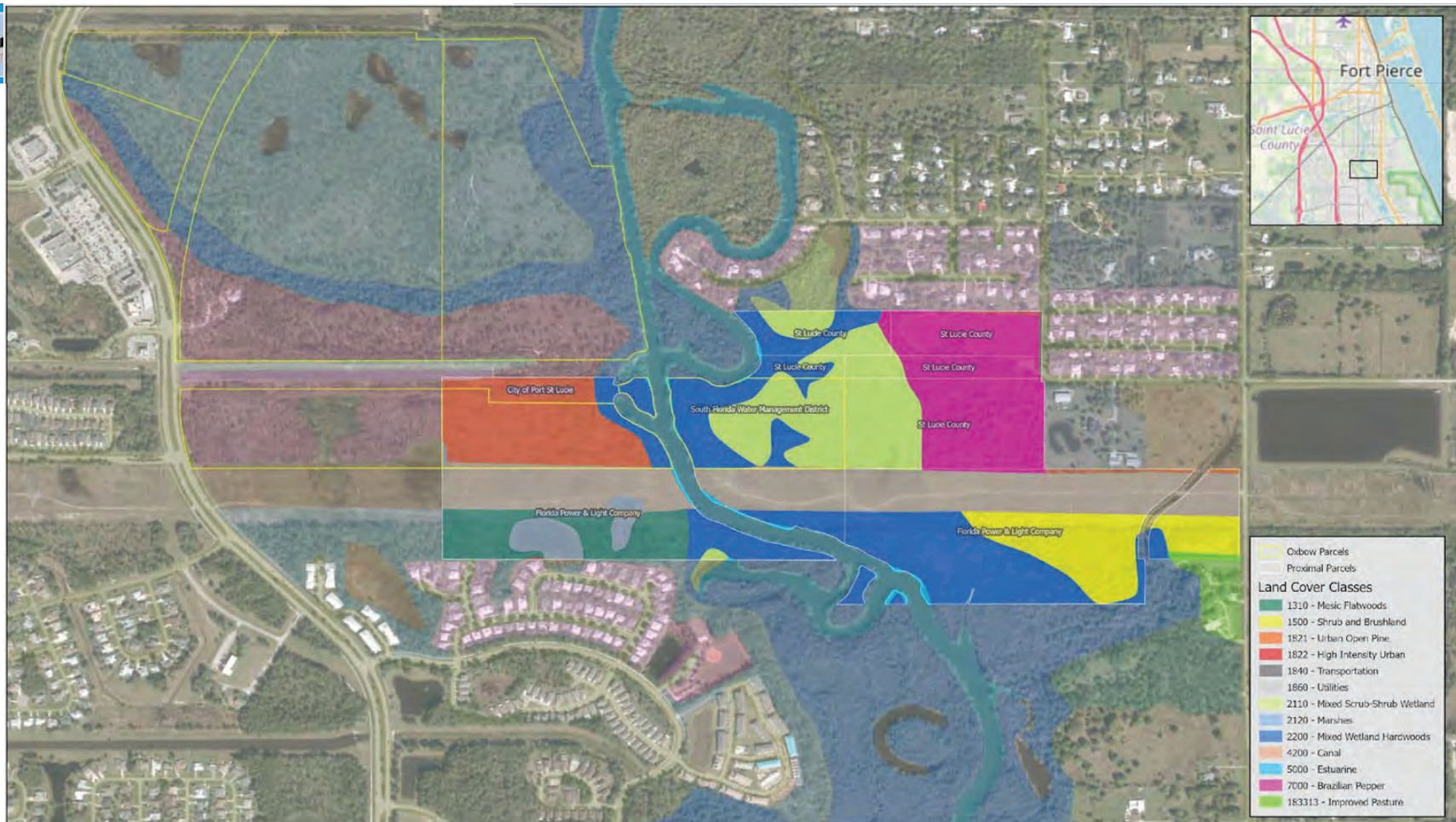
MARLIN

OXBOW ECOCENTER PEDESTRIAN TRAIL
Census Tracts



Managed Areas





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OXBOW ECOCENTER PEDESTRIAN TRAIL Land Cover

0 400 800 1,600 Feet

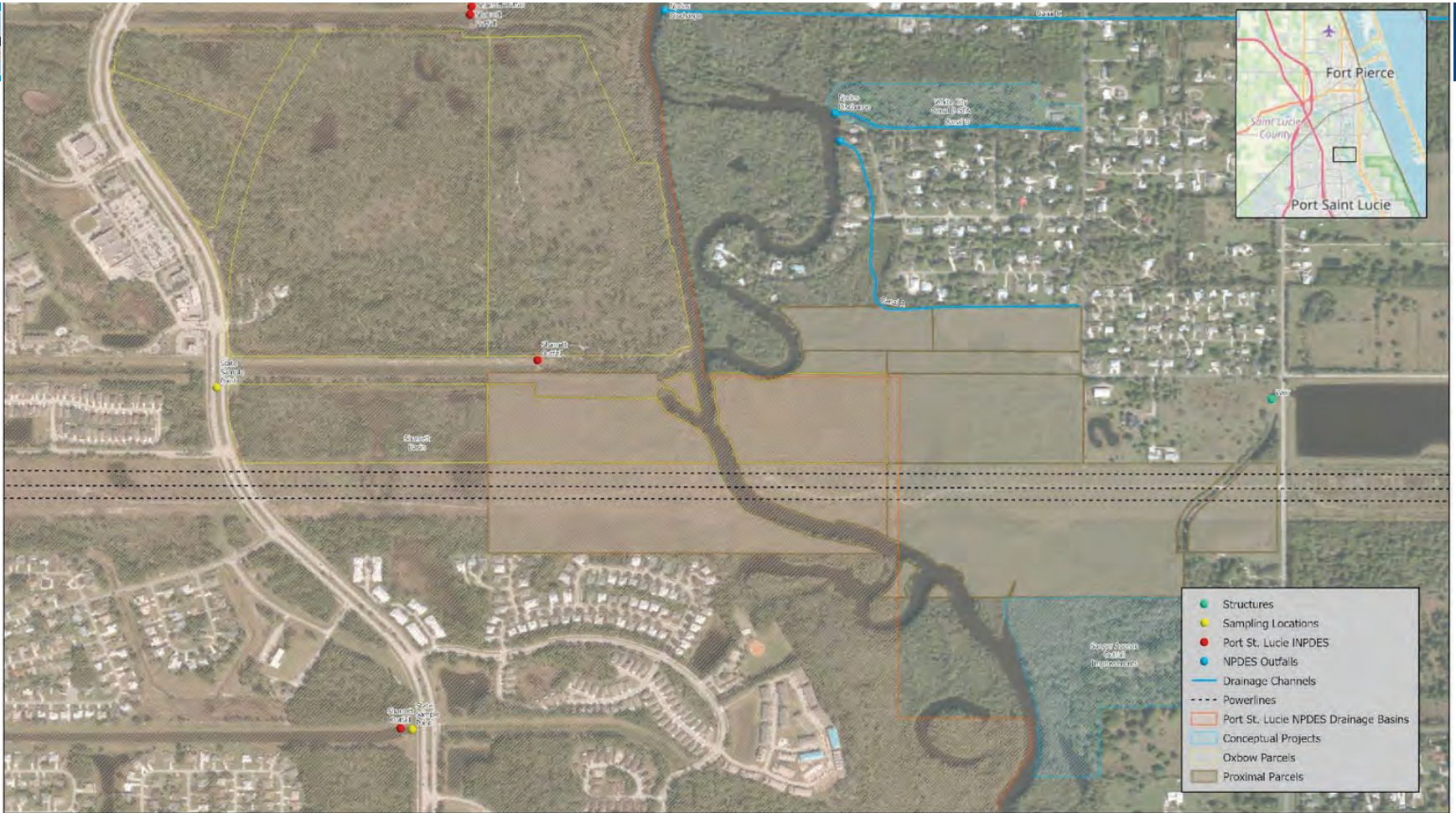
The maps and map data are for informational purposes only and are provided "as is". The user assumes all liability for the use of the information provided. These maps and data should not be used for navigational, tracking, or any other purpose requiring accurate measurement or direction or distance.





OXBOW ECOCENTER PEDESTRIAN TRAIL

The maps and map data are for informational purposes only and are provided "as is". The source data may contain errors and it is the responsibility of the end user to verify the information provided. These maps and data should not be used for navigation, tracking, or any other purpose requiring exacting measurement of location or direction.



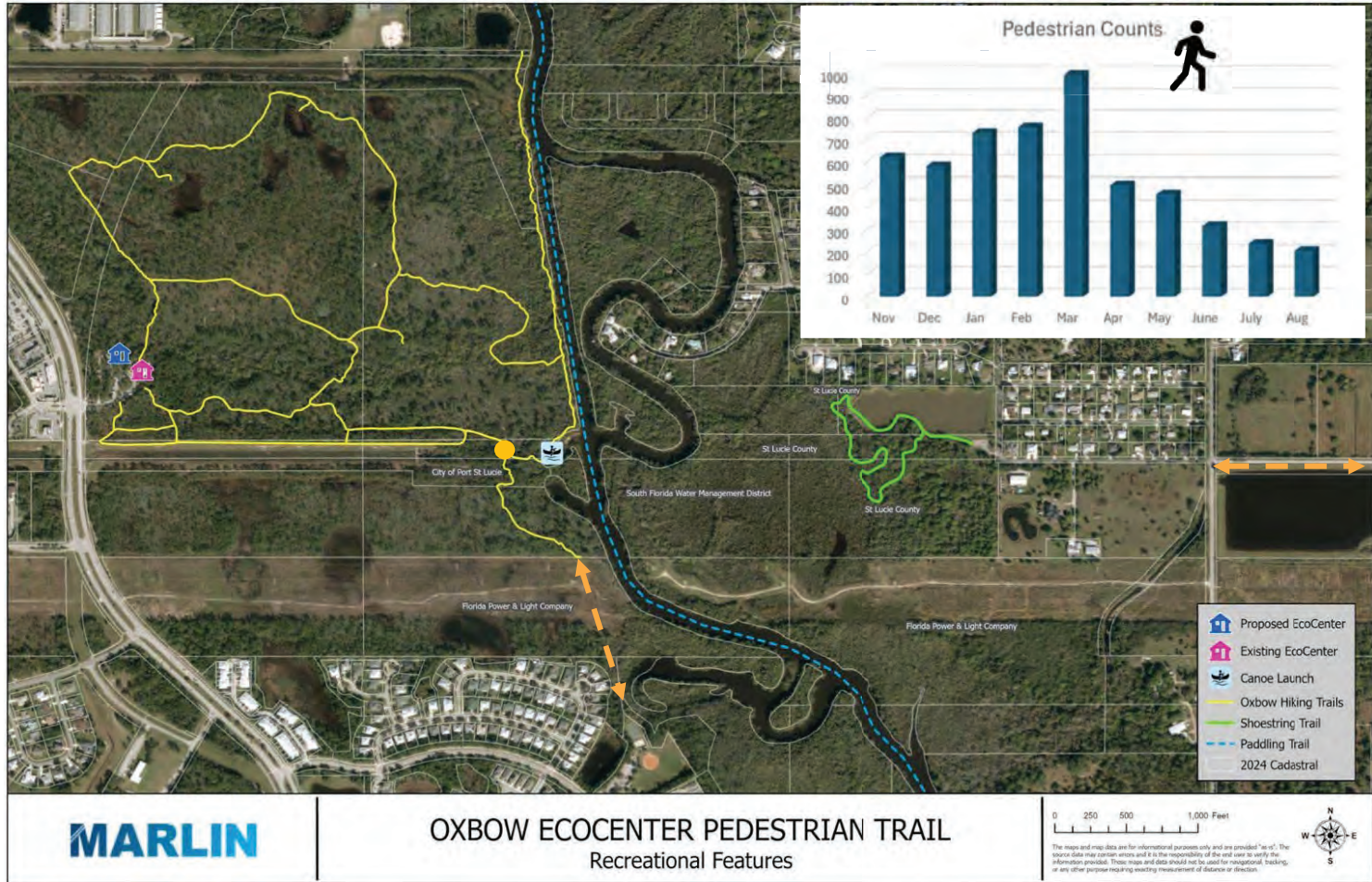
MARLIN

OXBOW ECOCENTER PEDESTRIAN TRAIL

Utilities

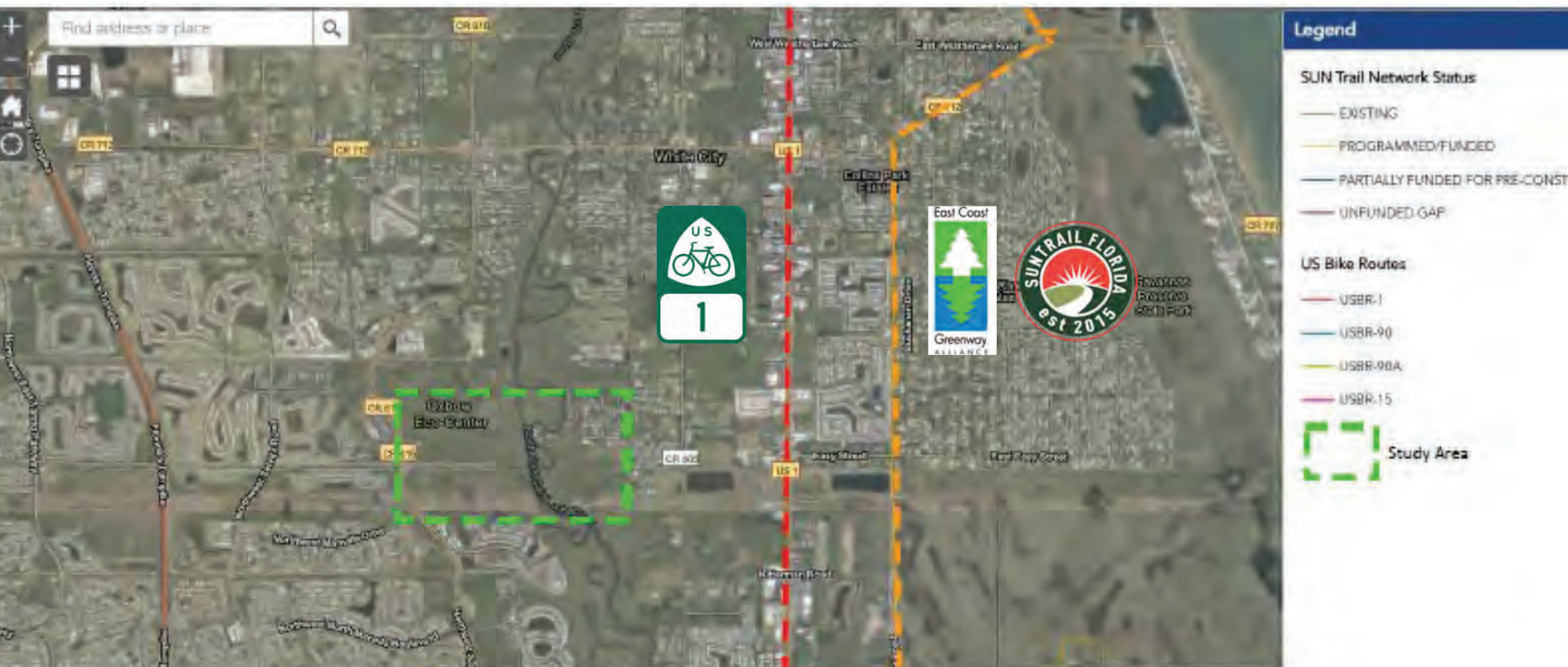
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Existing Recreational Trails





Transportation Planning Organization





Summary of Existing Conditions

- Oxbow Center is operated and maintained by St. Lucie County via a 99-year lease with the SFWMD, who is the property owner.
- Citrus Hammock Preserve is owned and operated by St. Lucie County.
- USACE has planned project to re-hydrate river banks north of the broken oxbow. This may provide opportunity to coordinate planning efforts for public access.
- County has easement agreement with FPL for pedestrian access to/from Oxbow Center and River Place community.
- SFWMD does not have any planned projects in the area.
- SFWMD provided engineering standard for pedestrian bridge, which is currently being revised.
- FWC is in charge of signage within the waterway, may need coordination with FWC.
- US Coast Guard in charge of navigable waters, may need to coordination for bridge.



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Proposed Route Alternatives





Task 4: Route Development & Report

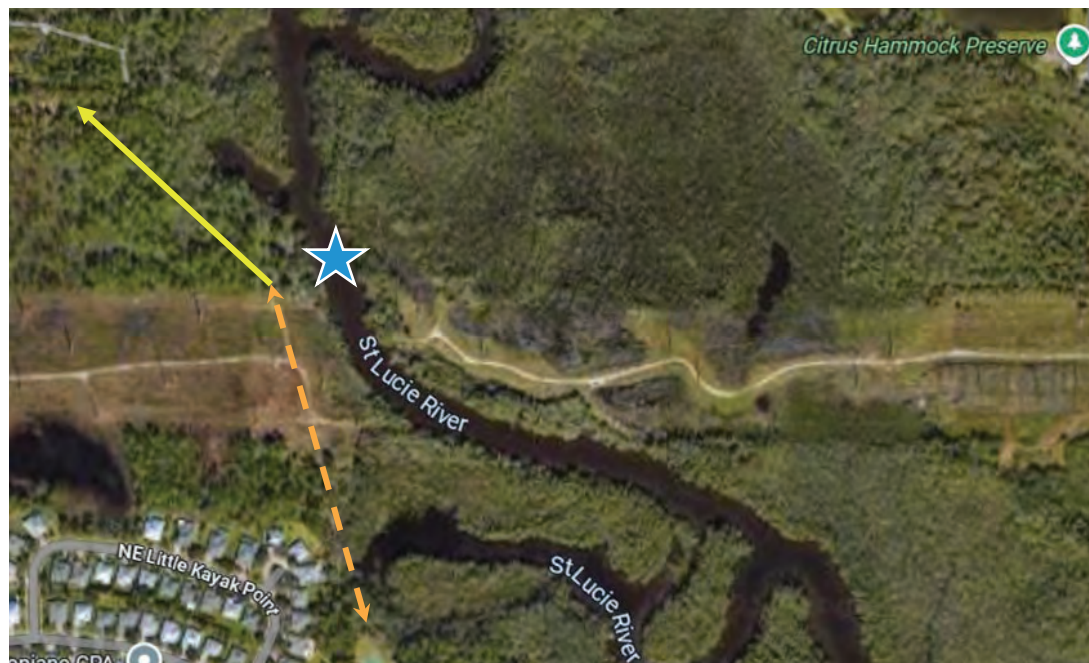
- Location analysis
- Development of alternatives
- Select preferred alternative
- Develop typical sections
- Map preferred route with alternative alignment
- Environmental review and fatal flaws
- Permit requirements of preferred alignment
- Cost estimate of preferred alignment
- Draft report
- Final report





Alternative 1 – SFWMD

- SFWMD Owns Property / County Operates & Maintains Property



Proposed Connector Link



Existing Racoon Trail



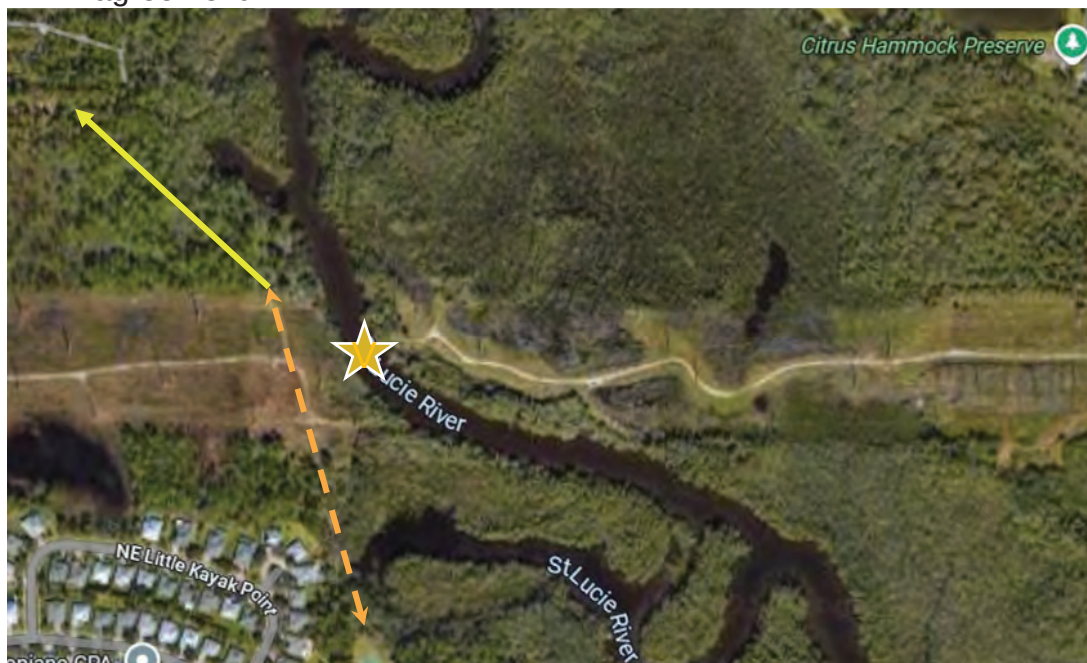
Existing Pedestrian Easement/Pathway

Factor	Pros	Cons
Ownership & Access	Public ownership; county has 99-year lease.	Still SFWMD land; subject to conservation covenants and regulatory limits.
User Experience	Scenic, immersive natural experience; ties into Eco-Center programs.	Bicycles currently not allowed on Oxbow trails; possible policy conflict.
Environmental Impact	Opportunity to highlight wetlands and habitats through education.	Sensitive habitats (wetlands, snail kite, wood stork); may have heavy permitting needs.
Construction Feasibility	Synergy with planned Eco-Center improvements (boardwalk, new building).	May require boardwalk to/from crossing; costly; limited access for equipment.
Connectivity	Direct link to Eco-Center facilities and Citrus Hammock Preserve.	Less direct regional commuter connection; mainly recreational focus.
Maintenance	Eco-Center staff presence may support stewardship.	Boardwalks vulnerable to flooding, storm damage, and long-term costs.



Alternative 2 – FPL Alignment

- FPL is the owner, St. Lucie County would have to enter into a lease agreement.



Factor	Pros	Cons
Ownership & Access	Uses existing FPL ROW; corridor already cleared with access roads.	Requires negotiation with private utility; FPL operational needs take priority.
User Experience	Wide sightlines, open, safer feel; commuter-friendly alignment.	Less scenic; aesthetics impacted by power lines.
Environmental Impact	Corridor already disturbed; fewer wetlands/natural areas affected.	Still crosses flood zones/wetlands; access roads may include drainage ditch which could complicate design.
Construction Feasibility	At-grade options available for trail; lower cost than boardwalk.	Restrictions on structures/planting under utility lines; construction near poles.
Connectivity	Strong tie to regional network (St. James, Oleander, ECG/SUN Trail).	Trailheads may require new infrastructure; not directly integrated with Eco-Center.
Maintenance	Easier access for vehicles; FPL maintains corridor vegetation.	Heavy utility trucks may damage trail surface; closures possible for utility work.



Proposed Connector Link



Existing Racoon Trail



Existing Pedestrian Easement/Pathway

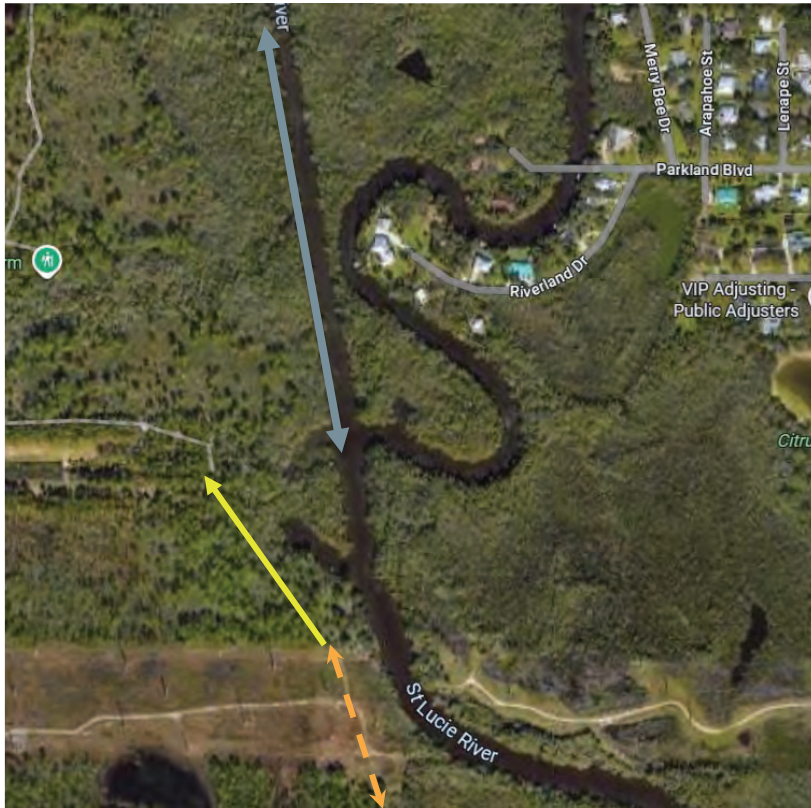


FPL ROW Guidelines

*“The following activities may be allowable on a case-by-case basis and will require an **FPL Right of Way Consent Agreement** and be conditioned on written approval from FPL prior to performing such activities or placing such items...”*

- *“**Walking or multi-use paths** provided slope and access requirements are met which do not encourage recreational use near FPL facilities.”*
- Further coordination required.





Alternative 3 – North Alignment

Eliminated due to future USACE/County project, sensitive lands on east bank, and additional complexities north of the broken oxbow.



Summary of Alignment Findings

Alternative 1 (SFWMD Preserve Route): Strongest for scenic, educational, and conservation-based user experience, but may be moderately constrained by permitting, environmental impacts, and construction complexity.

Alternative 2 (FPL Utility Corridor): More practical for construction and long-term maintenance, stronger for regional commuting connectivity, but dependent on FPL's cooperation and neighborhood acceptance.

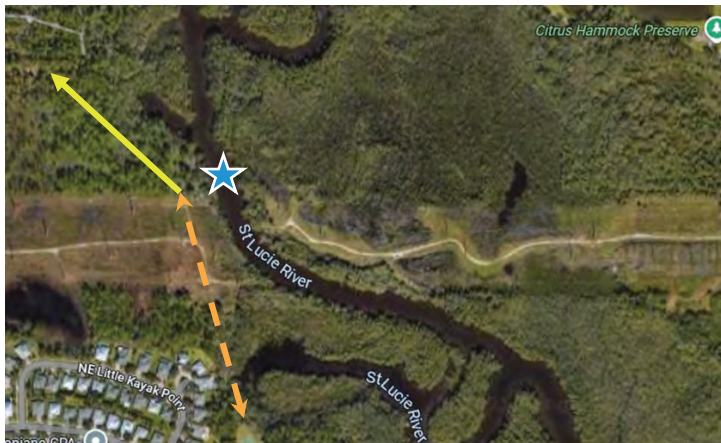
Prefer alignments that:

- (1) Use county-owned preserve land to minimize acquisition;
- (2) Limit disturbance of critical high-quality habitat;
- (3) Provide direct, high-value connections between the two preserves; and
- (4) Avoid fragmenting managed parcels or crossing private parcels unnecessarily.

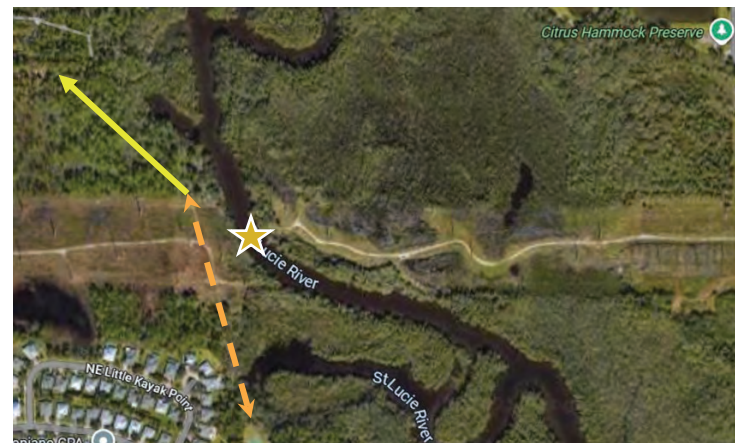


Polling Question

Which alternative should the Project Team pursue for development of the preferred alternative?



Alternative 1 – SFWMD



Alternative 2 – FPL ROW

<https://app.sli.do/event/4FzGmF6PGfQzb6ZqJHFTFQ/live/polls>



Slido.com

Participation Code

#1113476



Which alternative should the Project Team pursue for development of the preferred alternative?

Multiple Choice Poll 10 votes 10 participants

Alternative 1 - 9 votes



90%

Alternative 2 - 1 vote



10%

None / Other - 0 votes



0%

slido



Next Steps

- 1 Meet with additional stakeholders
- 2 Develop typical sections
- 3 Map preferred route with alternative route
- 4 Identify permit requirements
- 5 Develop planning level cost estimate
- 6 Draft report



Upcoming Public Events

- **April 2026:** Earth Day Oxbow Event – Public Outreach and Feedback
- **May 2026:** TPO Committee Meetings
- **June 2026:** TPO Board Meeting



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Questions / Open Discussion

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Christina Fermin, AICP

MARLIN Project Manager

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954-870-5064



Oxbow Connector Trail Feasibility Study

Agenda

Wednesday, September 24, 2025

1. Introductions
 - a. Stephanie Torres – TPO Project Manager
 - b. Christina Fermin – Marlin Project Manager
 - c. Baret Hazell – Marlin Strategic Planner
 - d. Michael Cheek – SFWMD Recreation Manager
2. Project Scope Overview
 - a. Feasibility study that will identify optimal location for a pedestrian bridge
 - b. Two locations identified, see map below
3. SFWMD Role & Responsibilities
 - a. SFWMD is the property owner of Alternative 1 location
 - b. SFWMD conducts water quality testing of the St. Lucie River
 - c. Mike is the lead for public use and access of SFWMD lands from Orlando to Miami
 - d. SFWMD hosts a Recreation Forum and includes recreational organizations, non-profits, groups, and agency leads
4. Planned Projects or Improvements
 - a. None at this time
 - b. Mike will be coordinating internally with his team to confirm
5. Pedestrian/Bicycle Bridge Over the St. Lucie River
 - a. Requirements/Guidelines
 - i. SFWMD has engineering standard for pedestrian bridge
 - ii. Mike will share the engineering standard
 - b. Process
 - i. FWC is in charge of signage within the waterway, may need to ensure proper signage is posted
 - ii. Permitting requirements is dependent on the construction and support of the bridge
 - iii. FDEP would require review and possible permit
 - c. Considerations

- i. At this time the Project Team does not believe the area under study is navigable by motorized watercraft – there is a canoe launch, north of the study location
 - ii. The St. Lucie River is considered State waters
 - 1. Need to confirm whether this area is navigable
 - 2. Coast Guard has jurisdiction over navigable waters
 - iii. If the river is navigable, would need coordination with Coast Guard
 - iv. Construction and placement of the bridge would need to ensure SFWMD has access for maintenance of property and water quality monitoring
 - v. Bridge cannot block access to water quality monitoring stations or other structures within the vicinity
- d. Wayfinding/Signage Standards
 - i. SFWMD post signage on land owned and maintained by the SFWMD and would assist with any signage that is required along ROW or land
- e. Permitting
 - i. Project would require, at minimum, a ROW permit from SFWMD
 - ii. Need to further investigate permit requirements for:
 - 1. FDEP
 - 2. FWC
 - 3. Coast Guard
- 6. Other Requirements or Considerations – None, as long as the bridge meets engineering design standard this would cover natural disasters and all requirements
 - a. Hurricane/Storm Surge
 - b. Emergency Response
- 7. Miscellaneous
 - a. Project team hosting a Stakeholder meeting on October 16, 2025 at 10 am, Mike is encouraged to include other team members who.
 - b. Discussed Stephanie presenting project at the Recreational Forum in March 2026.
- 8. ACTION ITEMS:
 - a. Project Team to share meeting notes, scope, and map of property ownership
 - b. Mike will share additional SFWMD contacts and engineering standard for pedestrian/bicycle bridge
 - c. Mike will coordinate internally for information sharing and updates



FIGURE 1: MAP OF PROPOSED ROUTE ALTERNATIVES FOR PEDESTRIAN BRIDGE

MARLIN

ST. LUCIE TRANSPORTATION PLANNING ORGANIZATION (TPO) OXBOW ECO-CENTER PEDESTRIAN/BICYCLE LINK CONNECTOR FEASIBILITY STUDY

Scope of Services

MARLIN Engineering Inc. (Consultant) will support the St. Lucie TPO Bicycle-Pedestrian/Complete Streets Planning and the St. Lucie Walk-Bike Network, through building upon previous complete streets planning efforts, and continue the ongoing planning and coordinating efforts which support the provision of bicycle, pedestrian, and greenway facilities. This project will focus on the identification of feasible alternatives for the proposed Oxbow Eco-Center Pedestrian Link Feasibility Study.

Project Description

The St. Lucie TPO wants to conduct a feasibility study for a pedestrian connection in St. Lucie County from the Oxbow Eco-Center over the St. Lucie River east to Citrus Hammock Preserve, see Figure 1. This trail segment will serve as a bicycle and pedestrian connection point from the west side of the St. Lucie River at the Oxbow Eco Center to the east side of the St. Lucie River to Citrus Hammock. The connection will provide access and enhance connectivity to the future greenways of the North Fork St. Lucie River Trail and the East Coast Greenway Trail.

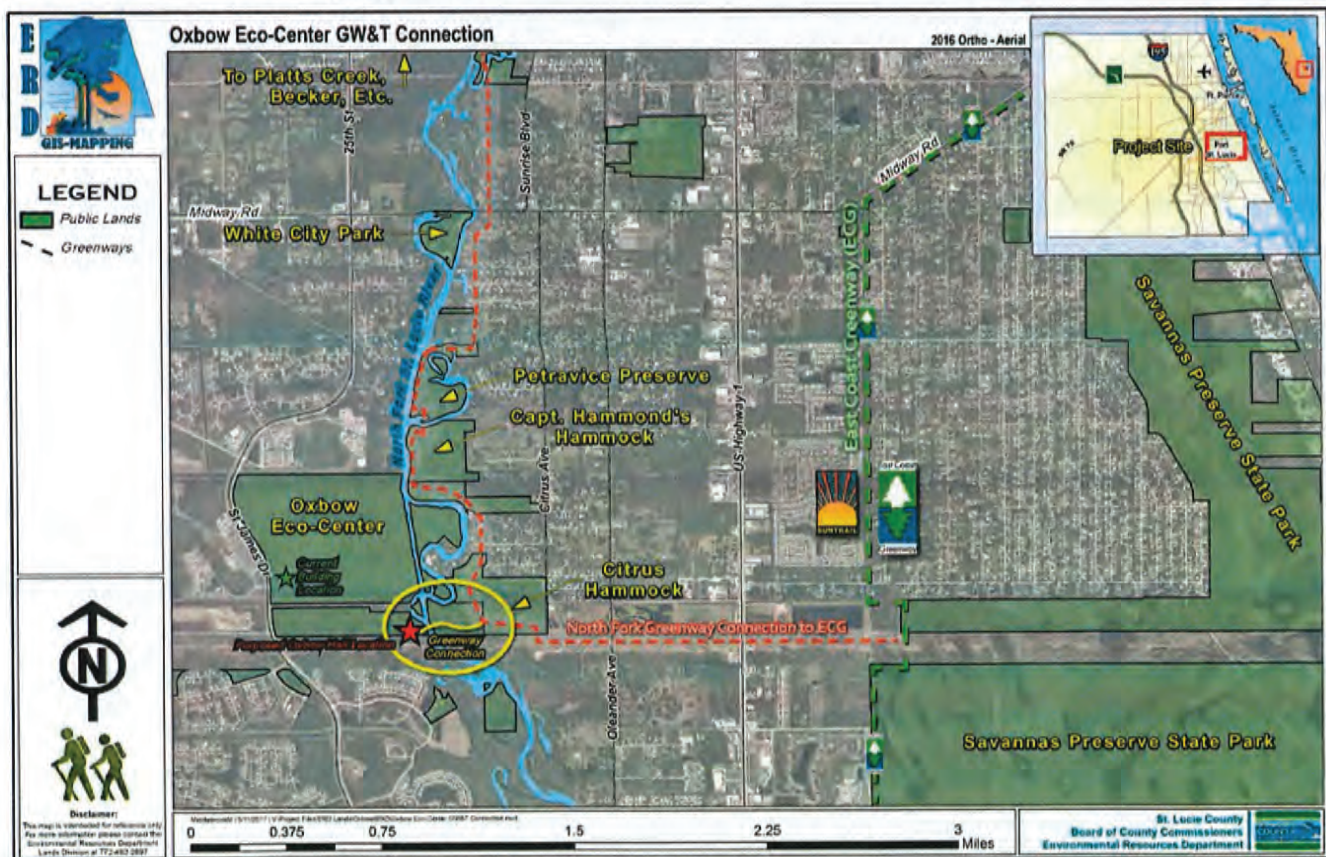


Figure 1: Project Site Map



Project Understanding

The Consultant will prepare a feasibility study that will include the identification of the optimal location for a pedestrian trail and bridge connection that minimizes impacts on natural resources, particularly wetlands, in the area. A desktop review of proposed alignments will include identification of any potential regulatory issues related to wetlands or other natural resources, and recommendations for mitigating any negative impacts identified. Deliverables will include a map of potential alignments including, up to two (2), proposed typical sections of the preferred pedestrian bridge and trail, in addition to the identification of supporting features (i.e., access, amenities, trailheads) that will facilitate connectivity at the Oxbow Eco-Center and Citrus Hammock Preserve, of which one (1) alternative route will include a proposed trail alignment outside of the existing FPL right-of-way.

The draft Feasibility Study report analyzing the results of the Oxbow Eco Center Pedestrian Connection will be reviewed in one presentation to the TPO Committees and TPO Board, stakeholders and staff. Presentation deliverables will include the presentation agenda item summary, presentation slide decks, alignment summary, and environmental impact information. Once comments have been received from TPO staff, stakeholders, and TPO Committee and Board members, the consultant will prepare the final Oxbow Eco Center Study documentation with the preferred option. The scope includes one round of comments from identified parties before finalizing the Feasibility Study.

Project Scope

Task 1.0 Project Management

The Consultant Team will meet with Staff virtually on a monthly basis for 6 months to discuss project progress and to schedule outreach and stakeholder meetings, this includes a virtual project kick-off meeting. The Consultant Team will provide monthly updates on activities performed in the preceding month. The Consultant Team will have up to four (4) virtual 1-hour meetings with County staff to discuss the project and/or gather information, resources, and guidance. This includes meeting preparation and notes for all meetings under Task 1.

Task 2: Existing Conditions & Data Collection

The Consultant will conduct a desktop review to verify existing conditions and characteristics of the beginning and end points of the connection. The TPO will provide the existing information for the socio-economic, land use, right-of-way, parcel, facilities, utilities, and environmental review. This information will be compiled into the Existing Conditions section of the Feasibility Study.

Task 3: Public & Stakeholder Involvement

The Consultant shall conduct up to eight (8) virtual 30-minute meetings with St. Lucie County Environmental Resources District, St. Lucie County, FPL and other interested stakeholders and agencies, as identified by the St. Lucie TPO, to inform, discuss, and gather comments about the study. An agenda and exhibits will be prepared by the Consultant, as-needed, as part of the meetings. Additionally, meeting notes will also be prepared by the Consultant and provided to the TPO Project Manager for review within one week after the meeting. As part of the public engagement process, the Consultant shall prepare and present an information sheet and exhibit(s)



for one (1) Public Workshop to be held at the Oxbow Eco-Center Earth Day Event. The information and comments received from the public, stakeholders, and staff shall be incorporated into the final report and considered for the preferred route. Once a Draft Feasibility Study is prepared, the Consultant will prepare and present the findings to one-round of the TPO Committees and TPO Board to gather information and feedback. This information will then be incorporated into the final report.

Task 4: Route Development and Report

Typical sections for the preferred route alignment will be developed. The data gathered in Task 2 will inform the review and development of the preferred alignment connecting the Oxbow Eco Center to east of the St. Lucie River to Citrus Hammock Preserve. The Consultant shall identify permit requirements and a planning level cost estimate for the preferred alternative. The Consultant will prepare a draft report and include one-round of comments from staff, stakeholders, TPO Committees and Board, before finalizing the document. The Feasibility Study report will include the following components:

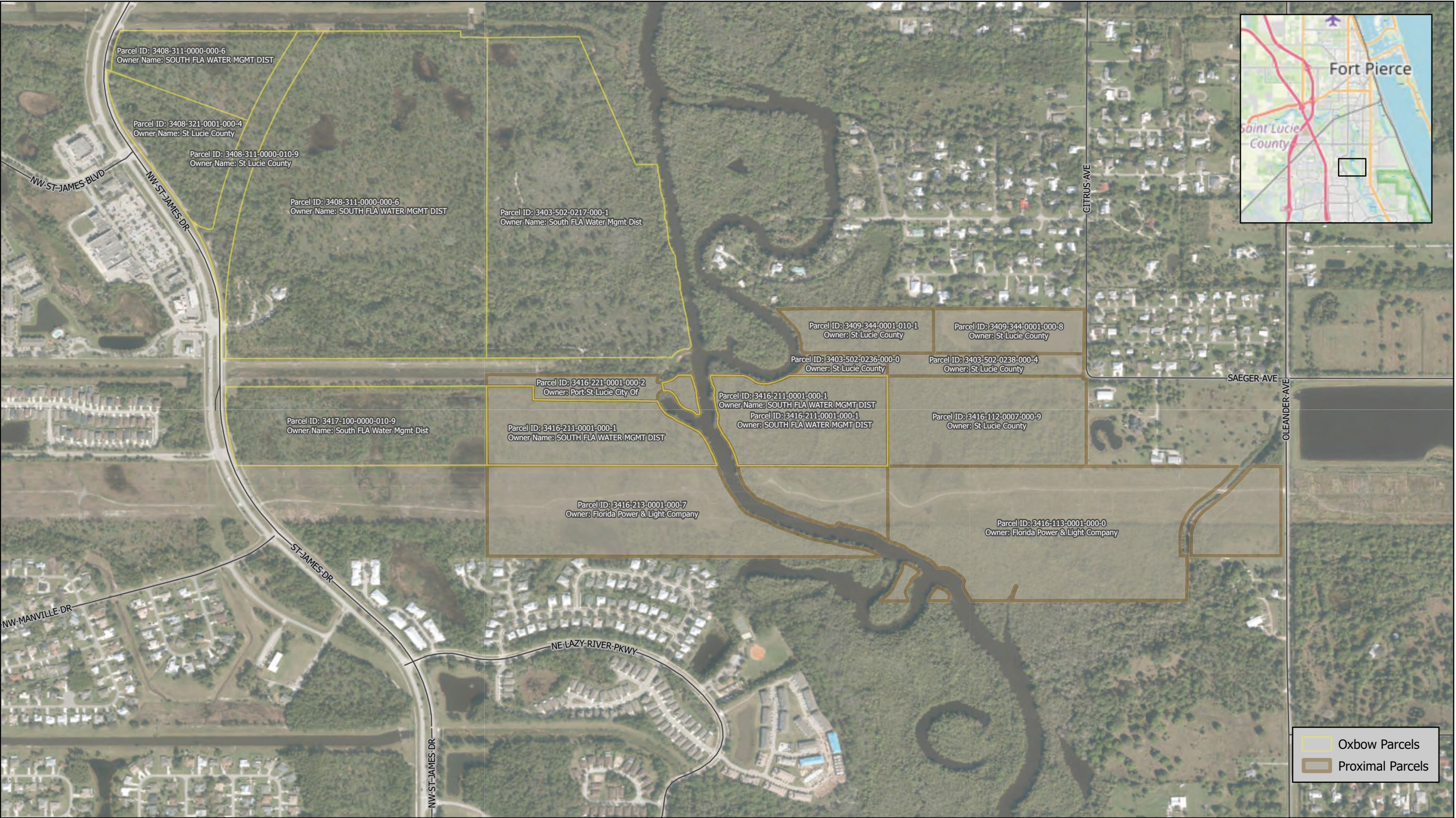
- An executive summary.
- An introduction with a general project area description, project background, purpose and need statements.
- Summary of existing conditions.
- Proposed route alignments, potential impacts, fatal flaws, and right-of-way summaries.
- Selection of the preferred route alignment will include supporting features (i.e., access, amenities, trailheads) facilitating connections at each preserve.
- Potential impacts to social, natural, physical, and cultural features; including aerial maps, and features.
- Permit Requirements and Cost Estimates.
- Conclusion.

Method of Compensation

Services for this task work order will be provided on a percent complete basis. The fee estimate for the work effort is contained in Attachment A.

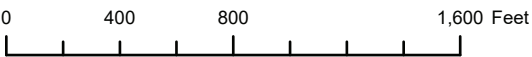
Schedule

The Consultant shall prepare the final report within six (6) months of receiving the NTP.

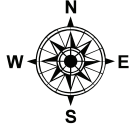


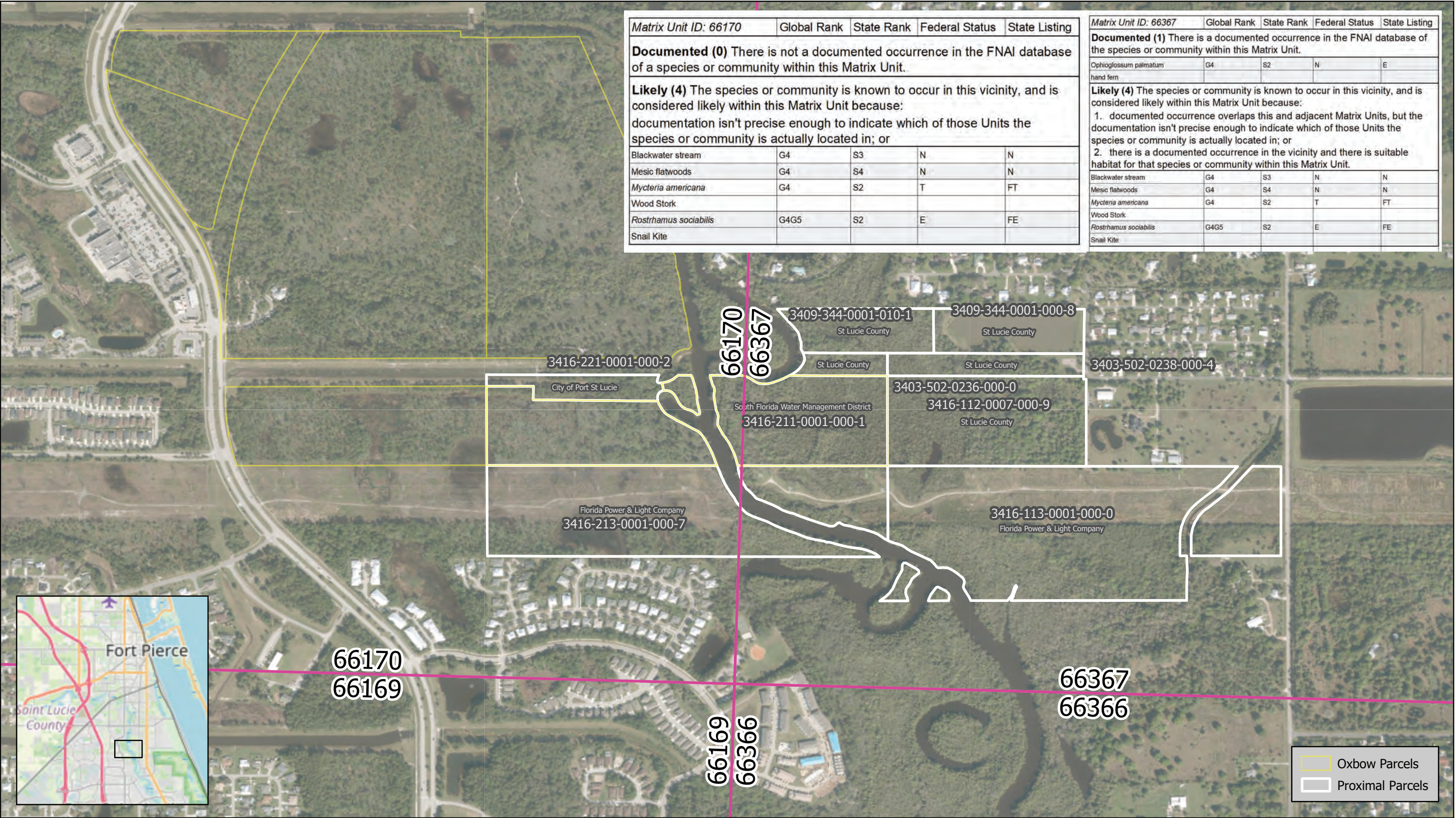
OXBOW ECOCENTER PEDESTRIAN TRAIL

Parcel Ownership



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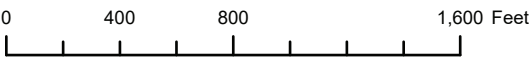


Matrix Unit ID: 66170	Global Rank	State Rank	Federal Status	State Listing
Documented (0) There is not a documented occurrence in the FNAI database of a species or community within this Matrix Unit.				
Likely (4) The species or community is known to occur in this vicinity, and is considered likely within this Matrix Unit because: documentation isn't precise enough to indicate which of those Units the species or community is actually located in; or				
Blackwater stream	G4	S3	N	N
Mesic flatwoods	G4	S4	N	N
<i>Mycteria americana</i>	G4	S2	T	FT
Wood Stork				
<i>Rostrhamus sociabilis</i>	G4G5	S2	E	FE
Snail Kite				

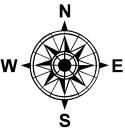
Matrix Unit ID: 66367	Global Rank	State Rank	Federal Status	State Listing
Documented (1) There is a documented occurrence in the FNAI database of the species or community within this Matrix Unit.				
<i>Ophioglossum palmatum</i>	G4	S2	N	E
hand fern				
Likely (4) The species or community is known to occur in this vicinity, and is considered likely within this Matrix Unit because: 1. documented occurrence overlaps this and adjacent Matrix Units, but the documentation isn't precise enough to indicate which of those Units the species or community is actually located in; or 2. there is a documented occurrence in the vicinity and there is suitable habitat for that species or community within this Matrix Unit.				
Blackwater stream	G4	S3	N	N
Mesic flatwoods	G4	S4	N	N
<i>Mycteria americana</i>	G4	S2	T	FT
Wood Stork				
<i>Rostrhamus sociabilis</i>	G4G5	S2	E	FE
Snail Kite				

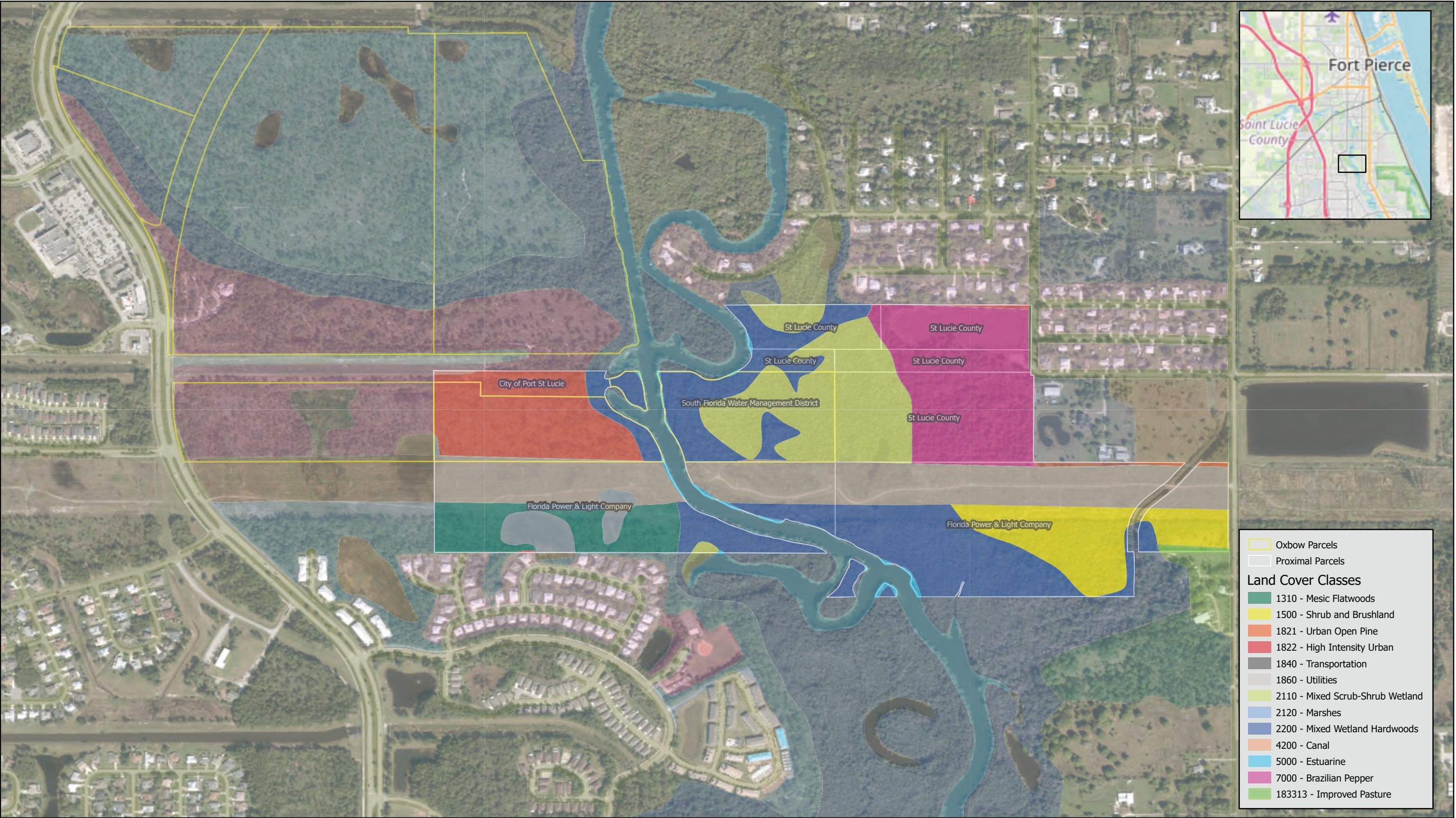


OXBOW ECOCENTER PEDESTRIAN TRAIL
Biodiversity Matrix



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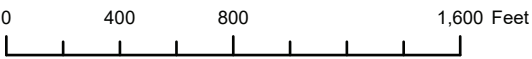




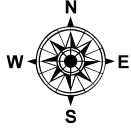
MARLIN

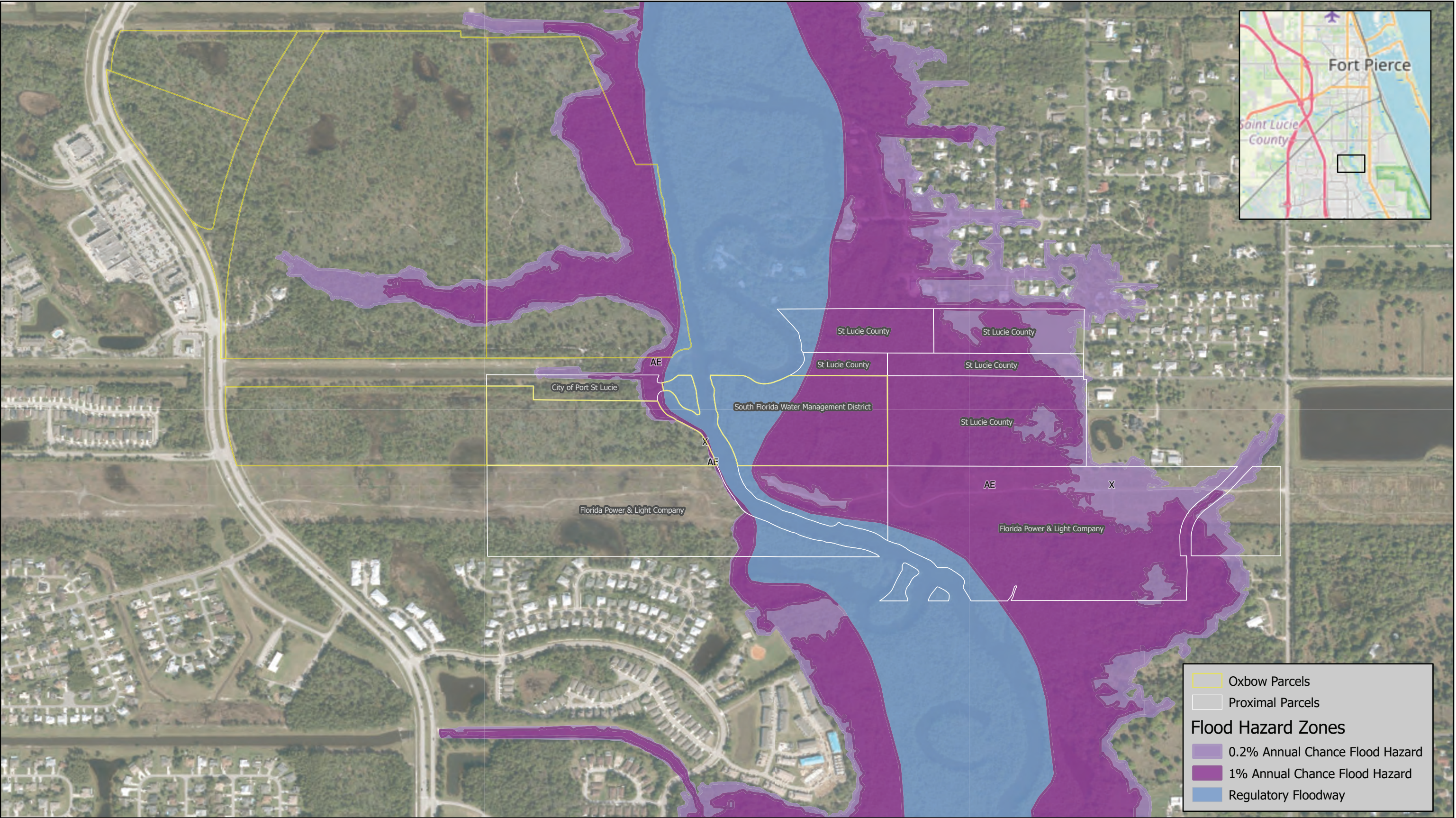
OXBOW ECOCENTER PEDESTRIAN TRAIL

Land Cover

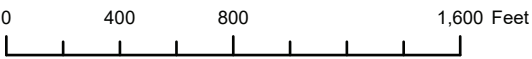


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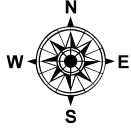


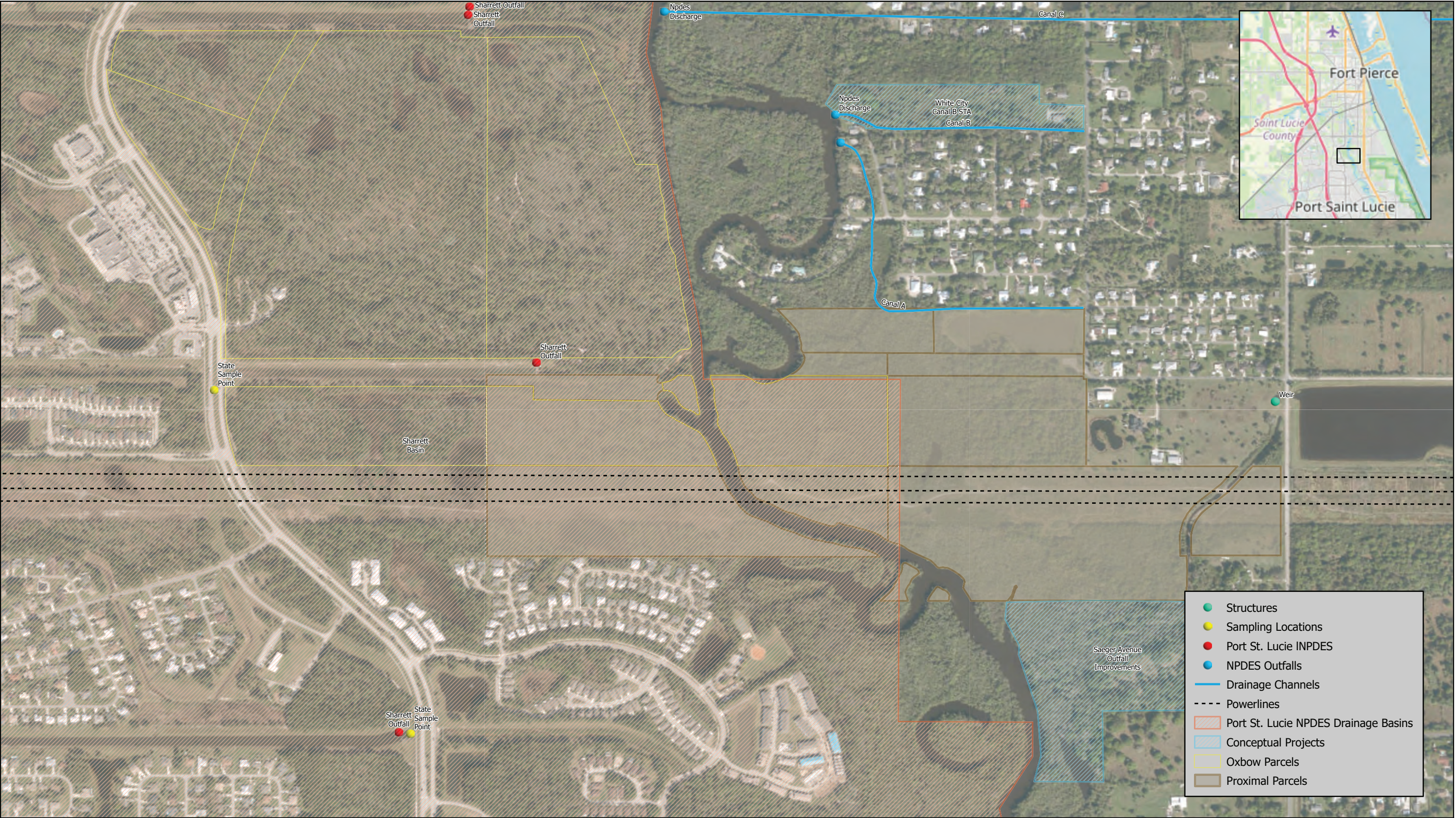


OXBOW ECOCENTER PEDESTRIAN TRAIL
Flood Zones



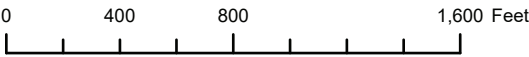
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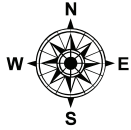


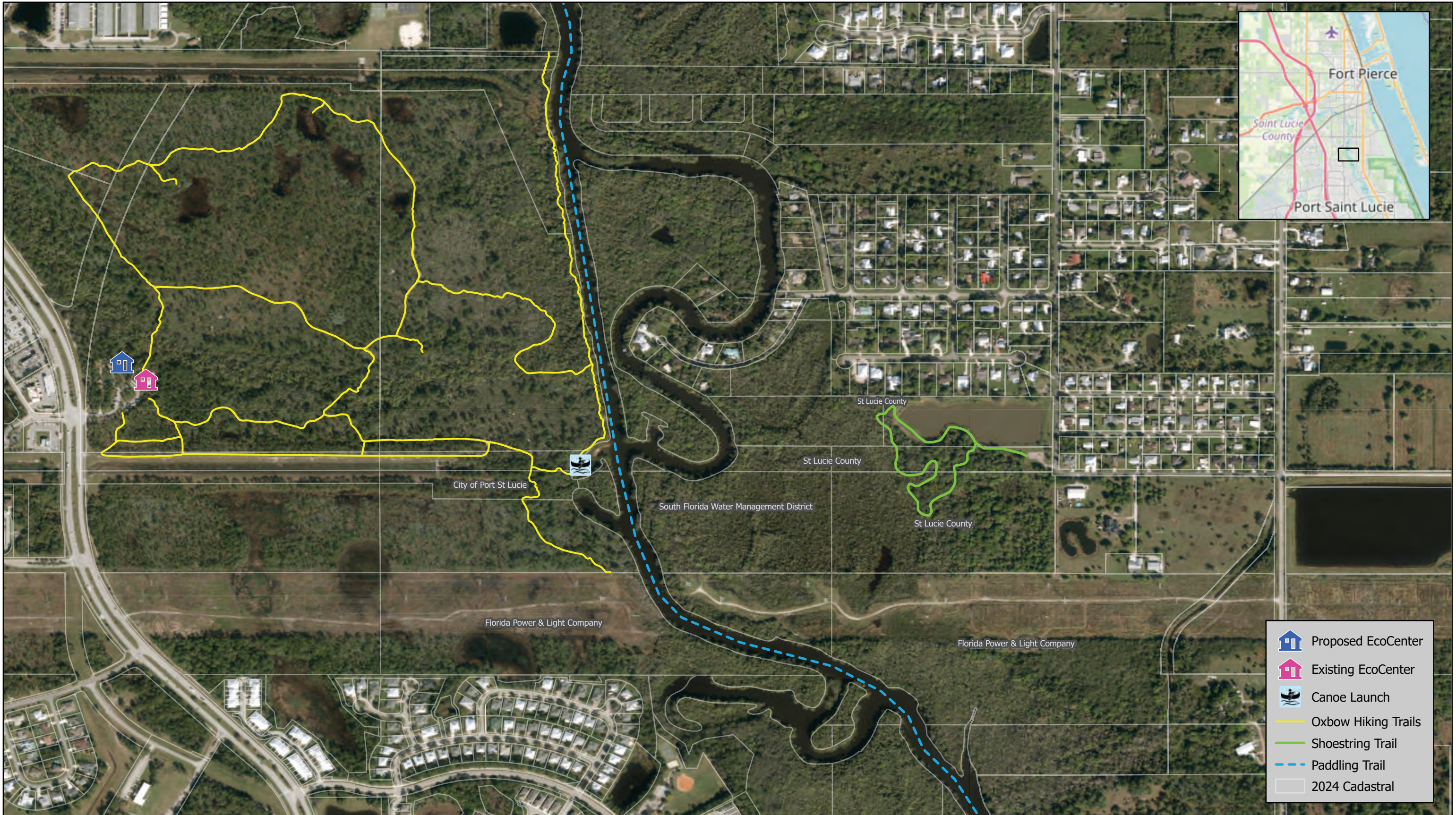
OXBOW ECOCENTER PEDESTRIAN TRAIL

Utilities



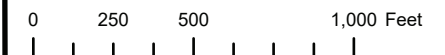
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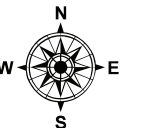


OXBOW ECOCENTER PEDESTRIAN TRAIL

Recreational Features



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Oxbow Connector Trail Feasibility Study

Agenda

Thursday, October 2, 2025

1. Introductions
 - a. Stephanie Torres, St. Lucie TPO Project Manager
 - b. Christina Fermin, Marlin Project Manager
 - c. Eric Katz, Marlin Senior Planner
 - d. Martin Mikhail, FPL Distribution
2. Project Scope Overview
 - a. Christina provided an overview of the project which included a feasibility study to locate a pedestrian/bicycle crossing across the St. Lucie River that will cause the least impacts.
3. Planned Projects or Improvements
 - a. FPL does not have any planned projects for the transmission corridor
4. Pedestrian/Bicycle Bridge Over the St. Lucie River
 - a. Requirements/Guidelines
 - i. Martin to provide ROW use guidelines.
 - ii. FPL typically does not allow trails within their transmission corridors, but reviews requests on a case-by-case basis.
 - iii. Advised the team to talk to someone with transmission, Martin to provide contact.
 - b. Process
 - i. Would allow via consent agreement.
 - ii. If allowed, this would be a long process.
 - c. Considerations
 - i. Access roads cannot be impacted.
 - ii. Infrastructure cannot be impacted.
 - iii. City of Port Orange and FPL have consent agreement in place for pedestrian pathway.
 - d. Permitting
 - i. FPL does not have permit process
5. **ACTION ITEMS**
 - a. Martin to provide contact for Transmission Department.

- b. Martin to provide FPL ROW Use Guidelines.
- c. Stephanie will reach out to transmission contact, once provided, to schedule a one-on-one meeting.



Oxbow Connector Trail Feasibility Study

Agenda & Notes

Wednesday, November 19, 2025

1. Introductions

- a. Stephanie Torres, St. Lucie TPO Project Manager
- b. Christina Fermin, Marlin Project Manager
- c. Eric Katz, Marlin Senior Planner
- d. Patrick Helms, Consultant Engineer for NSLRWCD

2. Project Scope Overview

- a. Stephanie provided a brief overview of the project and associated goals.
- b. The feasibility study goal is to identify a location for a pedestrian/bicycle bridge that would connect the Oxbow Eco-Center and Citrus Hammock Preserve to provide non-motorized connectivity and would be the least impactful option.

3. NSLRWCD Role & Responsibilities

- a. NSLRWCD = North St. Lucie River Water Control District
- b. District controls 65,000 acres
- c. Building Stormwater Treatment Area (STA) out west
- d. 10-mile creek is a failed reservoir, but is still used (originally planned to store 18-feet of water, but provides only about 4-feet today for water control)
- e. District maintains portion of Gordy Road structure
- f. They do not dredge Gordy Rd structure, east of Gordy all natural, overgrown, no spraying or maintenance in this area
- g. 5-mile creek was a historic tidal creek, SR 70 water control is no longer active, pipes now allow free flow of the creek, 5-mile creek runs into 10-mile creek which flows into north fork of SLR, area is prone to flooding
- h. Canals 105 - 107 were given to the City of Port St. Lucie (PSL) which currently maintains these canals and water control structures
- i. Canal 106 is in the study area and is maintained by City of PSL and has a water control structure
- j. NSLRWCD does not have canal ROW within the immediate study area
- k. Ponds east of study area (south of Seager Ave, north of the FPL corridor) are county owned and maintained, built after US 1 expansion, ponds flow into North Fork SLR

- l. Canal 22 is the location of the SUN Trail under construction, which is under the jurisdiction of NSLRWD district, canal banks are eroding, and the district is looking to reinforce the banks with rip rap
- m. Canal 28 has structure discharging into the North Fork SLR
- n. NSLRWCD is funded by property tax, this money funds only operations and maintenance
- o. Capital improvements are funded by grants and/or SFWMD
- p. Canals to the west have higher elevations, St. Lucie River is tidally influenced

4. Planned Projects or Improvements

- a. NSLRWCD does not have any planned projects within the study area at this time
- b. The county may expand joint ponds east of the study area for run off and water quality
- c. Drainage in the area is challenging
- d. Stormwater Master Plan is underway by the county
- e. SFWMD is working on modeling and another STA west, working on creating operating plans, this is part of CERP
- f. Temporary stage monitoring equipment at Midway Rd
 - i. Measures water elevation
 - ii. Can analyze peak elevations with data
 - iii. Patrick to share data

5. Pedestrian/Bicycle Bridge Over the St. Lucie River

- a. NSLRWCD does not have jurisdiction within the study area
- b. Canals east of study area (C-17, 22, 23, and 27) would need review and approval by the NSLRWCD for any potential trail or pathway connections
- c. Linear interpolation can reasonably be assumed between the 2 bridges for the height of the pedestrian bridge

6. Next Steps

- a. Request and review Midway and Primavera Bridge projects & plans to assist with bridge height
- b. Check if county has any data on vessel traffic within or near the study area



★ Selected Alternative – SFWMD Property

Oxbow Connector Trail Feasibility Study

Agenda & Notes

Thursday, November 20, 2025

1. Introductions

- a. Stephanie Torres, AICP, St. Lucie TPO Project Manager
- b. Christina Fermin, AICP, Marlin Project Manager
- c. Eric Katz, AICP, PMP, Marlin Senior Planner
- d. Irene Arpayoglou, MS, FDEP Aquatic Preserves Manager
 - i. Oversees Indian River Lagoon
 - ii. St. Lucie Aquatic Preserve

2. Project Scope Overview

- a. Stephanie and Christina provided a brief overview of the project.
- b. This feasibility study seeks to identify the best location for a pedestrian/bicycle bridge connecting the Oxbow Eco-Center and Citrus Hammock Preserves which will be the least impactful.

3. FDEP Role & Responsibilities

- a. Permits and reviews projects within Aquatic Preserves and environmentally sensitive lands
- b. During FDEP review, ensure the proposal is in-line with the Aquatic Management Plan.
- c. Discussed Petravis bridge – county ped bridge, Irene to share files
- d. Permit application will be placed with the Southeast District Office – Environmental Resources Permit
 - i. 3 components:
 - 1. Regulatory authority – statute, regulations,
 - 2. Use of sovereign submerged lands, easement would be required, and
 - 3. Federal authorization from army corps
 - ii. Permit process can take a minimum of 1-month or longer

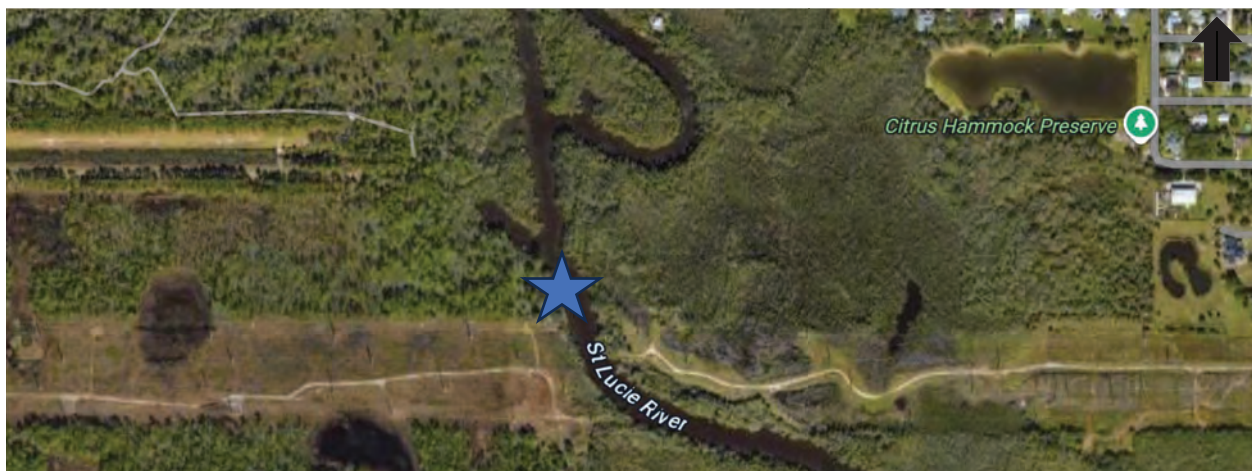
4. Planned Projects or Improvements

- a. FDEP primarily does permitting
- b. No known projects within immediate study area

- c. Briefly discussed county/USACE project to re-hydrate wetlands north of the broken oxbow around the canoe and kayak launch area, southeast Oxbow property, and planned to reconnect this area with the river – currently inaccessible due to silt and sediment build up

5. Pedestrian/Bicycle Bridge Over the St. Lucie River

- a. Requirements
 - i. Heights – cannot block upstream vessels
- b. Guidelines
 - i. Aquatic preserve rule – water dependent structures – Irene to send
- c. Process
 - i. Design plans
 - ii. Hydrological review if an in-water structure
- d. Considerations
 - i. Is the proposed project aligned with the Aquatic Management Plan?
 - ii. Bridge height – dictated by USCG
 - iii. Structure placement - High potential for erosion
 - iv. Navigation may be an issue
- e. Wayfinding/Signage Standards
 - i. FDWC – boating and waterways needs to be included
- f. Permitting
 - i. FIND – In charge of dredging and may need to review
 - 1. Janet Zimmer, Irene to provide contact
 - ii. USCG – Bridge over waterways
 - iii. Setup pre-application meeting prior to submitting permit



★ Selected Alternative – SFWMD Property

Oxbow Connector Trail Feasibility Study

Agenda & Notes

Tuesday, November 25, 2025

1. Introductions

- a. Stephanie Torres, St. Lucie TPO Project Manager
- b. Christina Fermin, Consultant Project Manager
- c. Michael Bush, USACE Project Manager for Everglades Restoration
- d. John Baehre, USACE Project Manager

2. Project Scope Overview

- a. Stephanie provided a brief overview of the project and goals; Christina provided an overview of the area and selected alternative.

3. USACE Role & Responsibilities

- a. SFWMD is the non-federal sponsor for local projects
- b. Everglades restoration projects will include recreational features – 50/50 cost share
 - i. Canoe launch
 - ii. Parking area
 - iii. Michael is leading design and placement
 - iv. Phase II of the IRL-S Project will include floodplain preservation in the NF of the SLR, some recreation features are being proposed on the secured/target lands – approximately 300 acres
- c. Planned muck removal of North Fork St. Lucie River (~2030)
 - i. Will be creating sediment traps
 - ii. Pending STA's
- d. CAP Program
 - i. Survey and restoration
 - ii. Potential funding opportunities

4. Planned Projects or Improvements

- a. Rehydration of wetlands, north of the study area

5. Pedestrian/Bicycle Bridge Over the St. Lucie River

- a. Requirements
 - i. No jurisdiction on bridge except footers within the water
 - ii. Select least environmentally damaging area for bridge

- b. Guidelines/Permitting
 - i. USACE has permit process, can occur concurrently with FDEP Permit
 - ii. ERP is needed for permit with USACE
- c. Process
 - i. Section 408 (engineering) Review – proposed alteration on federally authorized civil work projects, aka any change within the footprint of federal project
 - 1. Functional impairment, public safety, environmental impacts, real estate impacts, legal and policy compliance
 - ii. Conducts federal regulatory review
 - iii. Permit type is dependent on impacts
 - iv. FDEP would review and permit boardwalk
- d. Considerations
 - i. Consider cultural resources
 - ii. Protected species
 - 1. No in water species in the area
 - 2. Considerations for manatees
 - 3. Outside of water will be of more concern
 - a. Nest survey requirements – potential bat habitats
 - i. Florida Bonnet Bat (Protected Species)
 - ii. Tri-color Bat (Pending Protected Status)
 - iii. Costly to conduct
 - iii. 404 impacts are adverse effects on aquatic ecosystems from discharge of dredged or fill material into U.S. waters
 - 1. Boardwalks are a good alternative to minimize any impacts a bridge or trail may cause to ecosystem/wetlands



★ Selected Alternative – SFWMD Property



Oxbow Connector Trail Feasibility Study

SFWMD (One-on-One)

Wednesday, December 3, 2025 1:00pm

1. Introductions

- a. Stephanie Torres – TPO Project Manager
- b. Joan Finley – SFWMD, Legal Office Administration
- c. Rory Feeney – SFWMD, Land Development Division
- d. Justin Nolte – SFWMD, Natural Resources Manager
- e. Ray Palmer, SFWMD, Real Estate Bureau Chief

2. Project Scope Overview

- a. Feasibility study that will identify optimal location for a pedestrian bridge
- b. Current Preferred Alternate 1 impacts SFWMD lands

3. SFWMD Role & Responsibilities

- a. SFWMD is the property owner of Alternative 1 location as such any project within Oxbow lands would need written approval to disturb SFWMD property from the Land Development Division. (SFWMD ROW Permit).
- b. SFWMD would require a maintenance agreement noting the party responsible for routine bridge maintenance. Agreement would need to detail maintenance responsibilities would extend into perpetuity even if the 99 year lease between the County & SFWMD is revoked for any reason.
- c. Oxbow lands were purchased with CERP funds; as such the lease with SLCERD can be revoked at anytime should there be additional re-watering projects within the Oxbow. If the USACE plans projects within the vicinity of the bridge, request to remove the facility could occur.

4. Planned Projects or Improvements

- a. None at this time

5. Considerations

- a. Alternative 2 (FPL Transmission Corridor) is the preferred alternative from SFWMD perspective. Project Team should note: FPL easement would most likely be needed for staging and getting equipment to site requiring coordination with FPL. FPL corridor would have least amount of environmental impacts.
- b. SFWMD lands are very wet on the east side of the project; boardwalks would be necessary to make the trail connection at Citrus Hammock.



6. ACTION ITEMS:

- a. Stephanie will continue to provide updates and final report findings to SFWMD team.



FIGURE 1: MAP OF PROPOSED ROUTE ALTERNATIVES FOR PEDESTRIAN BRIDGE

MARLIN

ST. LUCIE TRANSPORTATION PLANNING ORGANIZATION (TPO) OXBOW ECO-CENTER PEDESTRIAN/BICYCLE LINK CONNECTOR FEASIBILITY STUDY

Scope of Services

MARLIN Engineering Inc. (Consultant) will support the St. Lucie TPO Bicycle-Pedestrian/Complete Streets Planning and the St. Lucie Walk-Bike Network, through building upon previous complete streets planning efforts, and continue the ongoing planning and coordinating efforts which support the provision of bicycle, pedestrian, and greenway facilities. This project will focus on the identification of feasible alternatives for the proposed Oxbow Eco-Center Pedestrian Link Feasibility Study.

Project Description

The St. Lucie TPO wants to conduct a feasibility study for a pedestrian connection in St. Lucie County from the Oxbow Eco-Center over the St. Lucie River east to Citrus Hammock Preserve, see Figure 1. This trail segment will serve as a bicycle and pedestrian connection point from the west side of the St. Lucie River at the Oxbow Eco Center to the east side of the St. Lucie River to Citrus Hammock. The connection will provide access and enhance connectivity to the future greenways of the North Fork St. Lucie River Trail and the East Coast Greenway Trail.

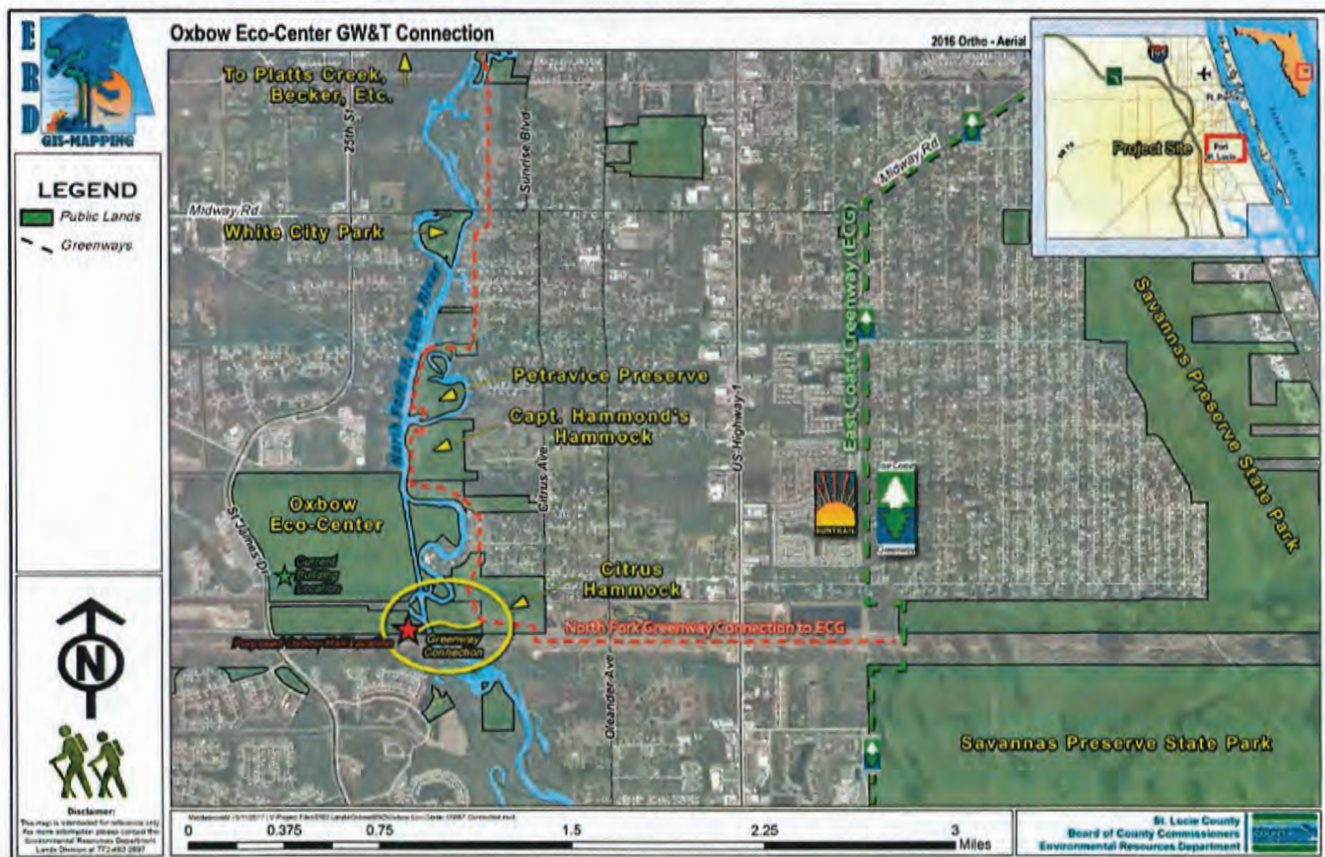


Figure 1: Project Site Map



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The Consultant shall conduct up to eight (8) virtual 30-minute meetings with St. Lucie County Environmental Resources District, St. Lucie County, FPL and other interested stakeholders and agencies, as identified by the St. Lucie TPO, to inform, discuss, and gather comments about the study. An agenda and exhibits will be prepared by the Consultant, as-needed, as part of the meetings. Additionally, meeting notes will also be prepared by the Consultant and provided to the TPO Project Manager for review within one week after the meeting. As part of the public engagement process, the Consultant shall prepare and present an information sheet and exhibit(s)

MARLIN

for one (1) Public Workshop to be held at the Oxbow Eco-Center Earth Day Event. The information and comments received from the public, stakeholders, and staff shall be incorporated into the final report and considered for the preferred route. Once a Draft Feasibility Study is prepared, the Consultant will prepare and present the findings to one-round of the TPO Committees and TPO Board to gather information and feedback. This information will then be incorporated into the final report.

Task 4: Route Development and Report

Typical sections for the preferred route alignment will be developed. The data gathered in Task 2 will inform the review and development of the preferred alignment connecting the Oxbow Eco Center to east of the St. Lucie River to Citrus Hammock Preserve. The Consultant shall identify permit requirements and a planning level cost estimate for the preferred alternative. The Consultant will prepare a draft report and include one-round of comments from staff, stakeholders, TPO Committees and Board, before finalizing the document. The Feasibility Study report will include the following components:

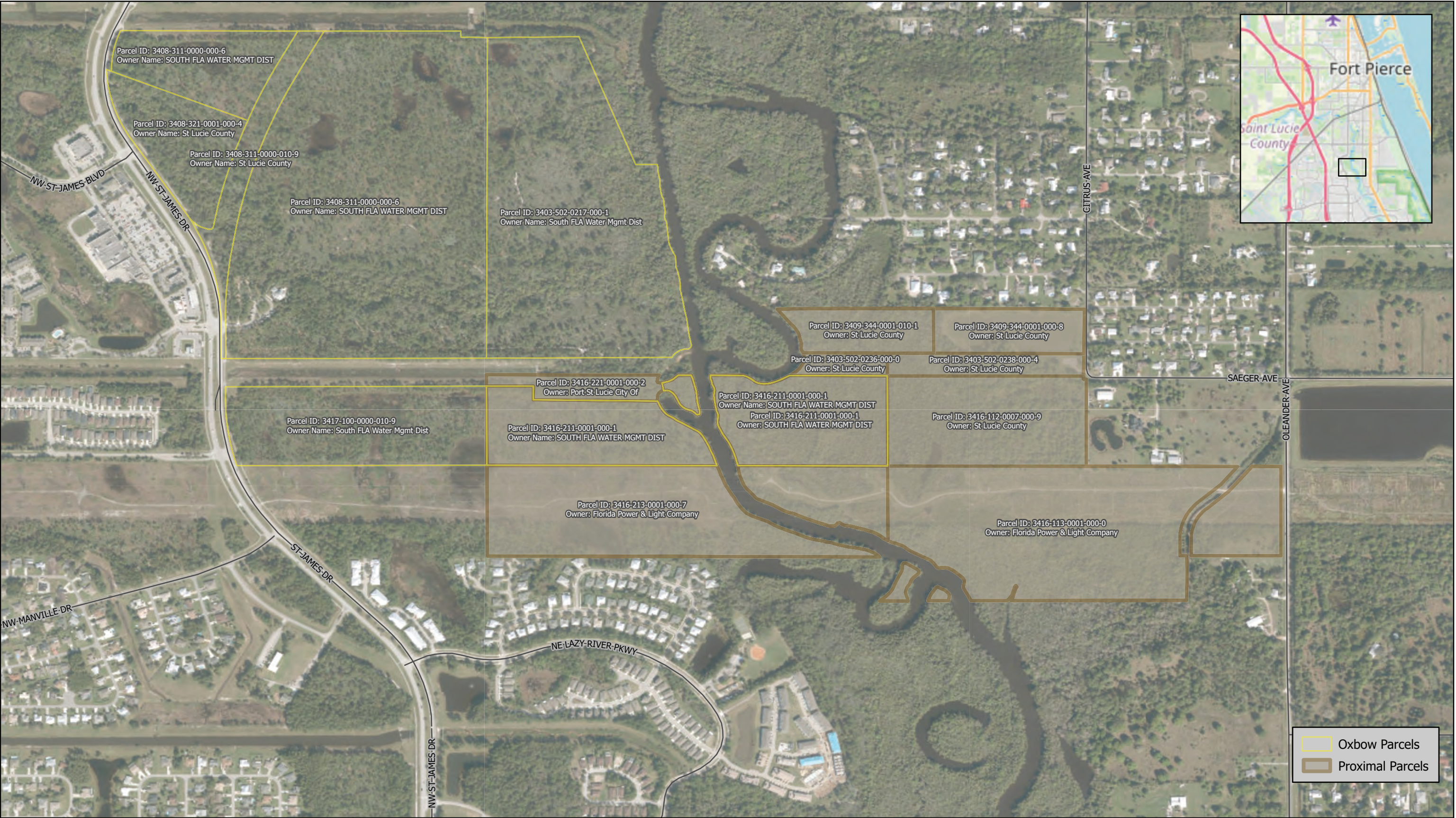
- An executive summary.
- An introduction with a general project area description, project background, purpose and need statements.
- Summary of existing conditions.
- Proposed route alignments, potential impacts, fatal flaws, and right-of-way summaries.
- Selection of the preferred route alignment will include supporting features (i.e., access, amenities, trailheads) facilitating connections at each preserve.
- Potential impacts to social, natural, physical, and cultural features; including aerial maps, and features.
- Permit Requirements and Cost Estimates.
- Conclusion.

Method of Compensation

Services for this task work order will be provided on a percent complete basis. The fee estimate for the work effort is contained in Attachment A.

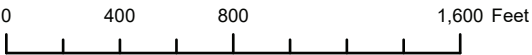
Schedule

The Consultant shall prepare the final report within six (6) months of receiving the NTP.

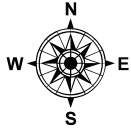


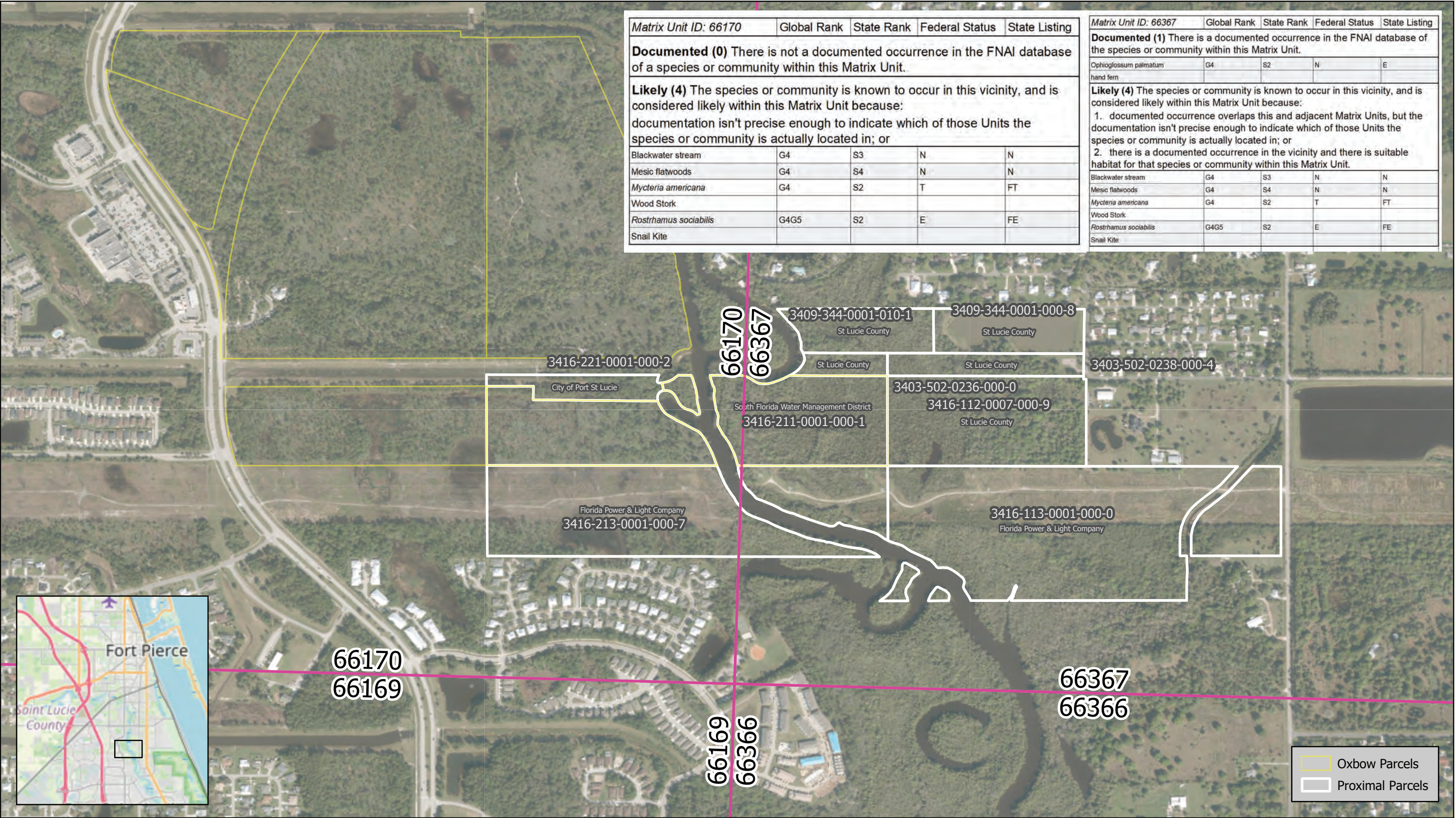
OXBOW ECOCENTER PEDESTRIAN TRAIL

Parcel Ownership



The maps and map data are for informational purposes only and are provided "as-is". The source data may contain errors and it is the responsibility of the end user to verify the information provided. These maps and data should not be used for navigational, tracking, or any other purpose requiring exacting measurement of distance or direction.



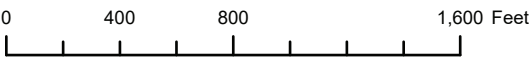


Matrix Unit ID: 66170	Global Rank	State Rank	Federal Status	State Listing
Documented (0) There is not a documented occurrence in the FNAI database of a species or community within this Matrix Unit.				
Likely (4) The species or community is known to occur in this vicinity, and is considered likely within this Matrix Unit because: documentation isn't precise enough to indicate which of those Units the species or community is actually located in; or				
Blackwater stream	G4	S3	N	N
Mesic flatwoods	G4	S4	N	N
<i>Mycteria americana</i>	G4	S2	T	FT
Wood Stork				
<i>Rostrhamus sociabilis</i>	G4G5	S2	E	FE
Snail Kite				

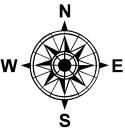
Matrix Unit ID: 66367	Global Rank	State Rank	Federal Status	State Listing
Documented (1) There is a documented occurrence in the FNAI database of the species or community within this Matrix Unit.				
<i>Ophioglossum palmatum</i>	G4	S2	N	E
hand fern				
Likely (4) The species or community is known to occur in this vicinity, and is considered likely within this Matrix Unit because: 1. documented occurrence overlaps this and adjacent Matrix Units, but the documentation isn't precise enough to indicate which of those Units the species or community is actually located in; or 2. there is a documented occurrence in the vicinity and there is suitable habitat for that species or community within this Matrix Unit.				
Blackwater stream	G4	S3	N	N
Mesic flatwoods	G4	S4	N	N
<i>Mycteria americana</i>	G4	S2	T	FT
Wood Stork				
<i>Rostrhamus sociabilis</i>	G4G5	S2	E	FE
Snail Kite				

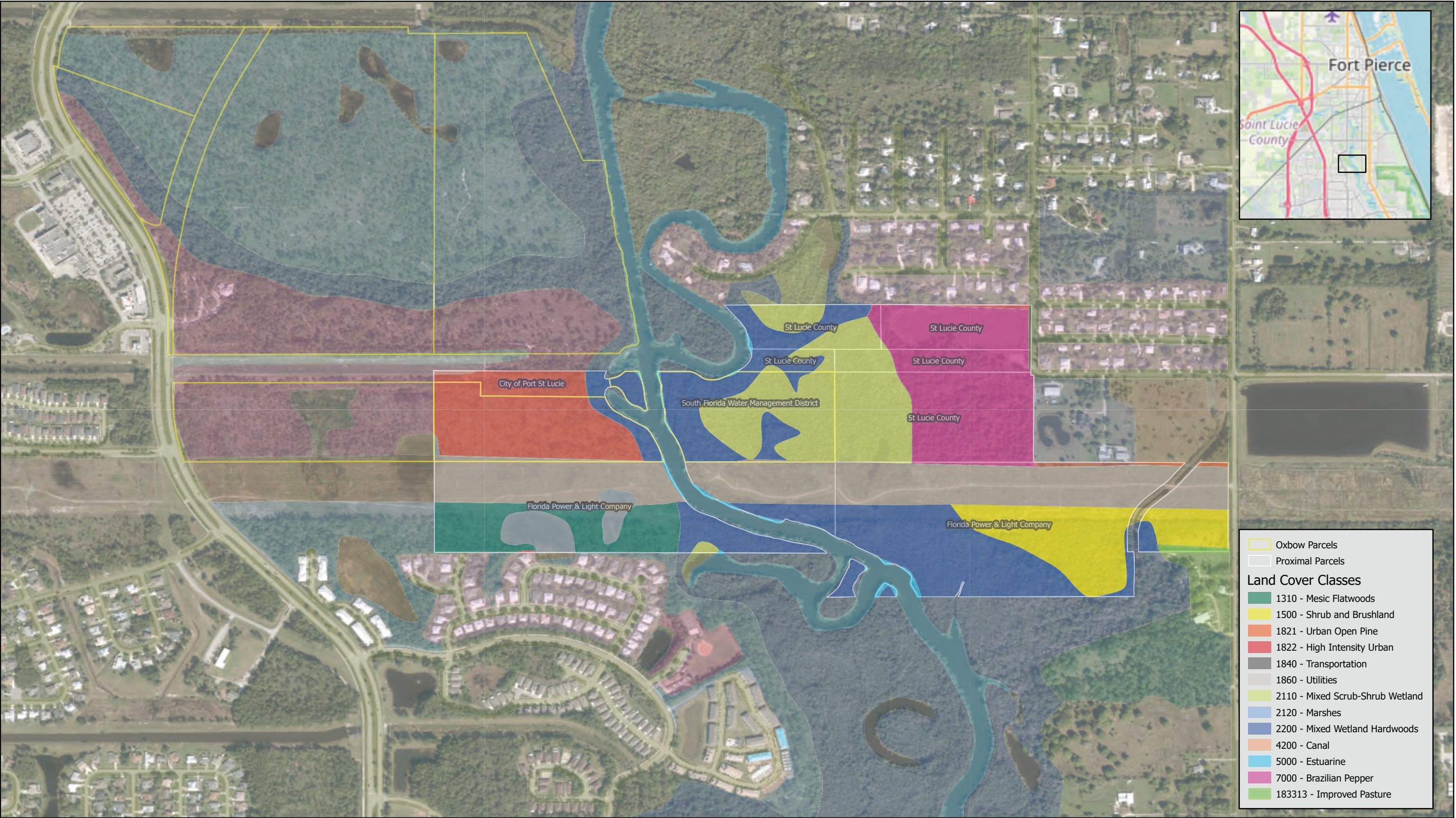


OXBOW ECOCENTER PEDESTRIAN TRAIL
Biodiversity Matrix



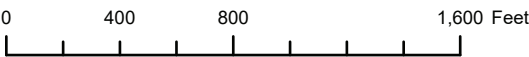
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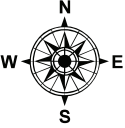


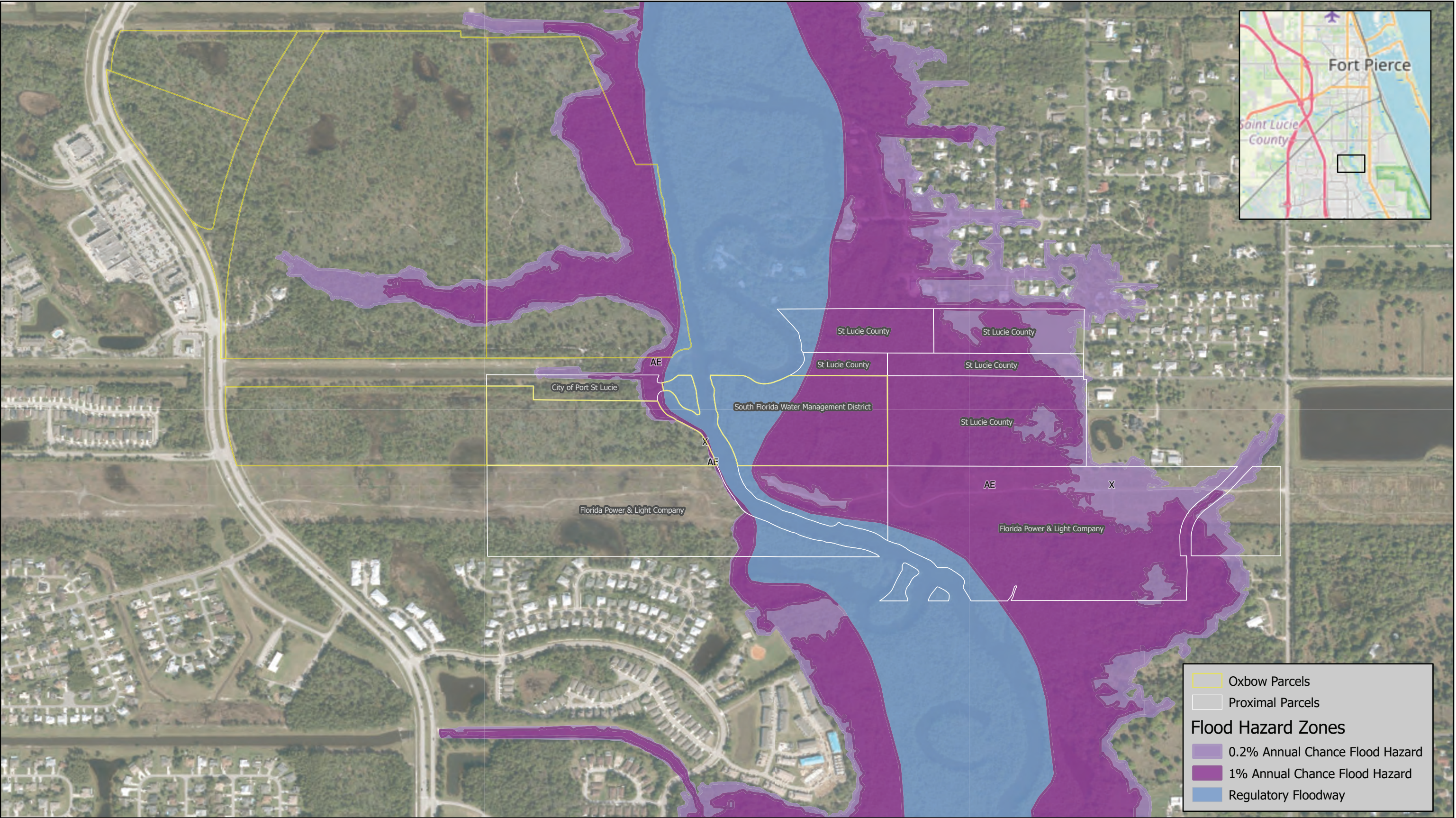
OXBOW ECOCENTER PEDESTRIAN TRAIL

Land Cover



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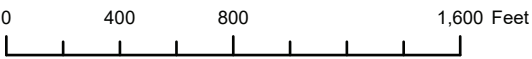




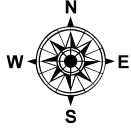
MARLIN

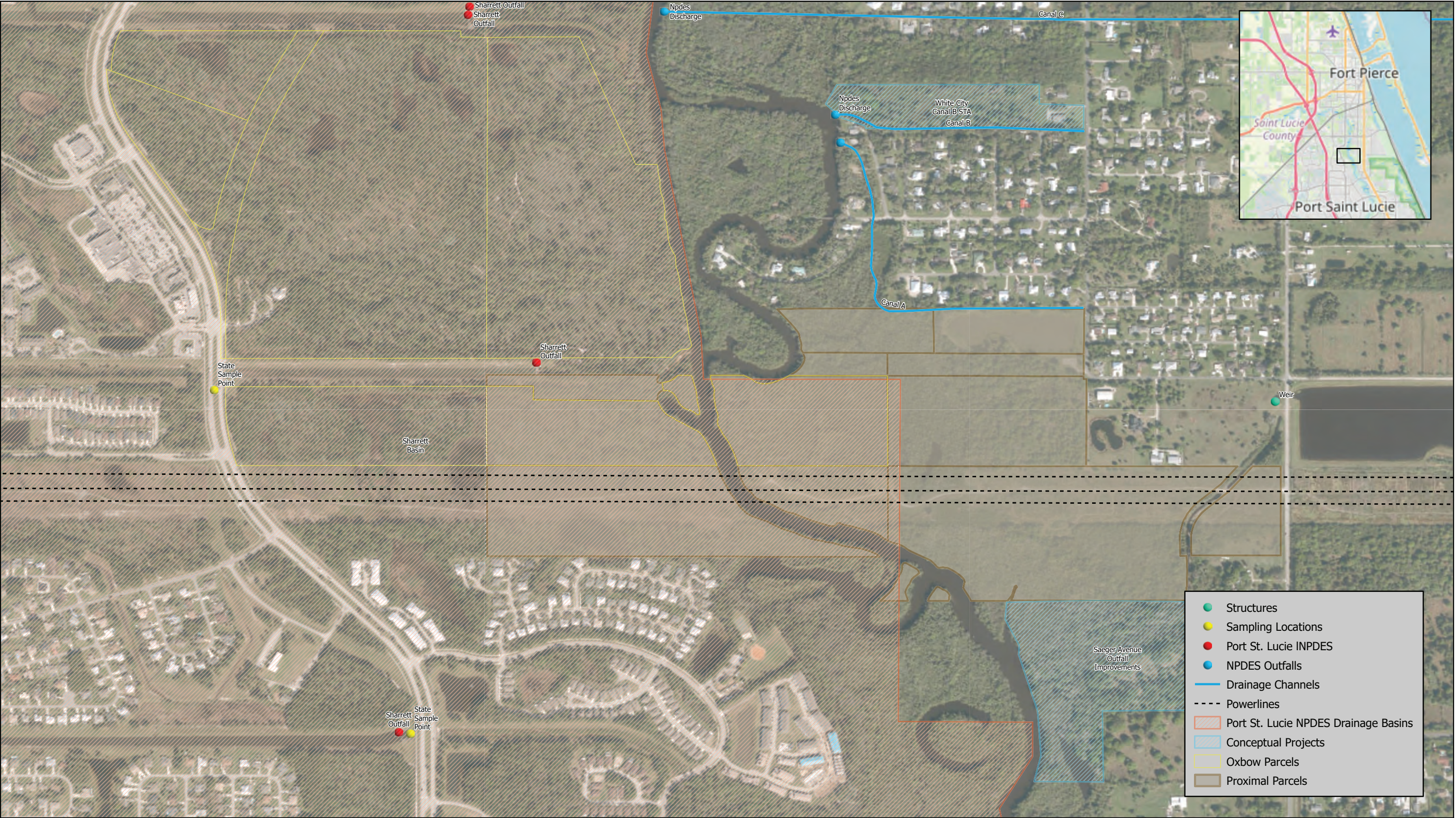
OXBOW ECOCENTER PEDESTRIAN TRAIL

Flood Zones



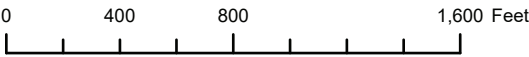
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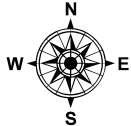


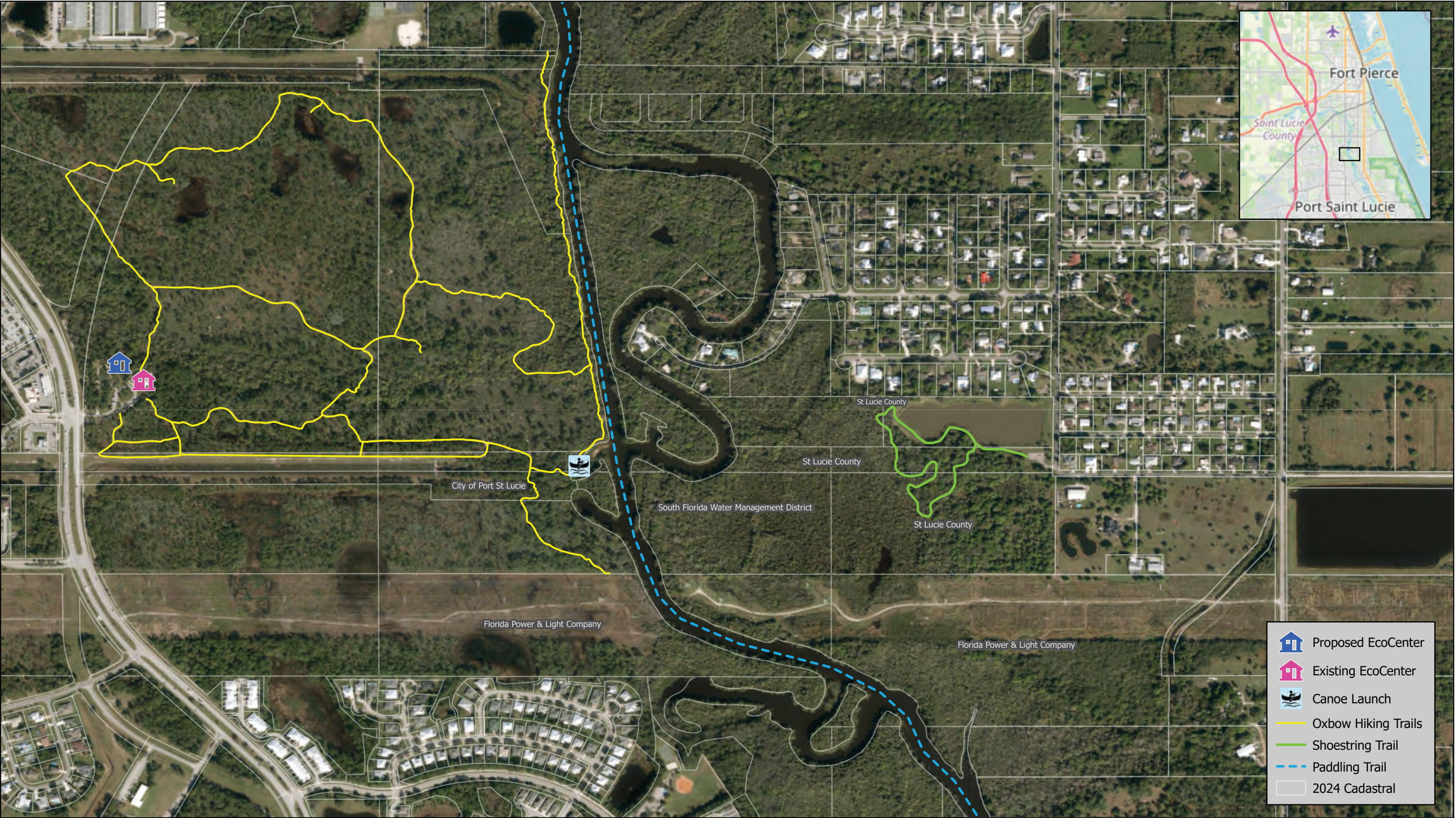
OXBOW ECOCENTER PEDESTRIAN TRAIL

Utilities



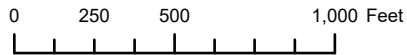
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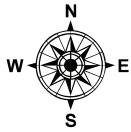


OXBOW ECOCENTER PEDESTRIAN TRAIL

Recreational Features



The maps and map data are for informational purposes only and are provided "as-is". The source data may contain errors and it is the responsibility of the end user to verify the information provided. These maps and data should not be used for navigational, tracking, or any other purpose requiring exacting measurement of distance or direction.



Oxbow Connector Trail Feasibility Study

Agenda & Notes

Tuesday, December 9, 2025

1. Introductions

- a. Stephanie Torres, St. Lucie TPO Project Manager
- b. Christina Fermin, Marlin Project Manager
- c. Eric Katz, Marlin Senior Planner
- d. Lisia Kowalczyk, USCG SE District Office (Bridge Office)

2. Project Scope Overview

- a. Stephanie provided a brief overview of the project
- b. Project includes reviewing process, permits, and identification of preferred location for ped/bike bridge connection across the North Fork of the St. Lucie River connecting Citrus Hammock Preserve and the Oxbow Center

3. USCG Role & Responsibilities

- a. Bridger permits, modifications
- b. Preserving navigation is the primary objective

4. Planned Projects or Improvements

- a. None currently

5. Pedestrian/Bicycle Bridge Over the St. Lucie River

- a. Requirements
 - i. 90% plans and application for 401 water quality certification
- b. Process
 - i. Impacts on navigation
 - ii. Preliminary navigational approval
 - iii. Who is north (mariners), where are they going?
 - iv. Who is visiting boat ramps – boat size, traveling to/from, purpose - survey users
- c. Permit
 - i. NEPA Process – Federal Action
 - ii. Application is detailed and provides information on agencies that will be included in the review process.
 - iii. 401 Water Quality Certification – SFWMD issues

- iv. Public Notice is 30 days and posted via multiple federal and state channels once application and plans are received
 - 1. Local agency responsible for posting (30 days) in newspapers
 - 2. Local mail notice, decided once application is submitted
 - 3. Navigation questions are handled by USGC, all other questions handled by applicant
- v. Process is 4 to 6 months per permit to be issued, maybe longer if there are delays or issues
- d. Considerations
 - i. Mitigation is required for environmental impacts
 - ii. Proximity to boat ramp impacts process



Oxbow Connector Trail Feasibility Study

Agenda & Notes

Tuesday, December 16, 2025

1. Introductions

- a. Stephanie Torres, TPO Project Manager
- b. Christina Fermin, MARLIN Project Manager
- c. Eric Katz, Senior Planner
- d. Chris Kelley, Deputy Director of FIND

2. Project Scope Overview

- a. Stephanie provided a quick overview of the project which seeks to identify a location to connect the Oxbow Eco-Center and Citrus Hammock Preserve via a pedestrian/bicycle bridge over the North Fork of the St. Lucie River.

3. FIND Role & Responsibilities

- a. Concerned with waterway navigation and vessels navigating waterway
- b. FIND provides Phase 1 and 2 grant funding for public access to the waterway

4. Planned Projects or Improvements

- a. FIND has funded several projects for public access facilities, Chris to share via email
 - i. White City Boat Ramp and Launch – 2026
 - ii. River Park Marina Boat Ramp – 2026
- b. Chris may have data on boat traffic – will follow up

5. Pedestrian/Bicycle Bridge Over the St. Lucie River

- a. Requirements/Guidelines
 - i. Primary concern is with vertical clearance
 - 1. Prima Vista Bridge is 12.8 feet
 - 2. Crosstown Parkway Bridge is 23 feet
 - 3. Midway Rd Bridge is 9 feet
- b. Process/Permit
 - i. No permits
- c. Considerations
 - i. Minimum 12 feet in height requested
 - ii. FIND provides funding opportunities, project would be considered a Waterfront Park



★ Selected Alternative – SFWMD Property

Oxbow Connector Trail Feasibility Study

Agenda & Notes

Tuesday, January 6, 2026

1. Introduction

- a. Stephanie Torres, TPO Project Manager
- b. Christina Fermin, Consultant Project Manager
- c. Eric Katz, Consultant Senior Planner
- d. Everett Tourjee, Public Works
- e. Emily Seitter, Public Works

2. Project Scope Overview

- a. Stephanie provided an overview of meetings and information gathered.

3. Planned Projects or Improvements

- a. City Mobility Plan has SUP planned for St. James – this is in the planning phase still
- b. City has a project along Peachtree Blvd

4. Pedestrian/Bicycle Bridge Over the St. Lucie River

- a. Discussed potential for shared use path on south side of canal 106 as a connection for cyclists and pedestrians to connect from St. James Drive to bike/ped bridge
- b. Northside is currently used as an access road by Oxbow and City.
- c. City would support multi-use, SUP and access road on south side with bollards and stabilized base with 10-foot asphalt path that meet shared use path and utility road standards
- d. City is exploring something similar elsewhere in the city
- e. Water control structures are sometimes considered a security asset/risk – Peter May is Stormwater Division lead and the city needs to have discussions
- f. City Land Use – current land use may limit development, OSC – may need to address zoning
- g. City believes there may be easement access along canal
- h. Emily to provide city contacts for planning, zoning, and stormwater
 - i. Peter May – may provide info on additional permits
 - ii. Bridgette – Planning – info on zoning, site planning
- i. May need ROW permit with City for SUP



★ Selected Alternative – SFWMD Property



CITIZENS ADVISORY COMMITTEE (CAC)

Regular Meeting

Tuesday, May 19, 2026
10:30 am

Public Participation / Accessibility

Participation in Person: Comments may be provided in person at the meeting. Persons who require special accommodations under the Americans with Disabilities Act (ADA) or persons who require translation services (free of charge) should contact the St. Lucie TPO at 772-462-1593 at least five days prior to the meeting. Persons who are hearing or speech impaired may use the Florida Relay System by dialing 711.

Participation by Webconference (not intended for Committee Members): Using a computer or smartphone, register at <https://attendee.gotowebinar.com/register/7000494231463337565>. After the registration is completed, a confirmation will be emailed containing instructions for joining the webconference. Comments may be provided through the webconference chatbox during the meeting.

Written and Telephone Comments: Comment by email to TPOAdmin@stlucieco.org; by regular mail to the St. Lucie TPO, 466 SW Port St. Lucie Boulevard, Suite 111, Port St. Lucie, Florida 34953; or call 772-462-1593 until 10:00 am on May 19, 2026.

AGENDA

1. **Call to Order**
2. **Roll Call**
3. **Comments from the Public**
4. **Approval of Agenda**
5. **Approval of Meeting Summary**
 - *March 17, 2026 Regular Meeting*
6. **Action Items**
 - 6a. **Draft FY 2026/27 – FY 2030/31 Transportation Improvement Program (TIP):** Review of the draft FY 2026/27 – FY 2030/31 TIP.

***Action:** Recommend adoption of the draft FY 2026/27 – FY 2030/31 TIP, recommend adoption with conditions, or do not recommend adoption.*

- 6b. Oxbow Eco-Center Pedestrian/Bicycle Link Connector Feasibility Study:** Review of the draft Feasibility Study of a pedestrian/bicycle link across the North Fork of the St. Lucie River connecting the Oxbow Eco-Center to the Citrus Hammock Preserve.

Action: *Recommend acceptance of the Feasibility Study, recommend acceptance with conditions, or do not recommend acceptance.*

- 6c. St. Lucie Advanced Transportation Management System (ATMS) Master Plan Update:** Review of the draft St. Lucie ATMS Master Plan Update.

Action: *Recommend adoption of the draft St. Lucie ATMS Master Plan Update, recommend adoption with conditions, or do not recommend adoption.*

- 6d. 2026/27 List of Priority Projects (LOPP):** Review of the draft LOPP for 2026/27 for the St. Lucie TPO.

Action: *Recommend adoption of the draft 2026/27 LOPP, recommend adoption with conditions, or do not recommend adoption.*

7. Recommendations/Comments by Members

8. Staff Comments

- 9. Next Meeting:** The next St. Lucie TPO CAC meeting is a regular meeting scheduled for 10:30 am on Tuesday, July 21, 2026.

10. Adjourn

NOTICES

The St. Lucie TPO satisfies the requirements of various nondiscrimination laws and regulations including Title VI of the Civil Rights Act of 1964. Public participation is welcome without regard to race, color, national origin, age, sex, religion, disability, income, or family status. Persons wishing to express their concerns about nondiscrimination should contact Marceia Lathou, the Title VI/ADA Coordinator of the St. Lucie TPO, at 772-462-1593 or via email at lathoum@stlucieco.org.

Items not included on the agenda may also be heard in consideration of the best interests of the public's health, safety, welfare, and as necessary to protect every person's right of access. If any person decides to appeal any decision made by the St. Lucie TPO Advisory Committees with respect to any matter considered at a meeting, that person shall need a record of the proceedings, and for such a purpose, that person may need to ensure that a verbatim record of the proceedings is made which includes the testimony and evidence upon which the appeal is to be based.

Kreyol Ayisyen: Si ou ta renmen resevwa enfòmasyon sa a nan lang Kreyòl Aysiyen, tanpri rele nimewo 772-462-1593.

Español: Si usted desea recibir esta información en español, por favor llame al 772-462-1593.



TECHNICAL ADVISORY COMMITTEE (TAC)

Regular Meeting

Tuesday, May 19, 2026
1:30 pm

Public Participation / Accessibility

Participation in Person: Comments may be provided in person at the meeting. Persons who require special accommodations under the Americans with Disabilities Act (ADA) or persons who require translation services (free of charge) should contact the St. Lucie TPO at 772-462-1593 at least five days prior to the meeting. Persons who are hearing or speech impaired may use the Florida Relay System by dialing 711.

Participation by Webconference (not intended for Committee Members): Using a computer or smartphone, register at <https://attendee.gotowebinar.com/register/4839995664325364054>. After the registration is completed, a confirmation will be emailed containing instructions for joining the webconference. Comments may be provided through the webconference chatbox during the meeting.

Written and Telephone Comments: Comment by email to TPOAdmin@stlucieco.org; by regular mail to the St. Lucie TPO, 466 SW Port St. Lucie Boulevard, Suite 111, Port St. Lucie, Florida 34953; or call 772-462-1593 until 1:00 pm on May 19, 2026.

AGENDA

1. **Call to Order**
2. **Roll Call**
3. **Comments from the Public**
4. **Approval of Agenda**
5. **Approval of Meeting Summary**
 - *March 24, 2026 Regular Meeting*
6. **Action Items**
 - 6a. **Draft FY 2026/27 – FY 2030/31 Transportation Improvement Program (TIP):** Review of the draft FY 2026/27 – FY 2030/31 TIP.

***Action:** Recommend adoption of the draft FY 2026/27 – FY 2030/31 TIP, recommend adoption with conditions, or do not recommend adoption.*

- 6b. Oxbow Eco-Center Pedestrian/Bicycle Link Connector Feasibility Study:** Review of the draft Feasibility Study of a pedestrian/bicycle link across the North Fork of the St. Lucie River connecting the Oxbow Eco-Center to the Citrus Hammock Preserve.

Action: *Recommend acceptance of the Feasibility Study, recommend acceptance with conditions, or do not recommend acceptance.*

- 6c. St. Lucie Advanced Transportation Management System (ATMS) Master Plan Update:** Review of the draft St. Lucie ATMS Master Plan Update.

Action: *Recommend adoption of the draft St. Lucie ATMS Master Plan Update, recommend adoption with conditions, or do not recommend adoption.*

- 6d. 2026/27 List of Priority Projects (LOPP):** Review of the draft LOPP for 2026/27 for the St. Lucie TPO.

Action: *Recommend adoption of the draft 2026/27 LOPP, recommend adoption with conditions, or do not recommend adoption.*

7. Recommendations/Comments by Members

8. Staff Comments

- 9. Next Meeting:** The next St. Lucie TPO TAC meeting is a regular meeting scheduled for 1:30 pm on Tuesday, July 21, 2026.

10. Adjourn

NOTICES

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Items not included on the agenda may also be heard in consideration of the best interests of the public's health, safety, welfare, and as necessary to protect every person's right of access. If any person decides to appeal any decision made by the St. Lucie TPO Advisory Committees with respect to any matter considered at a meeting, that person shall need a record of the proceedings, and for such a purpose, that person may need to ensure that a verbatim record of the proceedings is made which includes the testimony and evidence upon which the appeal is to be based.

Kreyol Ayisyen: Si ou ta renmen resevwa enfòmasyon sa a nan lang Kreyòl Aysiyen, tanpri rele nimewo 772-462-1593.

Español: Si usted desea recibir esta información en español, por favor llame al 772-462-1593.

BICYCLE-PEDESTRIAN ADVISORY COMMITTEE (BPAC)

Regular Meeting

Thursday, May 21, 2026
3:00 pm

Public Participation / Accessibility

Participation in Person: Comments may be provided in person at the meeting. Persons who require special accommodations under the Americans with Disabilities Act (ADA) or persons who require translation services (free of charge) should contact the St. Lucie TPO at 772-462-1593 at least five days prior to the meeting. Persons who are hearing or speech impaired may use the Florida Relay System by dialing 711.

Participation by Webconference (not intended for Committee Members): Using a computer or smartphone, register at <https://attendee.gotowebinar.com/register/6109166334313719135>. After the registration is completed, a confirmation will be emailed containing instructions for joining the webconference. Comments may be provided through the webconference chatbox during the meeting.

Written and Telephone Comments: Comment by email to TPOAdmin@stlucieco.org; by regular mail to the St. Lucie TPO, 466 SW Port St. Lucie Boulevard, Suite 111, Port St. Lucie, Florida 34953; or call 772-462-1593 until 2:30 pm on May 21, 2026.

AGENDA

1. **Call to Order**
2. **Roll Call**
3. **Comments from the Public**
4. **Approval of Agenda**
5. **Approval of Meeting Summary**
 - *March 19, 2026 Regular Meeting*
6. **Action Items**
 - 6a. **Draft FY 2026/27 – FY 2030/31 Transportation Improvement Program (TIP):** Review of the draft FY 2026/27 – FY 2030/31 TIP.

Action: *Recommend adoption of the draft FY 2026/27 – FY 2030/31 TIP, recommend adoption with conditions, or do not recommend adoption.*

- 6b. Oxbow Eco-Center Pedestrian/Bicycle Link Connector Feasibility Study:** Review of the draft Feasibility Study of a pedestrian/bicycle link across the North Fork of the St. Lucie River connecting the Oxbow Eco-Center to the Citrus Hammock Preserve.

Action: *Recommend acceptance of the Feasibility Study, recommend acceptance with conditions, or do not recommend acceptance.*

- 6c. St. Lucie Advanced Transportation Management System (ATMS) Master Plan Update:** Review of the draft St. Lucie ATMS Master Plan Update.

Action: *Recommend adoption of the draft St. Lucie ATMS Master Plan Update, recommend adoption with conditions, or do not recommend adoption.*

- 6d. 2026/27 List of Priority Projects (LOPP):** Review of the draft LOPP for 2026/27 for the St. Lucie TPO.

Action: *Recommend adoption of the draft 2026/27 LOPP, recommend adoption with conditions, or do not recommend adoption.*

7. Recommendations/Comments by Members

8. Staff Comments

- 9. Next Meeting:** The next St. Lucie TPO BPAC meeting is a regular meeting scheduled for 3:00 pm on Thursday, July 23, 2026.

10. Adjourn

NOTICES

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Items not included on the agenda may also be heard in consideration of the best interests of the public's health, safety, welfare, and as necessary to protect every person's right of access. If any person decides to appeal any decision made by the St. Lucie TPO Advisory Committees with respect to any matter considered at a meeting, that person shall need a record of the proceedings, and for such a purpose, that person may need to ensure that a verbatim record of the proceedings is made which includes the testimony and evidence upon which the appeal is to be based.

Kreyol Ayisyen: Si ou ta renmen resevwa enfòmasyon sa a nan lang Kreyòl Aysiyen, tanpri rele nimewo 772-462-1593.

Español: Si usted desea recibir esta información en español, por favor llame al 772-462-1593.

REGULAR BOARD MEETING

Wednesday, June 3, 2026
2:00 pm

Public Participation / Accessibility

Participation in Person: Public comments may be provided in person at the meeting. Persons who require special accommodations under the Americans with Disabilities Act (ADA) or persons who require translation services (free of charge) should contact the St. Lucie TPO at 772-462-1593 at least five days prior to the meeting. Persons who are hearing or speech impaired may use the Florida Relay System by dialing 711.

Participation by Webconference: Using a computer or smartphone, register at <https://attendee.gotowebinar.com/register/1247744942283705430>. After the registration is completed, a confirmation will be emailed containing instructions for joining the webconference. Public comments may be provided through the webconference chatbox during the meeting.

Written and Telephone Comments: Comment by email to TPOAdmin@stlucieco.org; by regular mail to the St. Lucie TPO, 466 SW Port St. Lucie Boulevard, Suite 111, Port St. Lucie, Florida 34953; or call 772-462-1593 until 1:00 pm on June 3, 2026.

AGENDA

1. **Call to Order**
2. **Pledge of Allegiance**
3. **Roll Call**
4. **Comments from the Public**
5. **Comments from Advisory Committee Members (TAC/CAC/BPAC)**
6. **Approval of Agenda**
7. **Approval of Meeting Summary**
 - *April 1, 2026 Regular Board Meeting*
8. **Consent Agenda**
 - 8a. **Appointment to the Citizens Advisory Committee (CAC):**
Appointment to the CAC to fill a vacancy.

Action: *Appoint or do not appoint.*

- 8b. Resolution 26-02 for a Transportation Disadvantaged (TD) Planning Grant Application:** Adoption of Resolution 26-02 authorizing the execution of a TD Planning Grant Application for FY 2026/27.

Action: Adopt or do not adopt.

9. Action Items

- 9a. Draft FY 2026/27 – FY 2030/31 Transportation Improvement Program (TIP):** Adoption of the draft FY 2026/27 – FY 2030/31 TIP.

Action: Adopt the draft FY 2026/27 – FY 2030/31 TIP, adopt with conditions, or do not adopt.

- 9b. Oxbow Eco-Center Pedestrian/Bicycle Link Connector Feasibility Study:** Review of the draft Feasibility Study of a pedestrian/bicycle link across the North Fork of the St. Lucie River connecting the Oxbow Eco-Center to the Citrus Hammock Preserve.

Action: Accept the Study, accept with conditions, or do not accept.

- 9c. St. Lucie Advanced Transportation Management System (ATMS) Master Plan Update:** Review of the draft St. Lucie ATMS Master Plan Update.

Action: Adopt the draft St. Lucie ATMS Master Plan Update, adopt with conditions, or do not adopt.

- 9d. 2026/27 List of Priority Projects (LOPP):** Review of the draft LOPP for 2026/27 for the St. Lucie TPO.

Action: Adopt the 2026/27 LOPP, adopt with conditions, or do adopt.

- 9e. Mobility Data Subscription:** Approval of a one-year subscription for mobility data to be provided for use by the local agencies.

Action: Approve the one-year mobility data subscription, approve with conditions, or do not approve.

10. FDOT Comments

11. Recommendations/Comments by Members

12. TPO Staff Comments

- 13. Next Meeting:** The next St. Lucie TPO Board Meeting is a regular meeting scheduled for 2:00 pm on Wednesday, August 5, 2026.

14. Adjourn

NOTICES

The St. Lucie TPO satisfies the requirements of various nondiscrimination laws and regulations including Title VI of the Civil Rights Act of 1964. Public participation is welcome without regard to race, color, national origin, age, sex, religion, disability, income, or family status. Persons wishing to express their concerns about nondiscrimination should contact Marceia Lathou, the Title VI/ADA Coordinator of the St. Lucie TPO, at 772-462-1593 or via email at lathoum@stlucieco.org.

Items not included on the agenda may also be heard in consideration of the best interests of the public's health, safety, welfare, and as necessary to protect every person's right of access. If any person decides to appeal any decision made by the St. Lucie TPO with respect to any matter considered at this meeting, that person shall need a record of the proceedings, and for such a purpose, that person may need to ensure that a verbatim record of the proceedings is made which includes the testimony and evidence upon which the appeal is to be based.

Kreyòl Ayisyen: Si ou ta renmen resevwa enfòmasyon sa a nan lang Kreyòl Ayisyen, tanpri rele nimewo 772-462-1593.

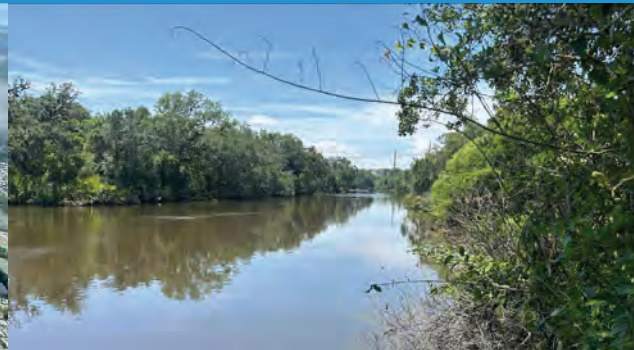
Español: Si usted desea recibir esta información en español, por favor llame al 772-462-1593.



St. Lucie Transportation
Planning
Organization

Oxbow Eco-Center Pedestrian/Bicycle Connector Link Feasibility Study

St. Lucie County TPO Committees & Board Meetings





St. Lucie

Transportation
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Agenda

01

Scope Review

02

Exisiting Conditions

03

Route Alternatives

04

Preferred Alternative

05

Questions/Comments





Scope

Task 1 - Project Management

Task 2 - Existing Conditions & Data
Collection

Task 3 - Public & Stakeholder
Involvement

Task 4 - Route Development & Report





Purpose & Need

- Identify **location** of pedestrian bridge for future route alignment connecting the Oxbow Center with Citrus Hammock Preserve.
- Preferred location should have the **least impacts** to natural resources, wetlands, and the community.
- Pedestrian bridge link to **enhance access and connectivity** to future greenways and trails of the North Fork St. Lucie River Trail and East Coast Greenway/SUN Trail.





Schedule

We Are Here

Oxbow Connector Feasibility Study									
	Jul 2025	Aug 2025	Sep 2025	Oct 2025	Nov 2025	Dec 2025	Apr 2026	May 2026	June 2026
Task 1 - Project Management	●		●	●		●	●		
Task 2 - Existing Conditions & Data Collection									
Task 3 - Public & Stakeholder Involvement			●	● ●	● ●	● ●	●	●	●
Task 4 - Route Development & Report						●		●	

Key

- = On-going Production
- = Meetings
- = Earth Day 2026
- = PM Meetings
- = Draft/Final Report



St. Lucie

Transportation
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Local Stakeholders

Stakeholders



State/Regional Stakeholders

Private
property
owners



Federal/National Stakeholders



**US Army Corps
of Engineers®**



North St. Lucie River Water Control District

PROVIDING DRAINAGE, FLOOD CONTROL AND WATER MANAGEMENT SINCE 1918



St. Lucie

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Stakeholder Meetings

- September 2025
 - SFWMD One-on-One
- October 2025
 - Group Stakeholder Meeting
 - FPL One-on-One
- November 2025
 - NSLWCD One-on-One
 - FDEP One-on-One
 - USACE One-on-One
- December 2025
 - SFWMD – St. Lucie TPO
 - USCG One-on-One
 - FIND One-on-One
- January 2026
 - City of PSL One-on-One



North St. Lucie River Water Control District
PROVIDING DRAINAGE, FLOOD CONTROL AND WATER MANAGEMENT SINCE 1918



**US Army Corps
of Engineers®**



- Discussions included:
 - Overview of the Project
 - Agency Role & Responsibilities
 - Agency Planned & Programmed Projects
 - Permit Requirements & Process (if any)
 - Guidelines & Considerations



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22nd Annual Earth Day Event at the Oxbow Eco-Center

- Spoke to over **100 community members**.
- Over **98% were supportive** of the proposed shared use pathway, bridge, and boardwalk.
- **Shade trees, water fountains, and restrooms** were the top three most requested features to include.
- Concerns included **electronic mobility devices, people not following the rules, litter, and environmental preservation**.



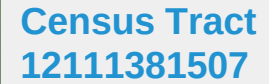


Existing Conditions



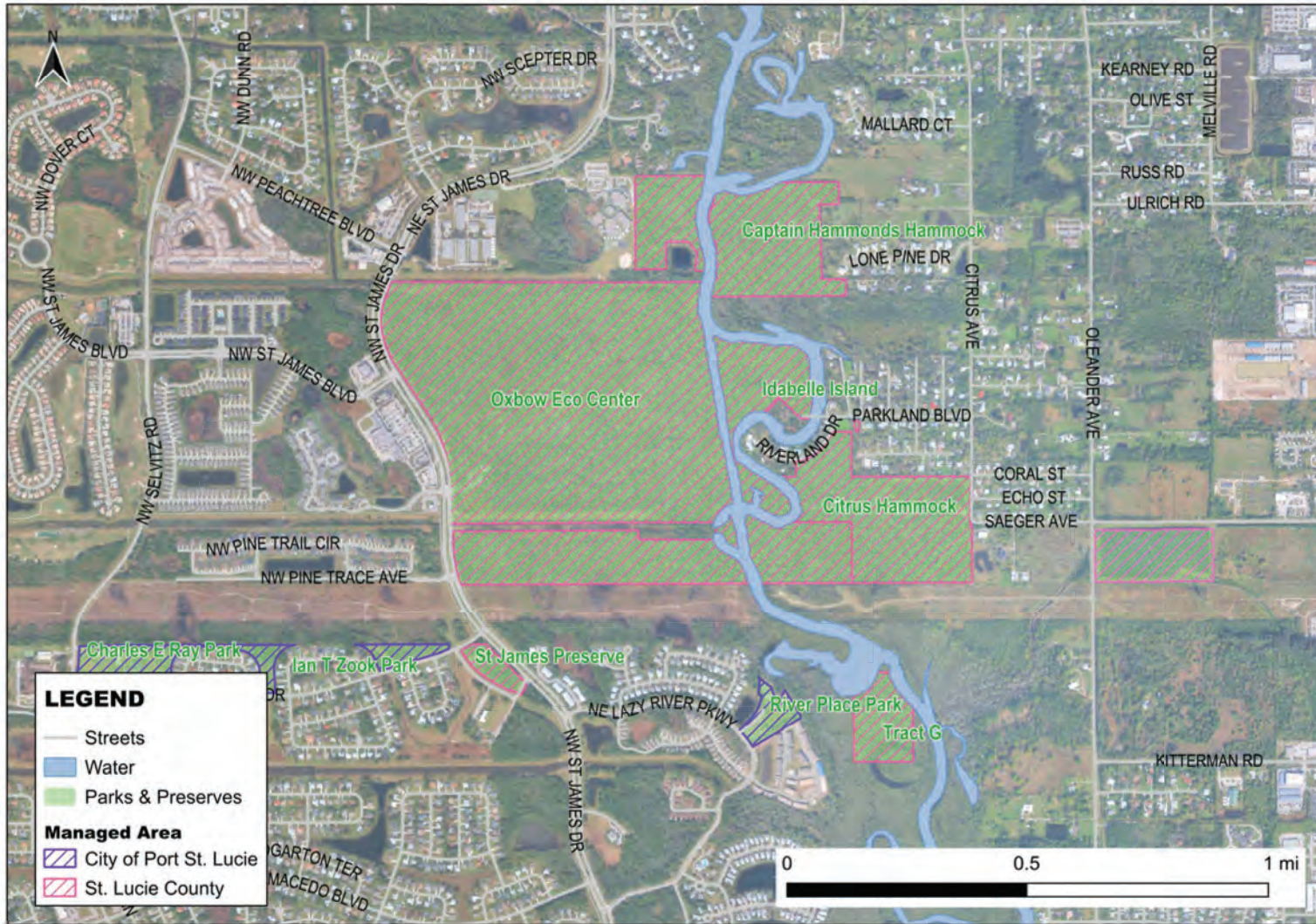
A person wearing a red helmet and a yellow and black cycling jersey is riding a mountain bike on a sand dune. The background is a clear blue sky with a few white clouds.

Source: 2020 Census and American Community Survey, 5-year Estimates 2023



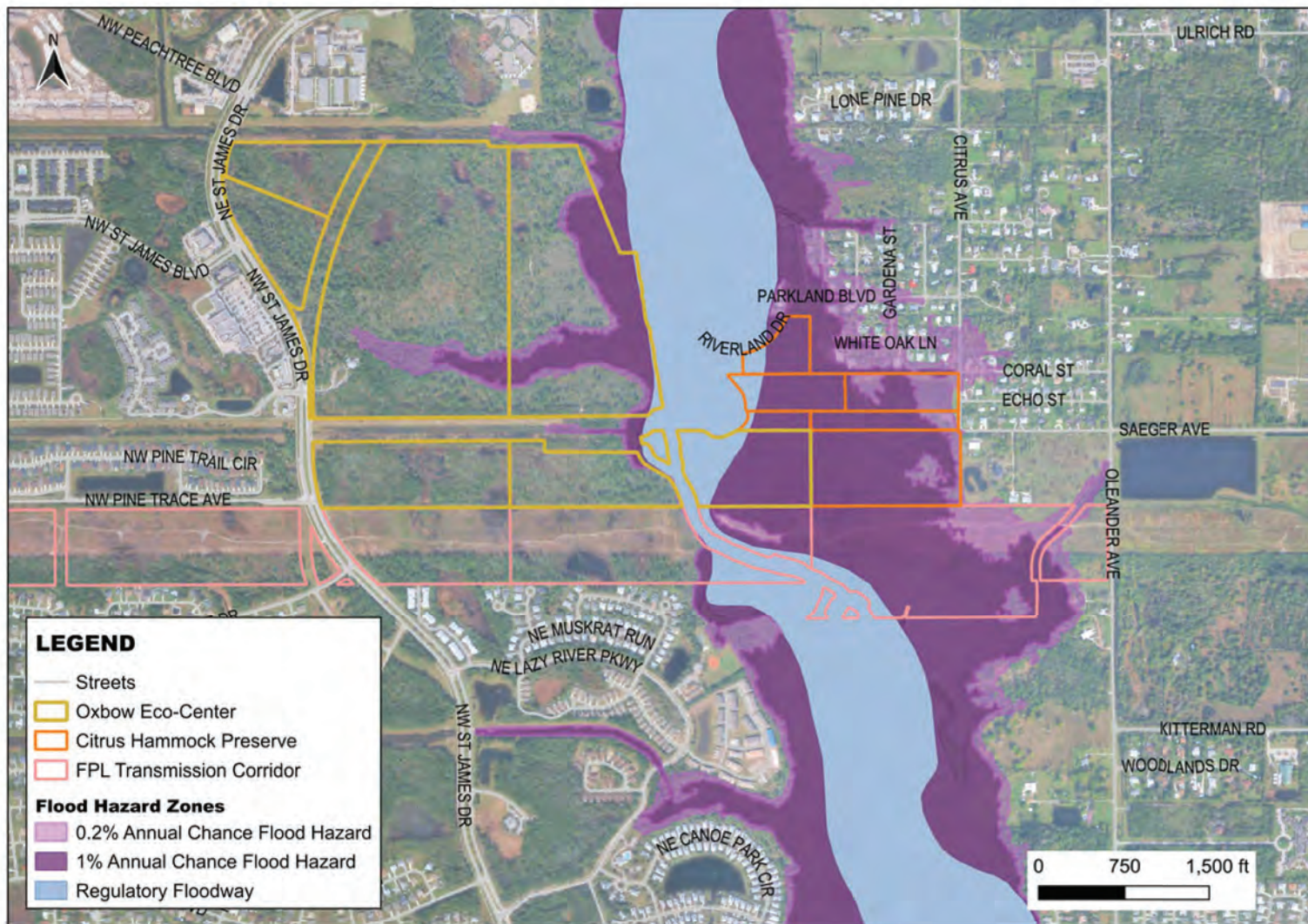
- **Population:** ~6,406 residents, over 4.9 sq mi (~1,314 people/sq mi)
- **Median age:** 57.6 years
- **Median household income:** \$71,120
- **Per-capita income:** \$46,243
- **Poverty rate:** 4%
- **Education:** 21.3% hold a bachelor's degree or higher
- **Transportation:** 25.1 minute travel time to work

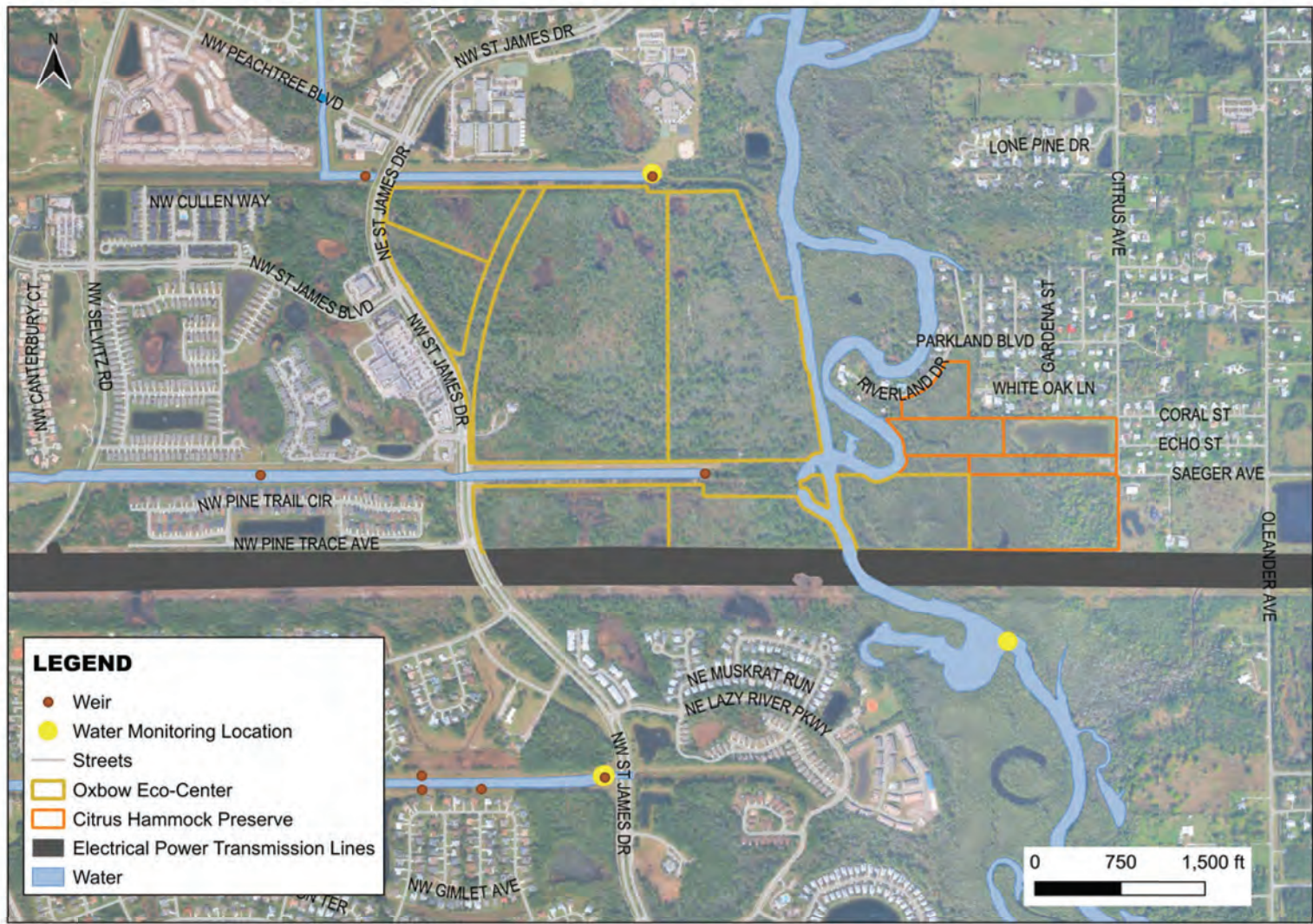
Managed Areas



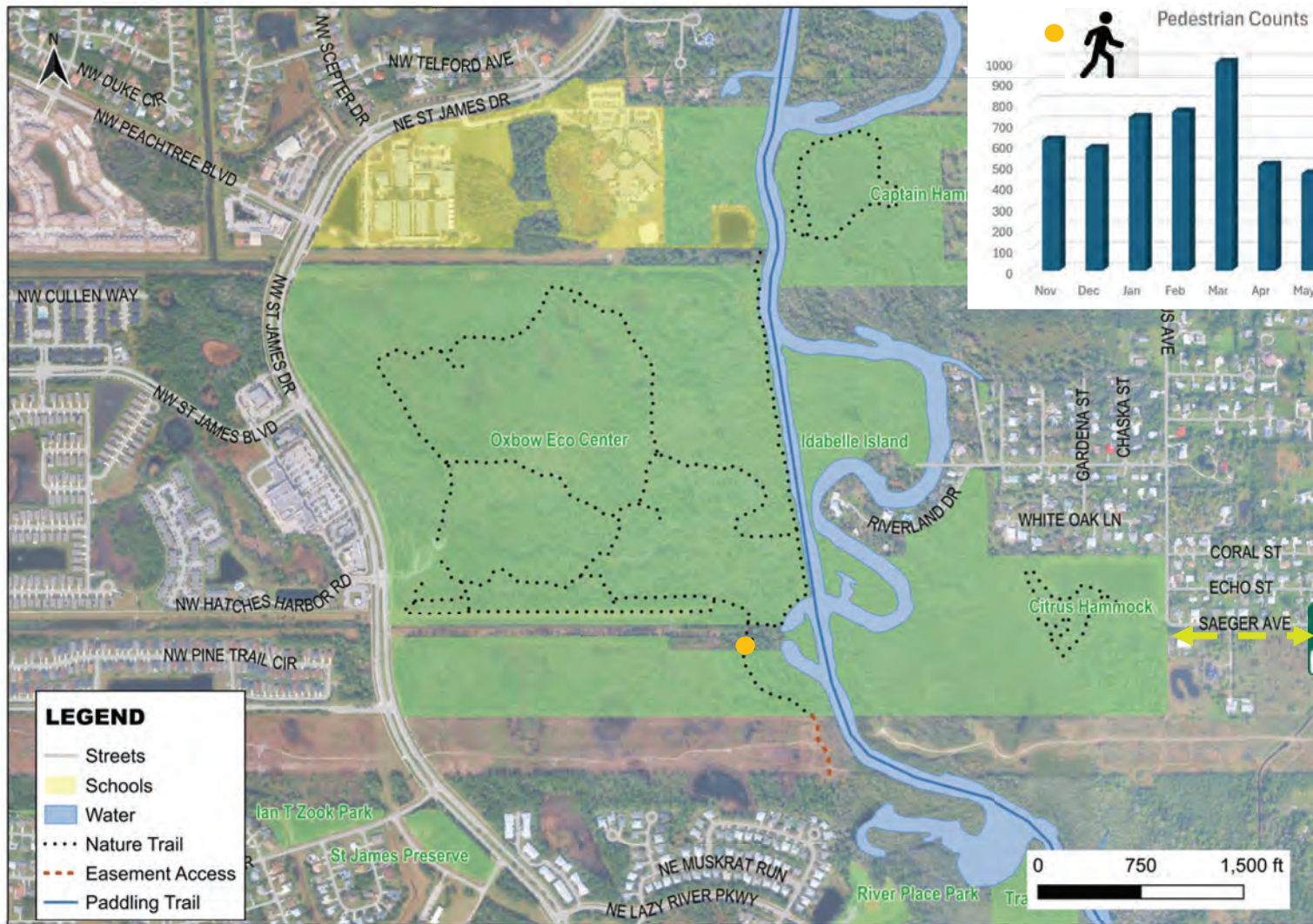


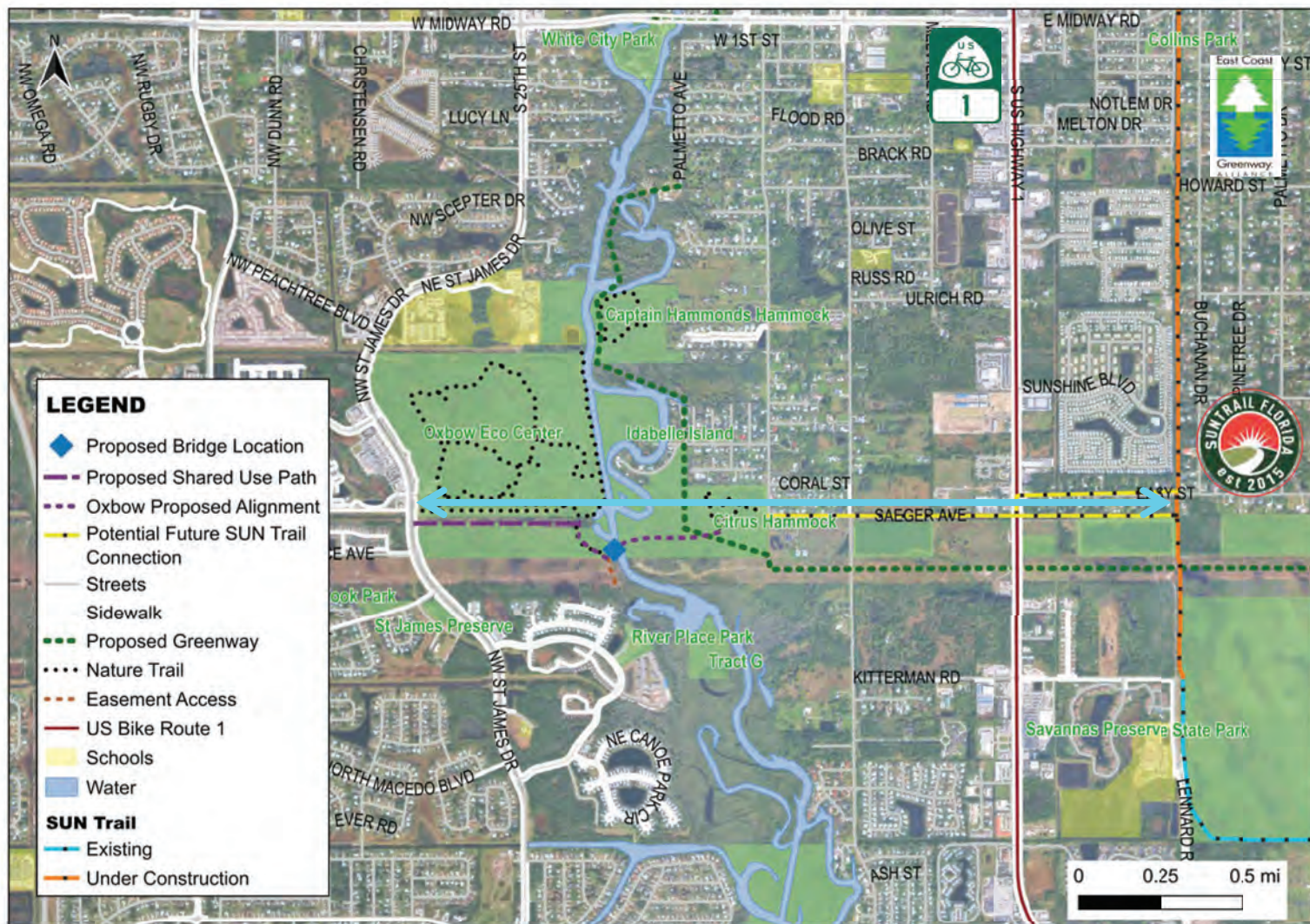
Flood Zones





Existing Recreational Trails

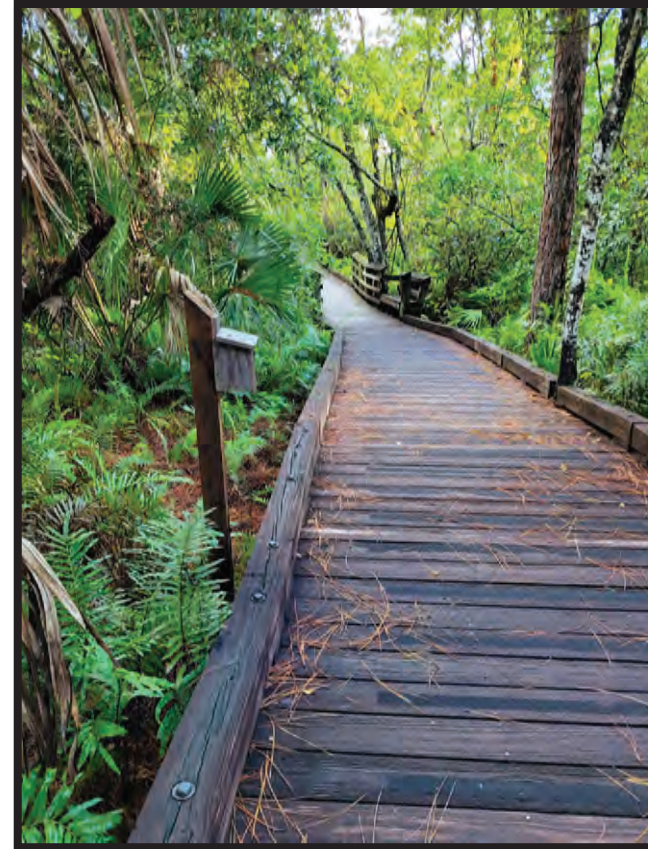






Summary of Existing Conditions

- Oxbow Eco-Center & Citrus Hammock **are managed by the County**. SFWMD owns Eco-Center lands.
- USACE has **planned a project** to rehydrate riverbanks north of the broken oxbow.
- County has an existing **easement agreement** with FPL for pedestrian access to/from Oxbow Center & River Place community.
- **USCG oversees** navigable waters and bridge permitting.
- **Minimum bridge height may be 12-feet**, further study needed.
- **Bridge specifications** would fall under AASHTO, FDOT, and Florida Building Code Standards.





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Proposed Route Alternatives





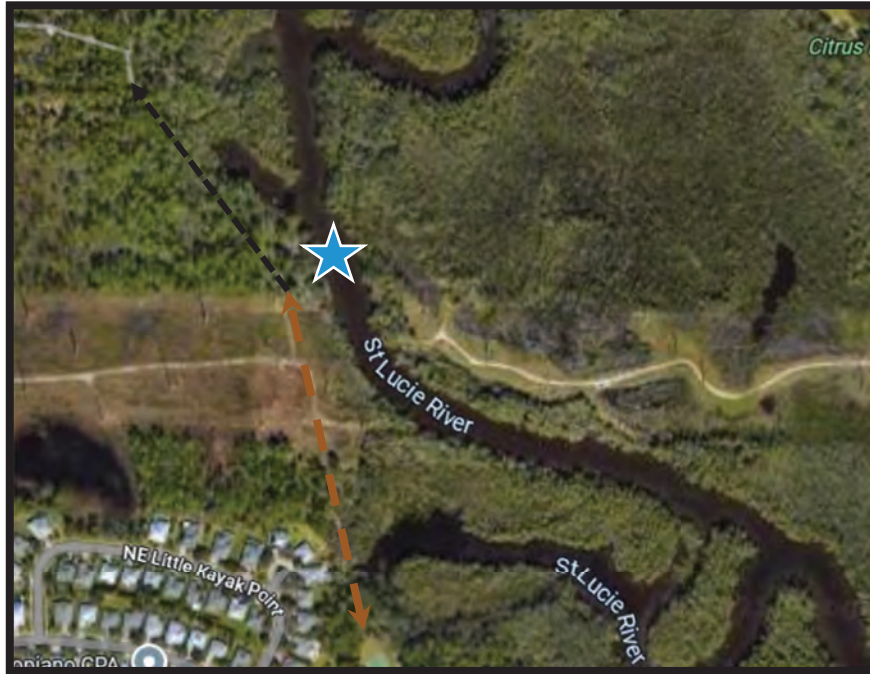
Task 4: Route Development & Report

- Location analysis
- Development of alternatives
- Select preferred alternative
- Develop typical sections
- Map preferred route with alternative alignment
- Environmental review and fatal flaws
- Permit requirements of preferred alignment
- Cost estimate of preferred alignment
- Draft report
- Final report





Alternative 1 – SFWMD/Oxbow



Factor	Pros	Cons
Ownership & Access	Public ownership; county has 99-year lease.	SFWMD owns land; subject to conservation covenants and regulatory limits. Property is part of CERP.
User Experience	Scenic, immersive natural experience; ties into Eco-Center programs.	Bicycles currently not allowed on Oxbow trails; possible policy conflict.
Environmental Impact	Opportunity to highlight wetlands and habitats through education.	Sensitive habitats (wetlands, snail kite, wood stork); mitigation most likely required.
Construction Feasibility	Synergy with planned Eco-Center improvements (boardwalk, new building).	Bridge will require longer span to meet ADA requirements. Boardwalk needed to connect into Citrus Hammock. Limited space for construction equipment/staging.
Connectivity	Direct link to Eco-Center facilities and Citrus Hammock Preserve, future Greenways & Trails. Bike Rike.	Less direct regional commuter connection; mainly recreational focus.
Maintenance	Eco-Center staff presence may support stewardship.	Boardwalks vulnerable to flooding, storm damage, and long-term costs. Bridge subject to maintenance.



Proposed Connector Link



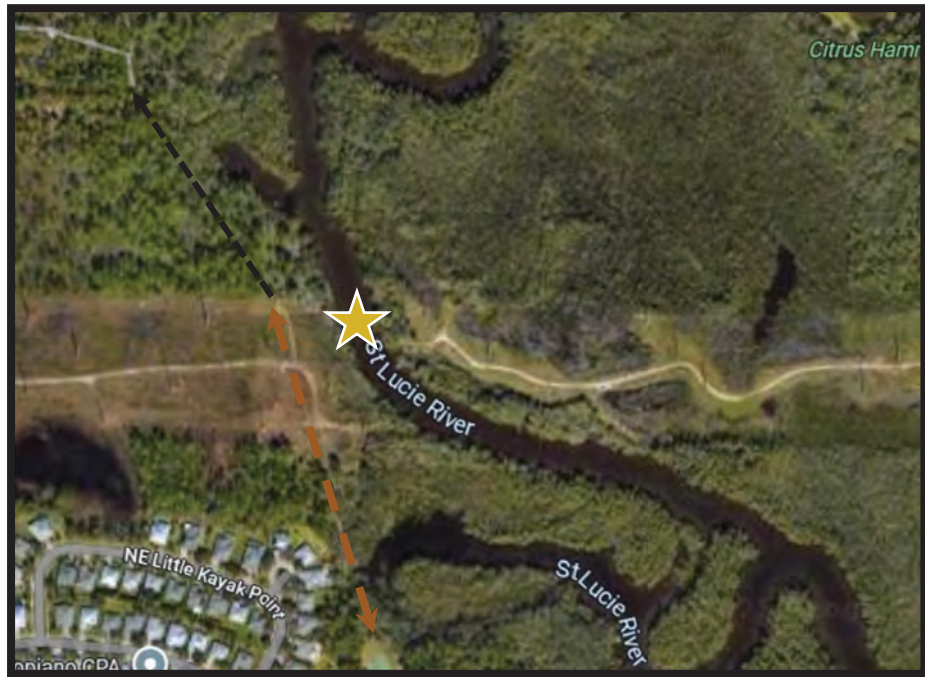
Existing Racoon Trail



Existing Pedestrian Easement/Pathway



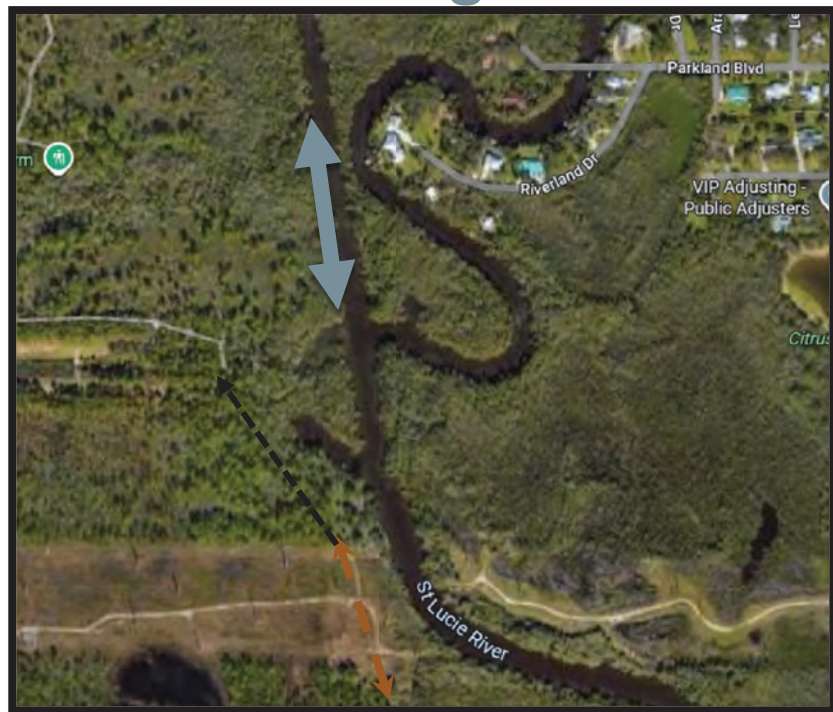
Alternative 2 – FPL Corridor



Factor	Pros	Cons
Ownership & Access	Uses existing FPL ROW; corridor already cleared with access roads.	Private property owned by FPL.
User Experience	Wide sightlines, open, safer feel; commuter-friendly alignment.	Less scenic; aesthetics impacted by power lines. Lack of shade/canopy.
Environmental Impact	Minimal; fewer wetlands/natural areas affected. Land is already cleared and stabilized.	Impacts (if any) would require mitigation.
Construction Feasibility	Surface is stabilized, at-grade trail is feasible, reduces need for boardwalk.	Staging and equipment access for construction will be challenging. Height limitations.
Connectivity	Strong tie to regional network (St. James, Oleander, ECG/SUN Trail).	Prohibited from utilizing existing access roads.
Maintenance	FPL maintains infrastructure, landscaping, and access road(s).	County would require access and maintenance agreement for trail, bridge, and any additional infrastructure.



Alternative 3 – Oxbow North Alignment



Proposed Connector Link



Existing Racoon Trail



Existing Pedestrian Easement/Pathway



Factor	Pros	Cons
Ownership & Access	Publicly owned and operated.	SFWMD is the owner, Idabelle Island is primarily wetlands. Property is under CERP status.
User Experience	Scenic, immersive natural experience and wildlife viewing; direct connection to Oxbow Eco-Center.	Bicycles are not permitted within Oxbow Trails.
Environmental Impact	Opportunity to highlight wetlands and habitats.	Impacts anticipated to wetlands, Idabelle Island, mitigation is expected.
Construction Feasibility	Potential synergy with Oxbow improvements and USACE wetland rehydration project.	A very long bridge or two bridges would be required in addition to boardwalks on both sides of the river. Construction would most likely occur on the River.
Connectivity	Direct link to preserves, existing trails, future trails, and potential link to SUN Trail & Bike Route 1.	More recreational than commuter-oriented.
Maintenance	Oxbow Eco-Center may support stewardship and monitoring.	Boardwalk structures are vulnerable to flooding, storm damage, and long-term maintenance. Bridge is also subject to maintenance.



Summary of Alignment Findings

Preferred Alignment Goals:

- (1) Use county-owned preserve land to minimize acquisition;
- (2) Limit disturbance of critical high-quality habitat;
- (3) Provide direct, high-value connections between the two preserves; and
- (4) Avoid fragmenting managed parcels or crossing private parcels unnecessarily.

Alternative 1 (Oxbow/SFWMD Route): Strongest for scenic, educational, and conservation-based user experience, but may be moderately constrained by permitting, environmental impacts, and construction complexity.

Alternative 2 (FPL Utility Corridor): More practical for construction and long-term maintenance, stronger for regional commuting connectivity, but FPL's height restrictions make this location not feasible.

Alternative 3 (North of Broken Oxbow): Eliminated early due to complexities and greater environmental impacts.



Design, Permits, and Cost Estimates





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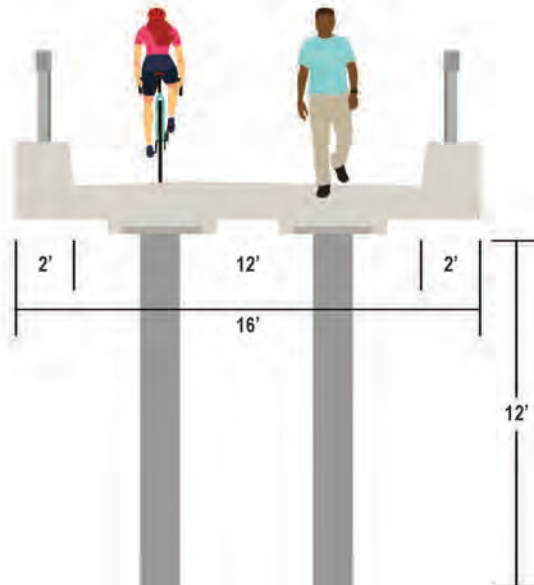
Design

- AASHTO for bridge design
 - Clear width typically 10 to 12 feet
 - Railing height is 54 inches for bikes and peds
 - If the bridge is wider than 7-feet, it must support a maintenance vehicle.
- FDOT *Structures Design Guidelines* is for Florida specific environmental conditions.
- St. Lucie County LDC for connectivity to planned pedestrian network
- 2023 Florida Building Code – Accessibility and ADA for slope, handrails, and surface texture.
- USCG coordination for vertical clearance requirements.
 - Assuming a minimum 12-feet due to existing Prima Vista Blvd bridge height.





Typical Section – Bicycle/Pedestrian Bridge

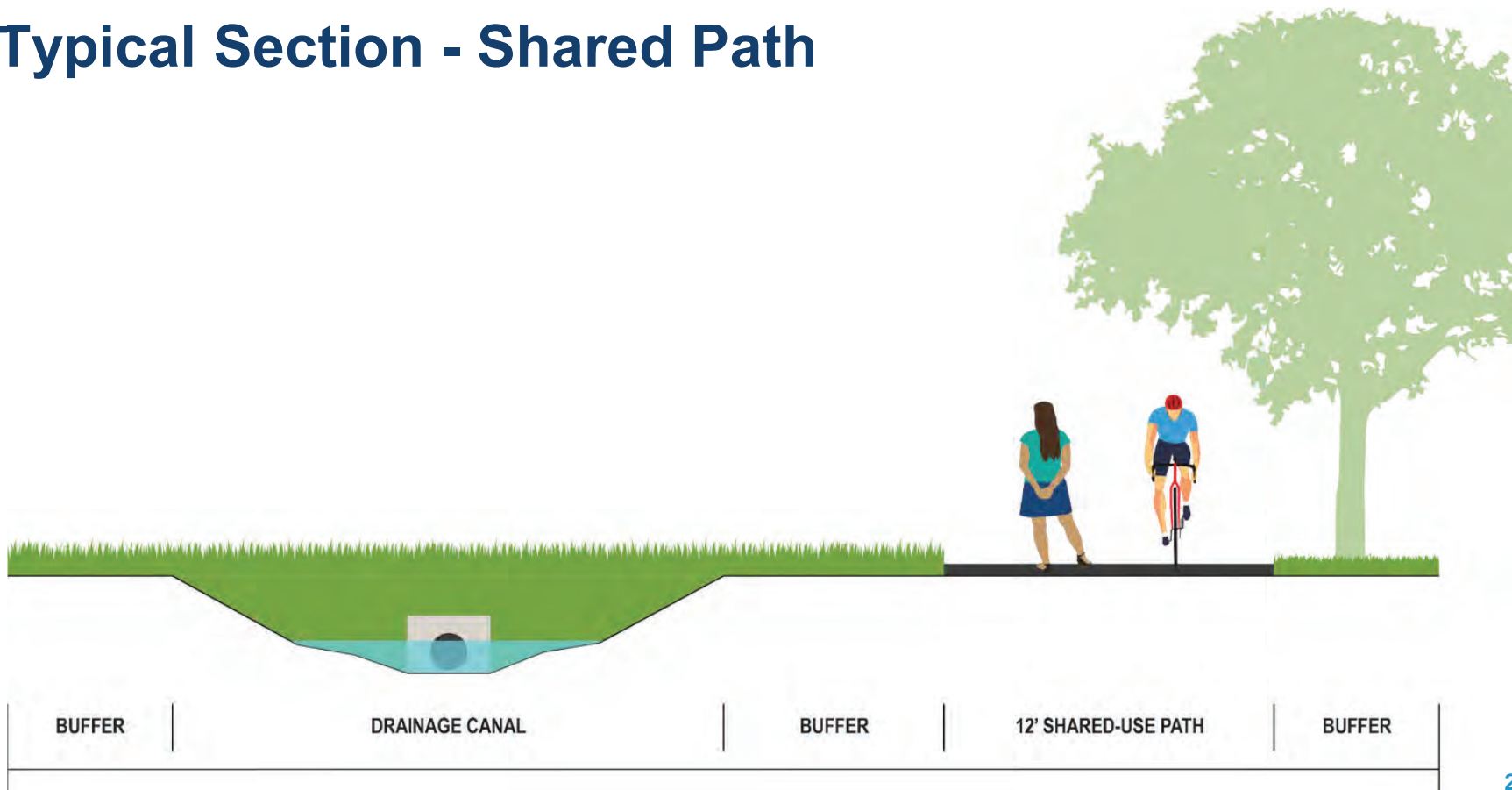




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Typical Section - Shared Path





St. Lucie

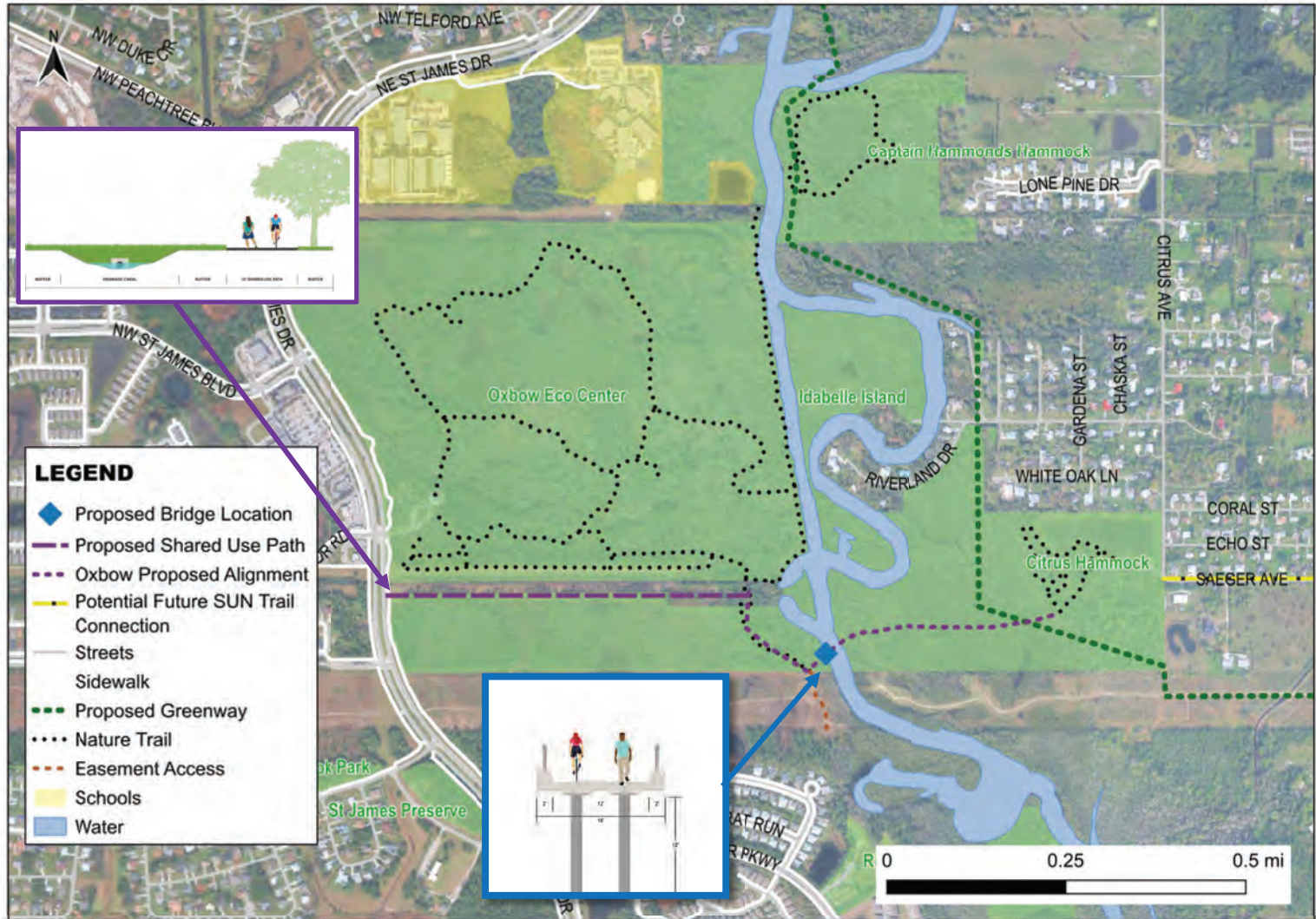
**Transportation
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Permits

- Pre-application Meeting is Recommended
- Bridge Permit Application Guide with USCG
 - Navigation Impact Report (NIR)
 - Environmental Documentation (NEPA)
 - Plan Sheets
- Environmental Resource Permit (ERP)
 - St. Lucie County would be the permit sponsor since SFWMD owns the property.
 - Will trip a Section 401 and 408 Review Process (NEPA).
 - Includes FDEP, USACE, and FWC in review process.
 - Mitigation will be required for impacts to wetlands and protected species.
- Right of Way Occupancy Permit
 - Filed with SFWMD since they are the property owner.
- Local Permit
 - ROW and structures permit filed with City of Port St. Lucie for adherence to the Florida Building Code.



Preferred Alternative





Cost Estimate

- **Bicycle/Pedestrian Bridge: \$1.75M - \$2.95M**
 - Includes bridge superstructure, substructure/foundations, and mobilization.
- **Canal 106 SUP: \$172K - \$292K**
 - Includes clearing/grubbing, earthwork, subbase, asphalt and mobilization.
- **Citrus Hammack Boardwalk: \$3M - \$5M**
 - Price reflects composite or concrete options and includes construction and handrails.
 - Observation deck or bump-outs can add \$25 - \$45k per area.
 - Lighting can add \$150k - \$250k.
- **Total between \$5 million - \$8 million**
- Report includes cost estimates for traffic calming, amenities, and trailheads.





St. Lucie

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Questions / Open Discussion

CONTACT INFORMATION:

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TPO Project Manager

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772-462-1533

Christina Fermin, AICP

MARLIN Project Manager

cfermin@marlinengineering.com

954-870-5064



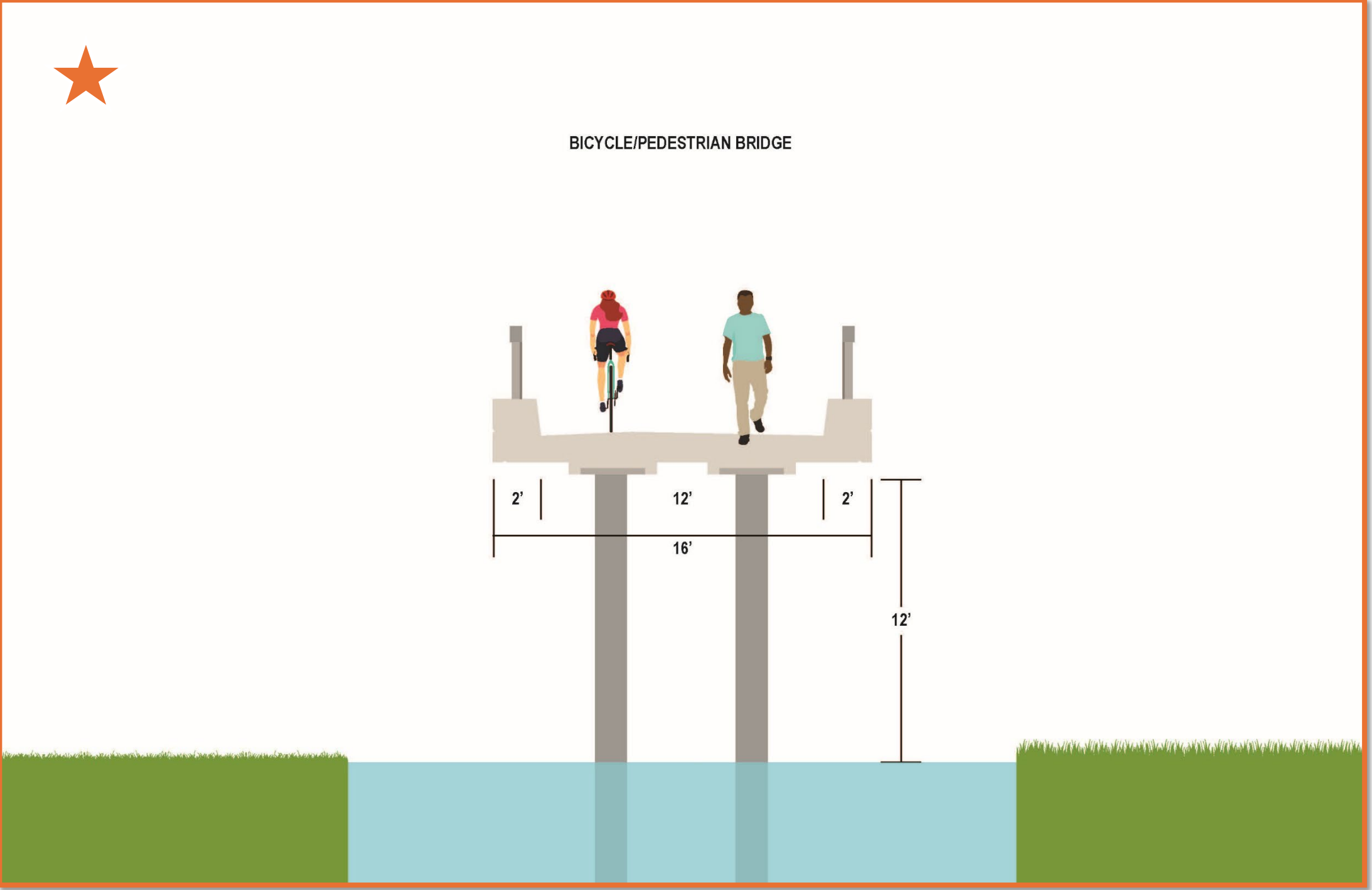
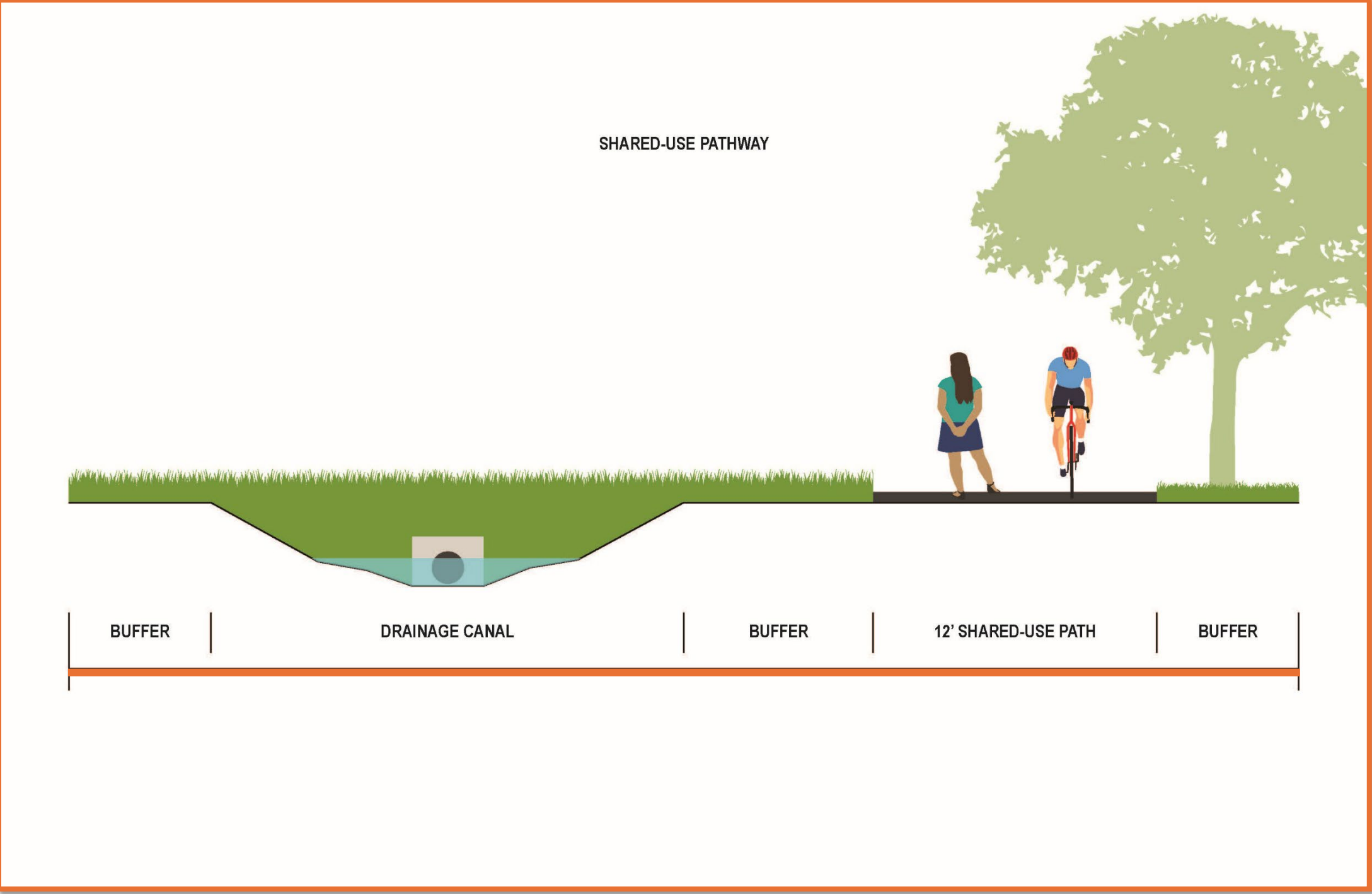
Appendix C.

Earth Day Materials & Feedback

Oxbow Pedestrian/Bicycle Bridge Connection Project

ABOUT THE PROJECT:

The Oxbow Eco-Center and adjacent aquatic preserve represent one of St. Lucie County's premier and unique natural amenities, however connectivity across the river is currently limited. The St. Lucie Transportation Planning Organization (TPO) is researching the potential of a pedestrian/bicycle link connection from the Oxbow Eco-Center over the St. Lucie River east to the Citrus Hammock Preserve. The proposed connection would provide access to the future greenways of the North Fork St. Lucie River Trail and the East Coast Greenway/Shared Use Non-Motorized (SUN) Trail. Developing a safe and accessible pedestrian/bicycle connector between the Oxbow Eco-Center and Citrus Hammock Preserve would not only enhance local recreation and conservation education opportunities but also contribute to the broader statewide greenways and trails vision.



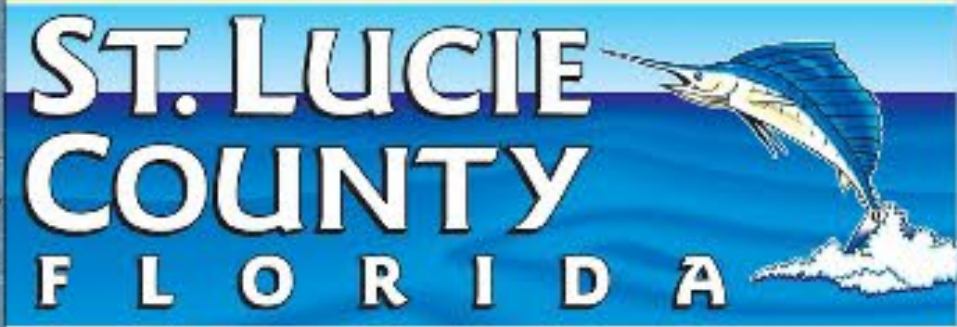
Do you support a pedestrian/bicycle connection over the North Fork St. Lucie River connecting the Oxbow Center with Citrus Hammock Preserve?

Yes

No

Comments/Suggestions/Concerns

St. Lucie River North Fork



	LAUNCH POINT	ADDRESS	MANAGER
1	Ten Mile Creek Preserve	3401 Gordy Rd. Fort Pierce, FL 34945	St. Lucie County Environmental Resources
2	Richard E. Becker Preserve	3398 Selvitz Rd. Fort Pierce, FL 34982	St. Lucie County Environmental Resources
3	White City Park	2081 W. Midway Rd. Fort Pierce, FL 34981	St. Lucie County Parks & Recreation
4	River Park Marina *	500 East Prima Vista Blvd. Port St. Lucie, FL 34983	St. Lucie County Parks & Recreation
5	Veteran's Park at Rivergate	2200 SE Veteran's Memorial Pkwy. Port St. Lucie, FL 34952	City of Port St. Lucie Parks & Recreation
6	C-24 Canal Park	500 SE Oakridge Dr. Port St. Lucie, FL 34984	City of Port St. Lucie Parks & Recreation

* Canoe/Kayak Rentals Available

DESTINATIONS NORTH TO SOUTH											
Ten Mile Creek Preserve		X	X	X	X	X	X		X	X	
Gordy Road Spillway		F	F		X		X		X		
George Lestrangle Preserve	X			X	X	X	X		X	X	
Richard E. Becker Preserve	X	X	X	X	X	X	X	F	F	X	F
DEP—Miller Tract	X			X		X	X		X		
Sweetwater Hammock Preserve		X		X		X	X		X		
White City Park	X		X		X	X	X	X	X		
Petravice Preserve	F	F	F	F	F	F	F	F	F		F
Capt. Hammond's Hammock Preserve	X			X	X	X	X				
Idabelle Island Preserve	X					X	X				
Oxbow Eco-Center	X			X		X	X	X	X		
Citrus Hammock Preserve	X					X	X				
River Place Park	X			X	X	X	X	X	X		
River Park Marina	X	X	X	X	X	X	X	X	X		
St. Lucie River State Park	X			X			X		X		
Veteran's Park at Rivergate	X		X		X	X	X	X	X		
Mud Cove Wood Stork Rookery							X				
Spruce Bluff Preserve		X		X			X		X	X	

F - Future Planned Amenity / X - Current Amenity



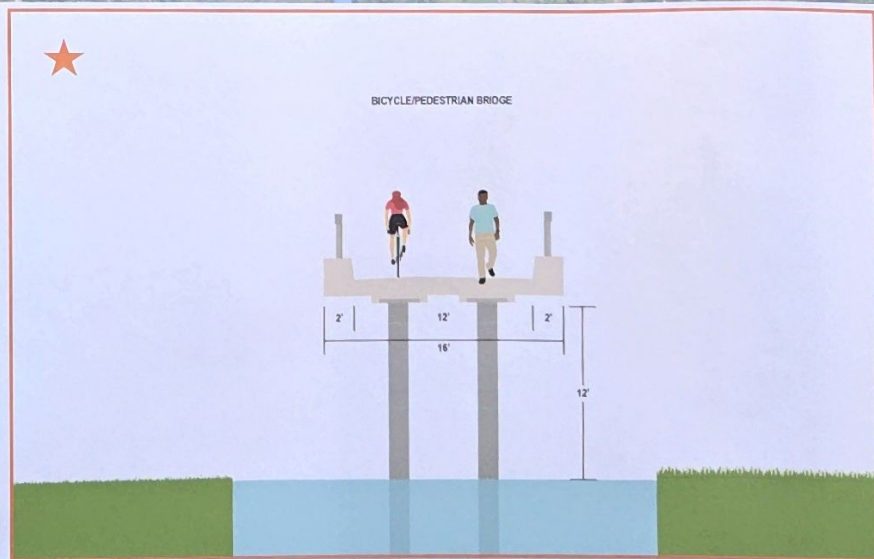
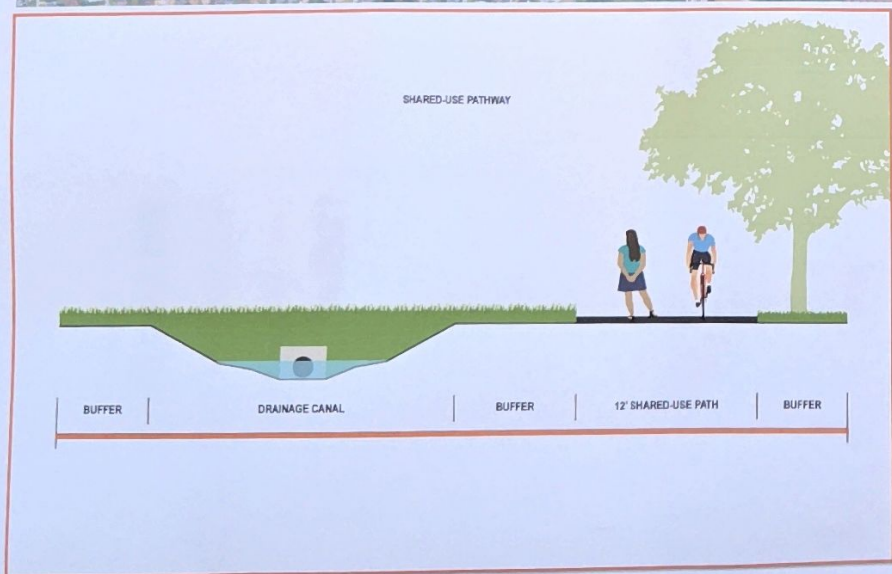


**Got an Idea for a Trail, Pathway, or Bridge? We want to hear from you!!!
BRING YOUR IDEAS HERE....**

Oxbow Pedestrian/Bicycle Bridge Connection Project

ABOUT THE PROJECT:

The Oxbow Eco-Center and adjacent aquatic preserve represent one of St. Lucie County's premier and unique natural amenities, however connectivity across the river is currently limited. The St. Lucie Transportation Planning Organization (TPO) is researching the potential of a pedestrian/bicycle link connection from the Oxbow Eco-Center over the St. Lucie River east to the Citrus Hammock Preserve. The proposed connection would provide access to the future greenways of the North Fork St. Lucie River Trail and the East Coast Greenway/Shared Use Non-Motorized (SUN) Trail. Developing a safe and accessible pedestrian/bicycle connector between the Oxbow Eco-Center and Citrus Hammock Preserve would not only enhance local recreation and conservation education opportunities but also contribute to the broader statewide greenways and trails vision.



Do you support a pedestrian/bicycle connection over the North Fork St. Lucie River connecting the Oxbow Center with Citrus Hammock Preserve?

Yes

No

Comments/Suggestions/Concerns

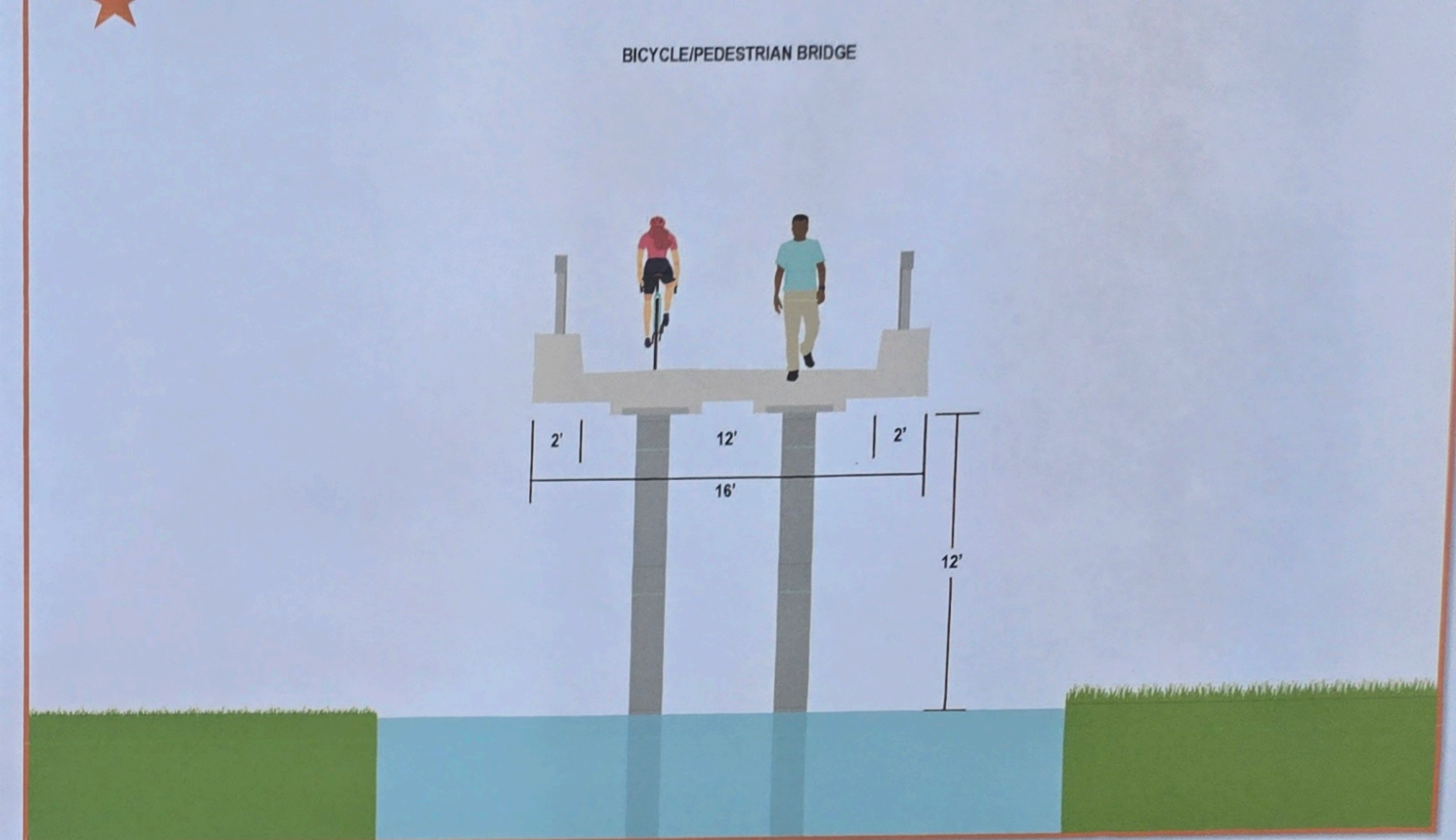
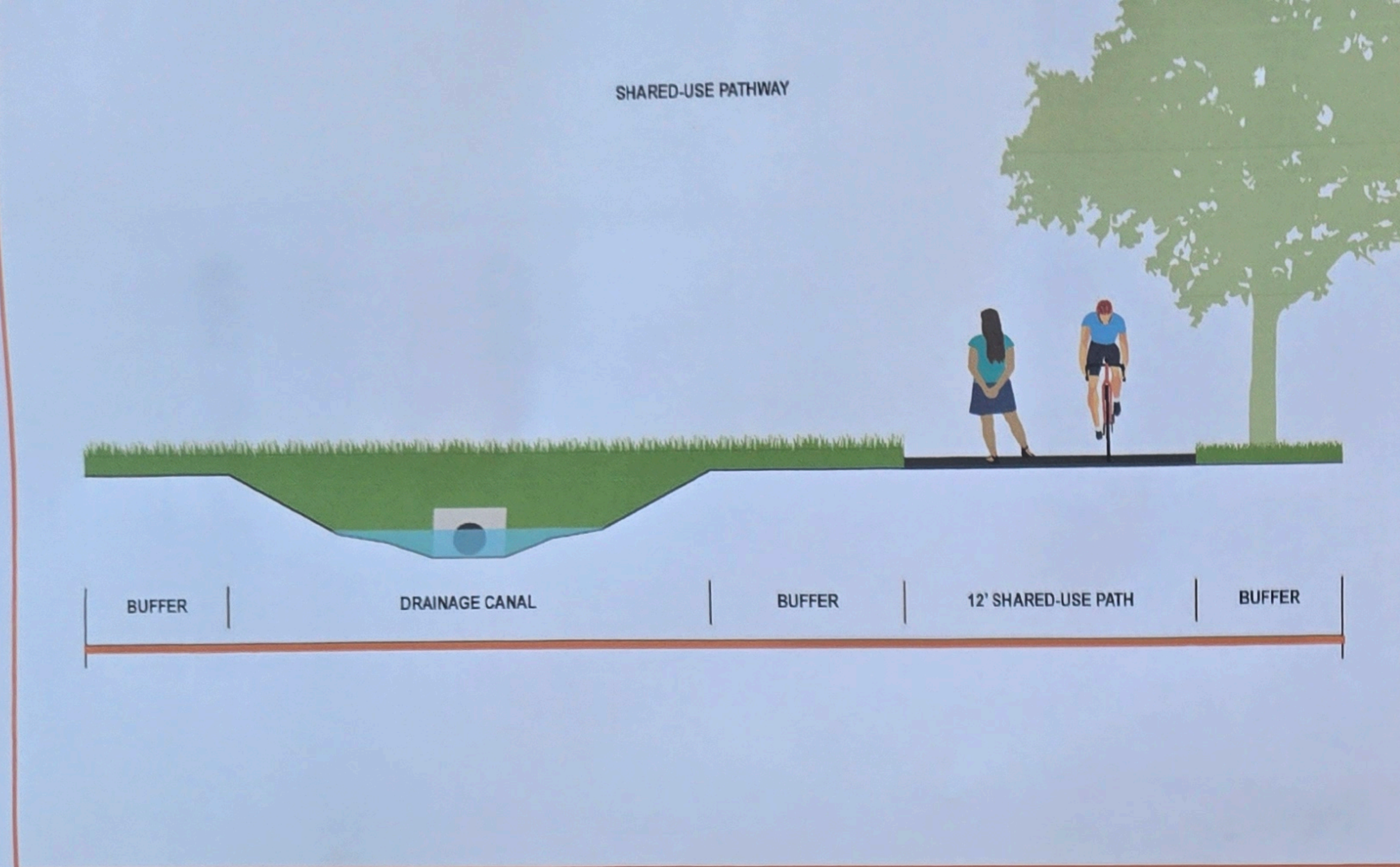
- Distance parking
- Restrooms
- Blue + red separation
- Trash cans

- Pet station
- Shade trees
- Seating
- water fountain

- fishing observation pier
- signage for natural habitats
- no e-bikes
- butterfly gardens
- pollinators
- bat houses
- birding

- security is important
- controlled access
- Emergency Response
- LIGHTING
- water

- environmentally friendly materials
- Environmentally friendly construction practices (noise pollution)



Do you support a pedestrian/bicycle connection over the North Fork St. Lucie River connecting the Oxbow Center with Citrus Hammock Preserve?

Yes

No

Comments/Suggestions/Concerns

- Distance markers ✓
- Restrooms ✓
- Blue + Red separation ✓
- Trash cans ✓
- Pet stations ✓
- Shade trees ✓
- Seating ✓
- Water fountains ✓
- Observation pier ✓
- Signage for natural habitats ✓
- No e-bikes ✓
- Butterfly gardens ✓
- Pollinators ✓
- Bat houses ✓
- Bicycling ✓
- Security is important ✓
- Controlled Access ✓
- Emergency Response ✓
- LIGHTING ✓
- environmentally friendly materials ✓
- Environmentally friendly construction practices (noise pollution) ✓
- Fishing Pier ✓



St. Lucie

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Comment Card

Name:

Resident

City:

Contact Info:

Comments:

Gaitland Pines is in
need of sidewalks.

Community needs a
better network for
walking & biking.



St. Lucie

**Transportation
Planning
Organization**

Comment Card

Name:

Resident

City:

Contact Info:

Comments:

More Mountain Bike trails!



St. Lucie

**Transportation
Planning
Organization**

Comment Card

Name:

City:

Contact Info:

Comments:

PSL Blvd + Paar
need bike lanes
-All types of riders-



St. Lucie

**Transportation
Planning
Organization**

Comment Card

Name: River Place Resident

City: _____

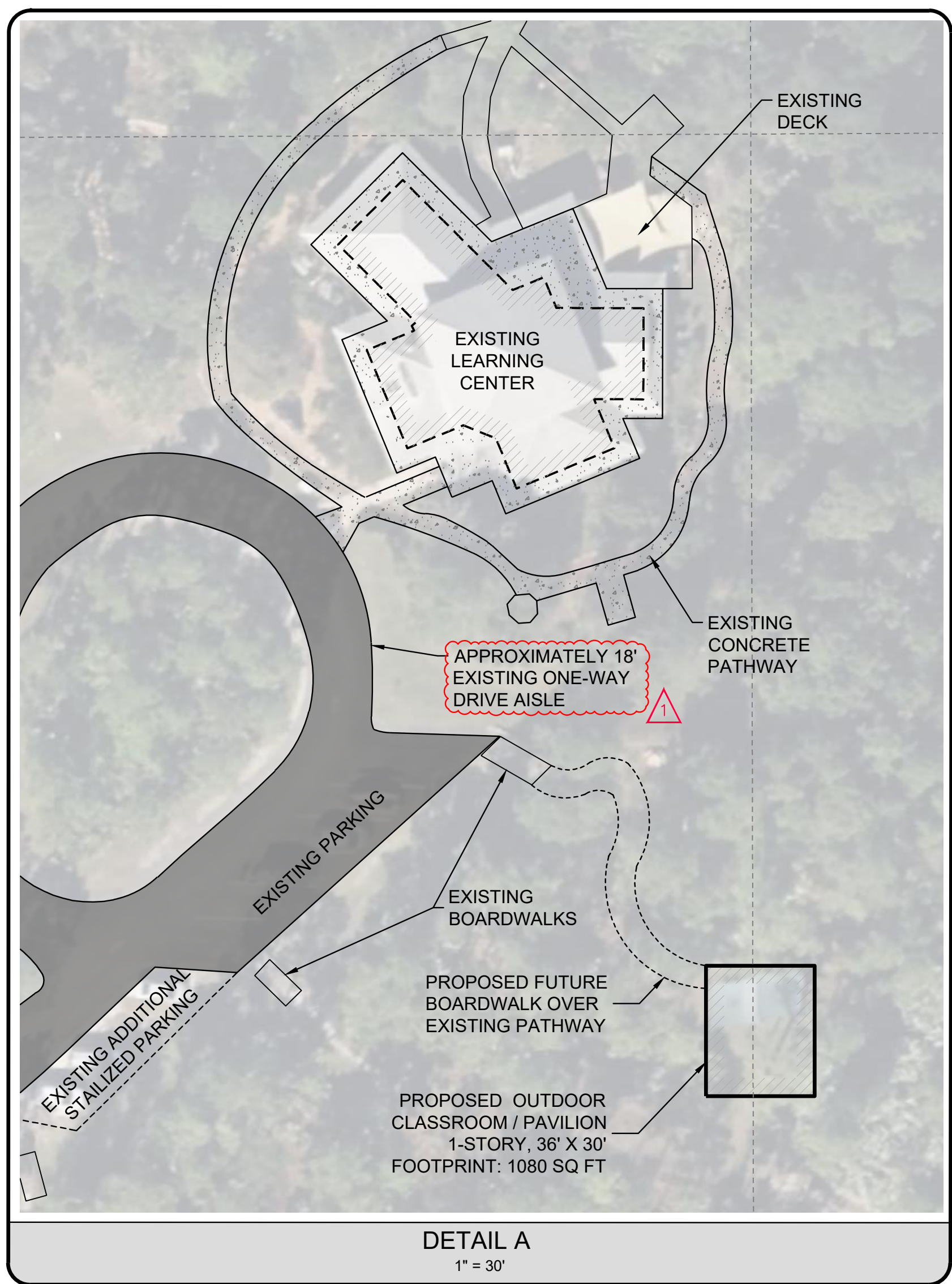
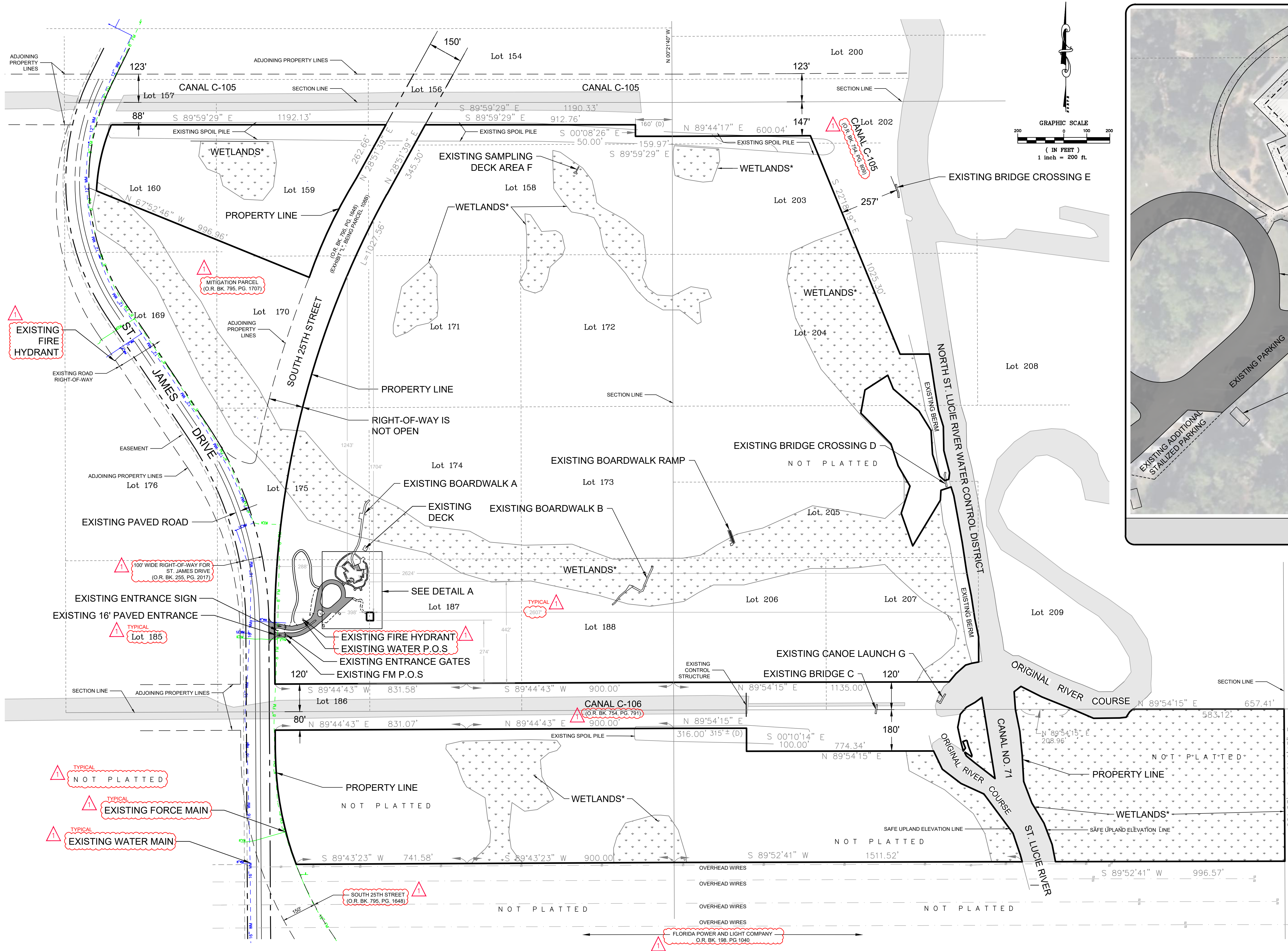
Contact Info: _____

Comments:

Concerns w/ e-Bikes
accessing communities.
Law enforcement has
issues w/ e-Bikes.
Also there has been issues
w/ poaching.
Dirt Bikes are using
SunTrail & causing
problems.

Appendix D.

Oxbow EcoCenter Site Plan



*NOTE: ALL WETLAND LOCATIONS AND BOUNDARIES ARE ESTIMATES TAKEN FROM THE NATIONAL WETLAND INVENTORY

APPROVED BY CITY OF PORT ST. LUCIE
SITE PLAN REVIEW COMMITTEE
CONDITIONS: YES ☐ NO ☒
DATE: 10/9/24

PSL #P98-26
PSL #P98-242
PSL #P00-185
PSL #P00-185-A1

PSLUSD #5004-04 ROBERTO CABRERA, P.E. FL. REG. NO. 91515

NOTES:
1) ALL ELEVATIONS AND BENCHMARKS SHOWN HEREON ARE RELATIVE TO THE NORTH AMERICAN VERTICAL DATUM (N.A.V.D.) OF 1988.

COMPUTER FILE REF.	FIELD BK./PG.



CULPEPPER & TERPENING INC
2980 SOUTH 25th STREET • FORT PIERCE, FLORIDA 34981
PHONE 772-464-3537 • FAX 772-464-9487 • www.ct-eng.com
STATE OF FLORIDA BOARD OF PROFESSIONAL ENGINEERS AUTHORIZATION NO. 4286

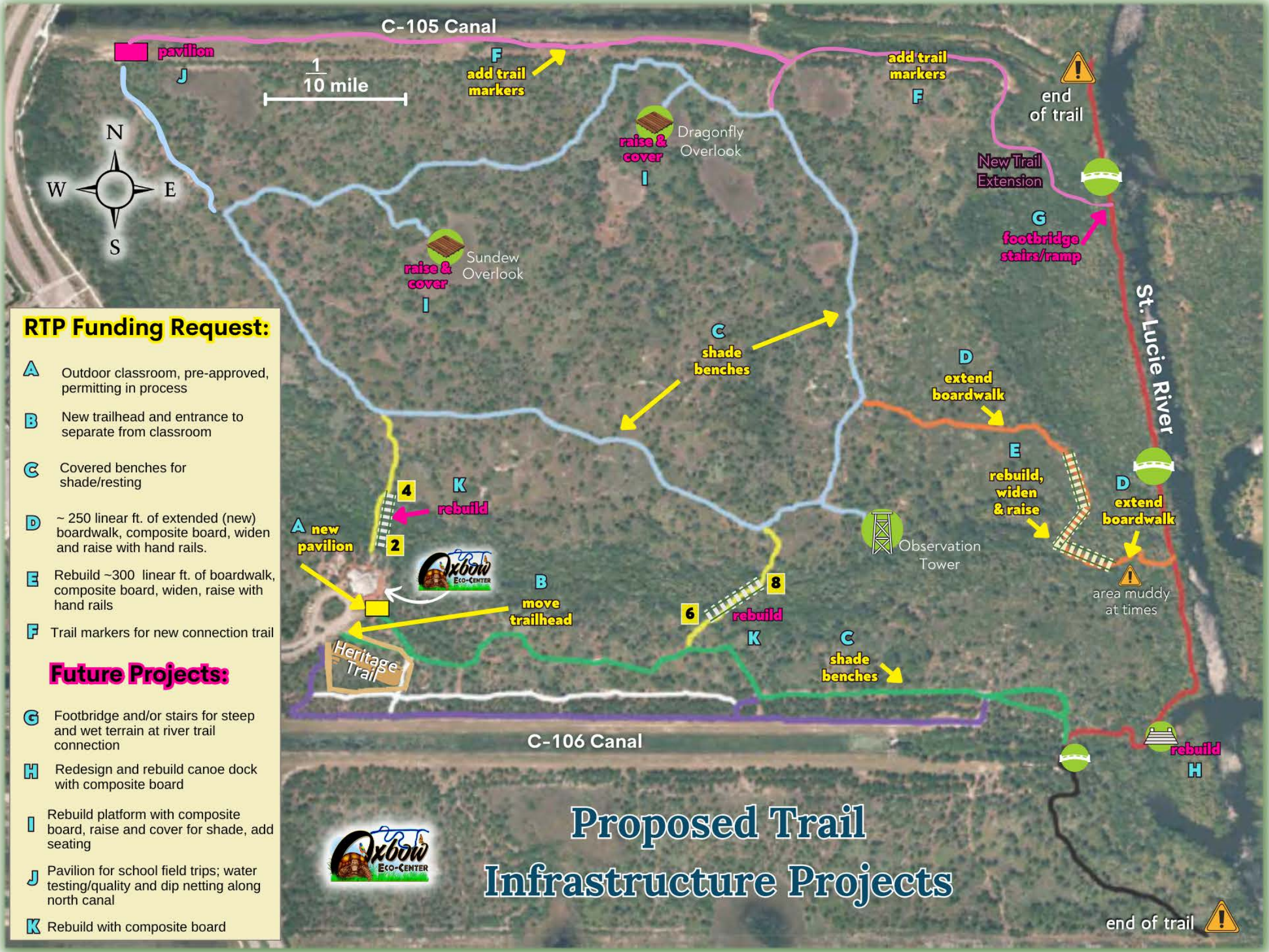
- REVISIONS -		BY	DATE
1	COMMENTS FROM P&Z, P.W., UTILITIES, & THE FIRE DISTRICT	AK	11/22/24
2	COMMENTS FROM P&Z	AK	12/10/24

DESIGNED	BY	DATE
CALCS.		
DRAWN	AK	8/15/24
DETAILED	AK	8/15/24
CHECKED	RC	8/19/24
APPROVED	RC	8/27/24

OXBOW ECO-CENTER & PRESERVE (FKA CHILDREN'S ENVIRONMENTAL LEARNING CENTER)

OVERALL SITE PLAN

DATE: 11/22/24
HORIZ. SCALE: 1"=200'
VERT. SCALE: N/A
JOB No. 24-050
SHEET 1 of 3



RTP Funding Request:

- A** Outdoor classroom, pre-approved, permitting in process
- B** New trailhead and entrance to separate from classroom
- C** Covered benches for shade/resting
- D** ~ 250 linear ft. of extended (new) boardwalk, composite board, widen and raise with hand rails.
- E** Rebuild ~300 linear ft. of boardwalk, composite board, widen, raise with hand rails
- F** Trail markers for new connection trail

Future Projects:

- G** Footbridge and/or stairs for steep and wet terrain at river trail connection
- H** Redesign and rebuild canoe dock with composite board
- I** Rebuild platform with composite board, raise and cover for shade, add seating
- J** Pavilion for school field trips; water testing/quality and dip netting along north canal
- K** Rebuild with composite board



Proposed Trail Infrastructure Projects

end of trail !

Appendix E.

FPL - County Easement Agreement

LICENSE AGREEMENT
(FPL License #0047-ED-1998)

THIS LICENSE AGREEMENT ("**License**") is made this 14 day of March, 2022 ("**Effective Date**") by and between Florida Power & Light Company, a Florida corporation ("**Licensor**"), whose mailing address is 700 Universe Blvd., B2A/JB, Juno Beach, Florida 33408-0420, and St. Lucie Board of County Commissioners ("**Licensee**"), whose mailing address is 2300 Virginia Avenue, Fort Pierce, FL 34982.

WITNESSETH

WHEREAS, Licensor is the owner in fee simple of that certain real property located in St. Lucie County, Florida, more particularly shown and described on **Exhibit A** attached hereto and incorporated herein by this reference ("**Licensed Premises**"); and

WHEREAS, Licensee desires to occupy and use the Licensed Premises as stated herein and Licensor desires to allow such occupancy and use of the Licensed Premises upon the terms and conditions hereinafter set forth; and

NOW, THEREFORE, in consideration of the mutual benefits, covenants, agreements and promises contained in this License, the License Fee hereafter set forth and described, and for other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, it is agreed as follows

TERMS, CONDITIONS, AND PROVISIONS

1. **Recitals.** The foregoing recitals are true and correct and incorporated herein by this reference.
2. **Use.** Licensor hereby grants to Licensee and Licensee hereby accepts from Licensor, a non-exclusive license to occupy and use the Licensed Premises solely for an ingress and egress footpath trail connecting the St. Lucie County Environmental Learning Center to an adjacent residential development, but not for any other purpose whatsoever, upon the terms and conditions set forth in this License. Licensee shall obtain at its sole cost and expense, all applicable federal, state, and local permits required in connection with Licensee's allowed use of the Licensed Premises and provide copies of each such permit to Licensor.
3. **Term.** This License is for a term of five (5) years retroactively commencing on the 1st day of January, 2021 and ending on the 31st day of December, 2025 ("**Term**"), unless earlier terminated as provided by this License, or otherwise extended by mutual written agreement of Licensor and Licensee.
4. **License Fee.** During the Term, Licensee shall pay Licensor the sum set forth below, plus any applicable sales tax ("**License Fee**"), in lawful currency of the United States of America in the form of a regular bank check, cashier's check or money order. The annual License Fee shall be due upon the Effective Date of this License; and thereafter, the License Fee shall be due on or before the first (1st) day of each and every January during the Term.

Installment payments shall be mailed to the following address and shall correspond to the following "Fee Due Date / Payment Amount: schedule:

FPL
General Mail Facility
Miami, Florida 33188-0001

<u>Fee Due Date</u>	<u>Payment Amount</u>
January 1, 2021	\$0
January 1, 2022	\$0
January 1, 2023	\$2,500 plus tax
January 1, 2024	\$2,500 plus tax
January 1, 2025	\$2,500 plus tax

5. **Licensor's Rights.** Licensee agrees to never claim any interest or estate of any kind or extent whatsoever to or in the Licensed Premises by virtue of this License or the occupancy or use hereunder. Licensee's use of the Licensed Premises shall always be subordinate to Licensor's rights to and in the Licensed Premises. Licensor hereby reserves the right to enter upon the Licensed Premises at any time and for any purposes and Licensee shall notify its employees, agents, contractors, subcontractors, licensees, and invitees accordingly. Licensor, its employees and contractors are not and shall not be responsible or liable for any injury, damage or loss to Licensee resulting from Licensor's use and/or Licensee's use of the Licensed Premises. Licensor may at its sole discretion, install and/or permit others to install facilities upon, over and/or under the surface of the Licensed Premises at any time and from time to time during the Term.

6. **Conditions and Restrictions on Use.**

(a) Licensee shall, at its sole cost and expense, comply with all laws, rules, and regulations of all governmental authorities having jurisdiction over the Licensed Premises or use of the Licensed Premises. Licensee shall employ agricultural and other land management practices standard in the county and/or counties in which the Licensed Premises is located according to the purpose for which this License is granted and for the protection of the Licensed Premises. Licensee shall not designate or use the Licensed Premises to satisfy or comply with any minimum required parking code. Licensee shall not within the Licensed Premises, construct or erect any permanent or temporary building, structure, fixture, fence, shelter, attachment or improvement without the prior written consent of Licensor. All work to be performed by Licensee upon the Licensed Premises shall be in accordance with detailed plans and specifications to be prepared by Licensee and submitted to Licensor for Licensor's prior written approval thereof. Licensee shall not commence any work on the Licensed Premises unless and until such plans and specifications have been approved in writing by Licensor. Licensee shall pay directly on its own behalf for all costs and expenses associated with the construction and maintenance of all improvements and facilities that it constructs, operates and maintains upon the Licensed Premises. All fences, gates, lighting systems and irrigation systems installed by Licensee shall be electrically grounded according to Licensor's specifications. Licensee shall not cause or allow any waste of the Licensed Premises and shall not remove soil, import soil or alter the existing surface elevation of the Licensed Premises without first obtaining Licensor's prior written consent, which Licensor may grant or withhold in its sole discretion. Licensee shall not commit or allow any waste or damage to be committed on any portion of the Licensed Premises and shall keep the Licensed Premises in clean, safe and sanitary condition and in good repair and condition during the Term, as may be extended. Licensee, at Licensee's cost, shall be responsible for all landscaping maintenance on the Licensed Premises, and all janitorial services, including without limitation the obligation to remove trash, rodents, insects and vermin from the Licensed Premises as necessary. Licensee shall pay for all utility and other services furnished to or for Licensee upon the Licensed Premises.

(b) Licensee shall not use the Licensed Premises in any manner which, in the sole opinion of Licensor, might interfere with Licensor's use of the Licensed Premises or might cause a hazardous condition to exist. Licensee acknowledges that electrical equipment and appurtenances including, but not limited to, utility poles, overhead and underground wires, cables, conduits, circuits, insulators, transformers, guy wires and guy wire anchors (collectively "**Licensor Facilities**"), are installed or may be installed over, upon and under the surface of the Licensed Premises by Licensor and/or by others and are conductors of high-voltage electricity. Licensee understands that contact with or disturbance of any of these Licensor Facilities may cause a condition hazardous to persons and/or property. Licensee shall exercise extraordinary precautions to prevent injury or damage to persons and/or property that could result from contact with or disturbance of Licensor Facilities. Licensee shall notify its employees, agents, contractors, subcontractors, licensees and invitees of the existence of Licensor Facilities when working in the vicinity of Licensor Facilities.

(c) Licensee shall not install any improvements within twenty-five (25) feet of Licensor Facilities, unless Licensee first obtains prior written approval from Licensor. Licensee shall not cause or allow anything to exceed fourteen (14) feet in height above the surface of the Licensed Premises, nor allow any equipment capable of extending greater than fourteen (14) feet above the surface of the Licensed Premises to be brought upon the Licensed Premises, except that this provision shall not apply to equipment and items brought onto the Licensed Premises by Licensor or Licensor's employees, agents, and contractors. Licensee shall utilize effective dust control measures to prevent contamination of high-voltage circuit insulators. In each and every location where an electrical circuit exists above the ground surface of the Licensed Premises, Licensee shall not allow to be planted or rooted in the ground within less than fifty (50) lateral feet of such circuit, any type of vegetation that is capable of growing

to a height of fourteen (14) feet or more above the ground surface. Licensee may, anywhere upon the Licensed Premises, grow any type of vegetation that is planted and rooted in a pot or container where the volume capacity of the pot or container does not exceed twenty-five (25) gallons and where no part of the pot or container exists below the surface of the ground that touches the pot or container. Vegetation planted and rooted in a pot or container shall not be allowed at any time to exceed a height of fourteen (14) feet above the ground surface of the Licensed Premises. Licensor shall have the right, but no form of obligation, to inspect the Licensed Premises to determine if Licensee is in compliance with all terms, conditions and provisions of this License.

7. Environmental.

(a) Licensee agrees that no hazardous substance, as the term is defined in Section 101 (14) of the Comprehensive Environmental Response Compensation and Liability Act ("**CERCLA**") (42 USC Section 9601 [14]), petroleum products, liquids or flammables shall be placed upon, under, transported across, or stored upon the Licensed Premises, which restricts, impairs, interferes with, or hinders the use of the Licensed Premises by Licensor or the exercise by Licensor of any of its rights thereto.

(b) After the Effective Date, Licensee may perform a Phase I and/or Phase II environmental site assessment as per ASTM criteria to investigate the existing environmental condition of the Licensed Premises that is the subject of this License. The performance or the failure to perform an environmental site assessment does not relieve the Licensee from compliance with any other provision of this section of this License. Licensee shall maintain copies of any local, state or federal permits, licenses or other authorizations required for any and all of its activities on the Licensed Premises and present copies of such permits, licenses or other authorizations to Licensor and to any local, state and federal governmental agency official that requests to see the same. Licensee, at Licensee's sole cost and expense, shall perform all conditions required under any and all ground and surface water permits issued in connection with the Licensed Premises, including all maintenance and reporting obligations.

(c) Licensee shall not create or contribute to any Environmental Contamination, Unauthorized or Unpermitted Wetland Impacts, Unpermitted Groundwater Wells, Illegal Use of Ground or Surface Waters or any Other Environmental Impacts (individually and collectively referred to as "**Environmental Conditions**") as a result of its use of the Licensed Premises.

(1) Environmental Contamination is defined as any spilling or discharge of any chemical constituent by the Licensee to the environment that results in any pollution, sheen or contamination of the groundwater, surface water, soil, or any other environmental media, on or from the Licensed Premises, above the federal, state or local regulatory levels; including: (i) for groundwater: Chapters 62-777, Table I, 62-520, or 62-550 of the Florida Administrative Code ("**FAC**"); (ii) for surface waters: Chapters 62-777, Table I, or 62-302 of the FAC; and (iii) for soils: Chapters 62-777, FAC, Table II; or above natural background levels.

(2) Wetland Impacts are defined as activities impacting areas defined as "**wetland**" under the following: (i) federal law (for example, Section 404 of the Clean Water Act); (ii) federal rules (for example, current approved Army Corps of Engineers ("**ACOE**") Delineation Manual); (iii) federal guidance; (iv) state law (for example, Section 373.019(22), Florida Statutes); (v) state rules (for example, Chapter 62-340, FAC); (vi) state guidance; (vii) case law as formulated that further explains wetland jurisdictional criteria; (viii) local law (for example, county ordinances); (ix) local guidance; or (x) local policy. Unauthorized or Unpermitted Wetland Impacts shall mean the failure to obtain all required federal, state and local permits to impact the wetland or undertaking any action or activity in violation of any such permits. Some examples of permits needed to impact the wetland are the county environmental resources management permits, the State of Florida Department of Environmental Protection or Water Management district permits, and the Federal ACOE permits.

(3) Unpermitted Groundwater Wells means the installation or the use of an existing groundwater well without obtaining the appropriate state and local permits for the well installation and/or well pumping for use of groundwater or surface water in the area.

(4) Illegal Use of Ground or Surface Waters means the withdrawal or use of either ground water or surface water without obtaining any required consumptive use or water use permits from the South Florida Water

Management District ("SFWMD") or in violation of any consumptive use or water use permit issued by the SFWMD.

(5) Other Environmental Impacts, include, but are not limited to: failure to apply pesticides consistent with labeling instructions; failure to dispose of pesticide containers as per label instructions; failure to have licensed and trained personnel applying pesticides; failure to properly manage pesticide mix/load sites to avoid pesticide release to soils or surface waters in quantities or concentrations other than that specified on the label application instructions; or any violations of Federal Insecticide, Fungicide, and Rodenticide Act, or its state law equivalent; or any violations of the Florida Department of Agriculture and Consumer Services rules or Best Management Practices for the activities contemplated by this License.

(d) If the Licensee causes any Environmental Conditions to occur because of the performance of activities contemplated by this License, Licensee shall notify Licensors immediately upon discovery. Licensee acknowledges that the failure to deliver such notification may cause Licensors to file a damage claim against Licensee and confers to Licensors the right to terminate this License as set forth below in Section 9. Within seventy-two (72) hours of discovering such Environmental Conditions, Licensee shall, at its sole cost and expense, correct such condition or situation; provided that the Licensors retain the right to enter upon the Licensed Premises and correct any such condition or situation at any time. Any release notifications required to be submitted to federal, state or local regulatory agencies, because of the actions of Licensee pursuant to this License or any other notifications based on Environmental Conditions, shall be coordinated with Licensors.

(e) If Licensee, or its employees, contractors, subcontractors or anyone else working at the direction of Licensee causes Environmental Conditions on the Licensed Premises, or causes contamination that originates on the Licensed Premises, Licensee, on its own behalf and on behalf of its shareholders, officers, directors, employees, servants, agents, and affiliates, shall and hereby does forever hold harmless, indemnify, and release Licensors, and its shareholders, officers, directors, employees, servants, agents and affiliates (collectively, "**Licensors Entities**") of and from all claims, demands, costs, loss of services, compensation, actions or investigations on account of or in any way growing out of the Environmental Conditions, and from any and all known and unknown, foreseen and unforeseen damages, and the consequences thereof, resulting from the Environmental Conditions, including but not limited to, restoration of the Licensed Premises to the condition it existing prior to the occurrence of the Environmental Conditions.

8. Right to Cure. Licensors, at its sole discretion, may remove or cause to be removed by it or by its employees, agents, contractors, subcontractors, licensees, and invitees, any and all objects, materials, debris, or structures that could create a condition hazardous to persons or property or interfere with Licensors's use of the Licensed Premises or with Licensors Facilities. All costs incurred and/or expended by Licensors pursuant to this section which are caused by Licensee, its employees, agents, contractors, subcontractors, licensees, and invitees, are and shall be the sole obligation of Licensee, who shall reimburse Licensors immediately upon demand. If any of Licensee's activities or Licensee's use of the Licensed Premises results in an interruption of electric utility service, then Licensee shall reimburse Licensors for all costs related to each such interruption, including, but not limited to Licensors's lost revenue and costs to restore electric utility service.

9. Termination. Licensors may terminate this License at any time and for any reason or no reason whatsoever upon giving Licensee at least ninety (90) days prior written notice of such termination and in such case, Licensors shall refund to Licensee, any advance License Fee paid by Licensee to Licensors for the period of time, if any, that Licensee is unable to use the Licensed Premises due to Licensors's early termination of the Term. Licensee may terminate this License at any time and for any reason or no reason by giving Licensors at least ninety (90) days prior written notice of such termination; however in such case, Licensee shall not be entitled to a refund of any advance License Fee paid or any Licensee Fee due and payable for any period of time that Licensee does not actually use or is unable to use the Licensed Premises as a result of Licensee's early termination of this License. Licensors may immediately terminate this License at any time if Licensors, in its sole discretion, determines that Licensee and/or its employees, agents, contractors, subcontractors, licensees, or invitees have violated and/or failed to comply with any term, condition or provision of this License, and in such event, any advance License Fee and/or other payments paid by Licensee to Licensors or due and payable to Licensors hereunder shall be retained by Licensors as liquidated damages, it being understood and agreed that the damages incurred by Licensors if Licensee fails to perform hereunder may not be ascertained with mathematical precision as of the Effective Date. This License shall terminate automatically upon the death or dissolution of the Licensee or if Licensee shall become insolvent or bankrupt.

Licensors may terminate this License in the event of default by Licensee of its obligations under this Agreement. If such default is a monetary default, Licensee shall have ten (10) days after receipt of written notice from Licensors to cure such default; and if such default is a non-monetary default, Licensee shall have thirty (30) days after receipt of written notice from Licensors to cure such default. If (i) Licensee does not cure a default within the period set forth in the preceding sentence, or in the event of a cure for a non-monetary default which requires in excess of thirty (30) days to complete, if Licensee has not commenced such cure within such thirty (30) day period and thereafter does not diligently prosecute the cure to completion within an additional thirty (30) days; or (ii) if Licensee makes a general arrangement or assignment for the benefit of creditors, or if Licensee becomes a "debtor" as defined in 11 U.S.C. §101 or any successor statute thereto, or upon the appointment of a trustee or receiver to take possession of substantially all of Licensee's assets, or upon the attachment, execution or other judicial seizure of substantially all of Licensee's assets located at the Licensee Premises or of Licensee's interest in this Agreement, then Licensors may terminate this Agreement and re-enter and re-take possession of the License Area. The date of written notice to Licensee of such election by Licensors shall serve as the termination date.

10. Surrender. Upon expiration or earlier termination of this License, Licensee shall vacate and leave the Licensed Premises in as good a condition as existed prior to the Effective Date, ordinary wear, tear and casualty excepted. No later than five (5) calendar days following the date upon which this License expires or terminates, Licensee shall remove all personal property and improvements placed upon the Licensed Premises by Licensee and shall repair and restore and save Licensors harmless from all damage caused by such removal. If any or all such personal property and improvements placed upon the Licensed Premises by Licensee is not so removed by Licensee within the above prescribed five (5) day time period, then Licensors shall have the right, but not the obligation, to take possession of and appropriate unto itself, without any payment or offset thereof, any personal property and improvements placed upon the Licensed Premises by Licensee or any other entity acting on behalf of Licensee. Licensors shall have the right, but not the obligation, to effect removal of such personal property, improvements and items at Licensee's sole cost and expense, the amount of which Licensee agrees to reimburse to Licensors immediately upon Licensors's demand.

11. No Encumbrances. Licensee expressly covenants and agrees that the Licensed Premises shall not be subject to any encumbrance by any mortgage, lien, financial instrument or other agreement outside of or in addition to this License, nor shall the Licensed Premises be liable to satisfy any indebtedness that may result from Licensee's operation or activity.

12. Indemnity. Licensee shall exercise its privileges herein at its sole risk and agrees to indemnify and save harmless Licensors and Licensors Entities, from all liability, loss, cost, and expense, including attorneys' fees, which may be sustained by Licensors Entities, to any person, natural or artificial, by reason of the death of or injury to any person or damage to any property, whether or not due to or caused by the negligence of Licensors Entities, arising from or in connection with the use of the Licensed Premises by Licensee, and its employees, agents, contractors, subcontractors, licensees, and invitees. Licensee agrees to defend, at its sole cost and expense, but at no cost and expense to Licensors Entities, any and all suits or actions instituted against Licensors Entities for the imposition of such liability, loss, cost, and expense arising from the use of the Licensed Premises by Licensee and its employees, agents, contractors, subcontractors, licensees, and invitees.

13. Insurance. It is understood by the parties that the Licensee is self-insured as to liability and is subject to sovereign immunity pursuant to Section 768.28 of the Florida Statutes. If Licensee employs or uses the services of a contractor, vendor, or any person(s) not a regular employee of the Licensee ("Licensee Contractor") to perform any type of work upon the Land, including, but not limited to mowing and vegetation control, then Licensee shall require and ensure that such Licensee Contractor(s) provide to Licensee a valid proof of current general liability insurance coverage with minimum limits of \$2,000,000.00 for bodily injury and/or death of person(s), and \$1,000,000.00 for property damage arising out a single occurrence. Further, Licensee shall ensure that said coverage is kept in force during the entire period that such Licensee Contractor(s) conduct work upon the Land, Licensee understands and agrees that the use of the Land is expressly contingent upon acceptance and compliance with the provision contained herein. Said policies of Licensee Contractor shall be endorsed to insure against obligations assumed by the Licensee Contractor in the indemnity herein, and to be primary and non-contributory to any coverage maintained by Licensors. Each party releases and waives and will require its/Licensee Contractor's insurer release and waive all rights of subrogation against the other for any damage to or loss of property owned by the waiving party.

14. **No Transfer.** Licensee shall not, without the prior written consent of Licensor, allow any other entity or party to occupy or use the Licensed Premises or in any way transfer, assign, lease, sublease, license, sublicense or in any other manner, convey this License to any entity or party not specifically named herein by Licensor as a party to this License. Licensee shall not hypothecate this License, nor enter into any license, concession agreement, mortgage, contract or other agreement which conflicts with or is contradictory to the terms and provisions of this License.

15. **Holding Over.** If Licensee continues to occupy and/or use the Licensed Premises, or any part thereof, after the expiration or earlier termination of this License, then no tenancy, ownership or other legal interest in the Licensed Premises to the benefit of Licensee shall result therefrom, but such holding over shall be an unlawful detainer and all parties occupying and/or using the Licensed Premises shall be subject to immediate eviction and removal, and Licensee shall upon demand pay to Licensor, as liquidated damages, a sum equal to double the rate of the License Fee as set forth above in Section 4 for and during any and all period(s) which Licensee and/or its employees, agents, contractors, subcontractors, licensees, and invitees fail to vacate the Licensed Premises after the date upon which this License becomes expired or terminated.

16. **Subordination by Licensee.** This License is made expressly subject and subordinate at all times to any and all mortgages, deeds of trust, ground or underlying licenses affecting the Licensed Premises which have been executed and delivered, or which may at any time hereafter be executed and delivered, and any and all extensions and renewals thereof and substitutions therefore and modifications and amendments thereof, and to any and all advances made or to be made under or upon said mortgages, deeds of trust, ground or underlying licenses. Licensee agrees to execute any reasonable instrument(s) which the Licensor may deem necessary or desirable to effect the subordination of this License to any or all such mortgages, deeds of trust, ground or underlying licenses which do not diminish, alter or change Licensee's rights hereunder.

17. **Waiver of Jury Trial.** LICENSEE KNOWINGLY, VOLUNTARILY AND INTENTIONALLY WAIVES ANY AND ALL RIGHT(S) IT MAY HAVE TO A TRIAL BY JURY WITH RESPECT TO ANY LITIGATION BASED UPON, OR ARISING FROM, UNDER, OR IN CONNECTION WITH THIS LICENSE, OR ANY DOCUMENT CONTEMPLATED TO BE EXECUTED IN CONJUNCTION HERewith, OR ANY COURSE OF CONDUCT, COURSE OF DEALING, STATEMENT (WHETHER ORAL OR WRITTEN) OR ACTION OF LICENSEE.

18. **Attorneys' Fees.** In the event of any litigation arising between the parties under this License, the prevailing party shall be entitled to reasonable attorneys' fees and paralegals' fees and court costs at all trial and appellate levels. This paragraph shall survive expiration or termination of this License coextensively with other surviving provisions of this License.

19. **Applicable Law and Venue.** This License, including each and all of its terms, conditions and provisions, is governed by and interpreted according to the laws of the State of Florida. All legal matters arising out of, or in connection with this License are and shall be subject to a court of competent jurisdiction within the State of Florida. The parties agree that jurisdiction to adjudicate any case or controversy involving this License shall exclusively be in the state courts located in County wherein the Licensed Premises is located. If any term, condition or provision, or any part thereof, is found by a Florida court to be unlawful, void or unenforceable, then that term, condition, provision or part thereof shall be deemed severable and will not affect the validity and enforceability of any of the remaining terms, conditions and provisions of this License.

20. **Time and Entire Agreement:** Time is of the essence, and no extension of time shall be deemed granted unless made in writing and executed by both Licensor and Licensee. This instrument constitutes the entire agreement between the parties hereto and relative to the License, and any agreement or representation which is not expressly set forth herein and covered hereby is null and void. All amendments, modifications, changes, alterations and supplements to this License must be in writing and executed by both Licensor and Licensee in order to be deemed valid and enforceable. If Licensor fails or elects to not enforce Licensee's breach of any term, condition or provision of this License, then Licensor's failure or election to not enforce Licensee's breach shall not be deemed a waiver of Licensor's right to enforce one or more subsequent breaches of the same or any other term, condition or provision of this License.

21. **Notices.** All notices associated with and related to this License shall be deemed to have been served upon the date and time received by Licensor or Licensee at the addresses set forth in the Preamble by: government postal service, private delivery service or by electronic email. Either party may, at any time, designate in writing a

substitute address for the address first written above, and thereafter notices shall be directed to such substituted address.

22. **Recording.** Neither this License, nor any memorandum or document related hereto may be recorded in any official public record.

23. **Headings and Gender.** All headings in this License are inserted only for convenience and ease of reference and are not to be considered in the construction or interpretation of any provision of this License. In construing this License, the singular shall be held to include the plural, the plural shall include the singular, and the use of any gender shall include every other and all genders.

24. **Construction.** This License shall not be construed more strictly against one party than against the other, merely by virtue of the fact that it may have been prepared by counsel for one of the parties, it being recognized that both parties have contributed substantially and materially in the negotiation and preparation of this License, and that the normal rule of construction to the effect that any ambiguities are to be resolved against the drafting party shall not be employed in the interpretation of this License or any exhibits, schedules, addendums or amendments hereto.

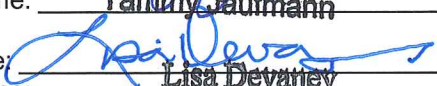
25. **Counterparts.** This License may be executed in multiple counterparts, each of which shall be deemed an original, and all of which together shall constitute a single instrument.

26. **Authority.** The individuals and entities executing below represent and warrant their corporate authority to execute this License, bind the respective entities hereto, and perform their obligations hereunder.

27. **Brokerage.** It shall be the obligation of Licensee to pay any claim for any brokerage commission or fee asserted against Licensee or Licensor in connection with this transaction, and Licensee shall indemnify, save harmless and defend Licensor from and against any such claim (including reasonable attorney, paralegal and expert fees and disbursements in all proceedings and at all levels of proceedings). This section shall survive termination of this License.

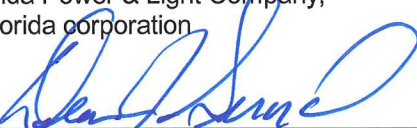
IN WITNESS WHEREOF, Licensor and Licensee have caused this License to be signed and executed effective as of the Effective Date.

Witnesses for Licensor:

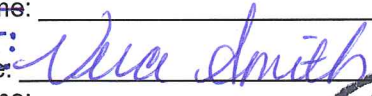
Signature: 
Print Name: Tammy Laufmann
Signature: 
Print Name: Lisa Devaney

Licensor:

Florida Power & Light Company,
a Florida corporation

By: 
Name: Dean J. Girard
Title: SR. Director Corporate Real Estate SVCS.

Witnesses for Licensee:

Signature: _____
Print Name: _____
ATTEST: 
Signature: _____
Print Name: _____

Licensee:

St. Lucie County Board of County Commissioners,
a political subdivision of the state of Florida

By: 
Name: Sean Mitchell
Title: SLC BoCC Chair



**APPROVED AS TO FORM
AND CORRECTNESS:**

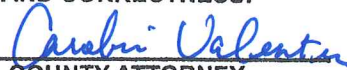
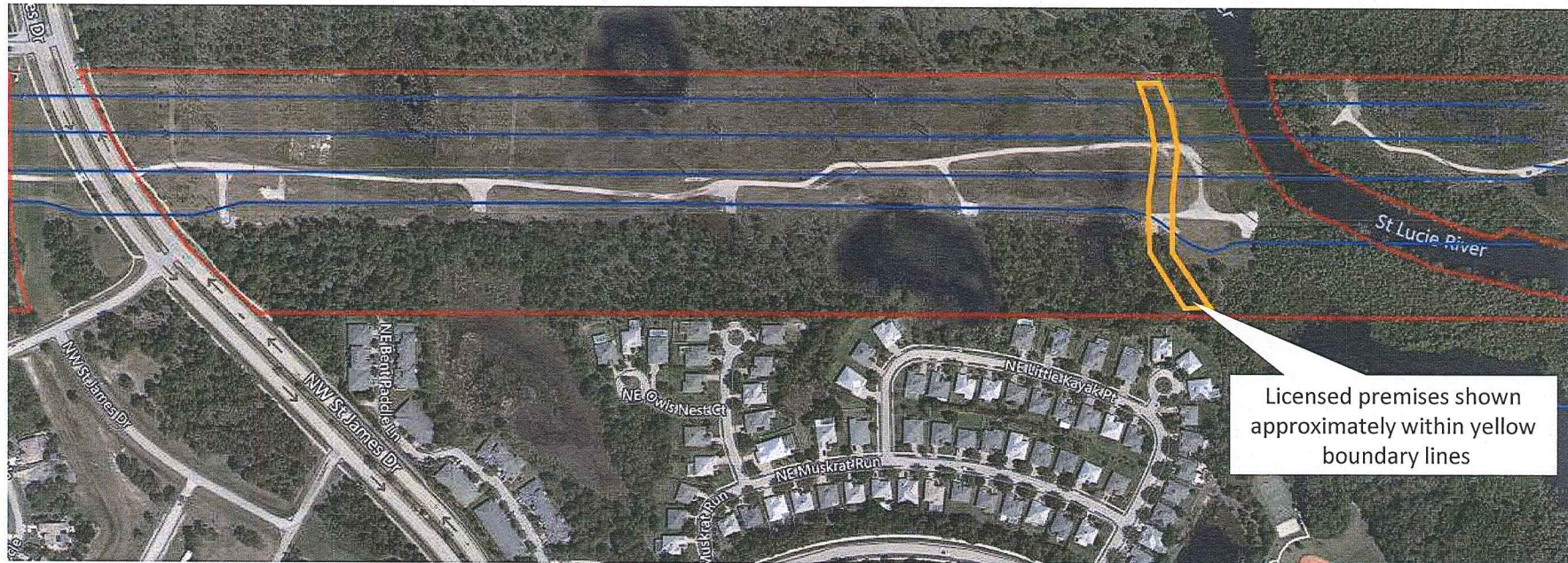

Asst. COUNTY ATTORNEY

Exhibit A to that certain License Agreement (FPL License #0047-ED-1998) with the retroactive effective date of the 1st day of January, 2021 by and between Florida Power and Light and the St. Lucie Board of County Commissioners. The Licensed Premises all lying and being in St. Lucie County, Florida a portion of parcel 3416-213-0001-000-7 and containing approximately .64 acres.



Appendix F.

USCG Bridge Permit Application Guide

OFFICE OF BRIDGE PROGRAMS, U.S. COAST GUARD

Bridge Permit Application Guide

U.S. Department of
Homeland Security

United States
Coast Guard



COMDTPUB P16591.3D

July 2016

OMB Control Number:
1625-0015

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COMDTPUB P16591.3D

19 JULY 2016

COMMANDANT PUBLICATION P16591.3D

Subj: BRIDGE PERMIT APPLICATION GUIDE

1. PURPOSE. This Manual has been prepared to assist Federal, State and local agencies, as well as members of the general public, when applying for a Coast Guard permit to construct a new bridge or causeway or reconstruct or modify an existing bridge or causeway across the navigable waters of the United States.
2. ACTION. All Coast Guard unit commanders, commanding officers, officers-in-charge, deputy/assistant commandants, and chiefs of headquarters staff elements shall comply with the provisions of this Manual. Internet release is authorized.
3. DIRECTIVES AFFECTED. This Publication supersedes the previous Bridge Permit Application Guide, COMDTPUB P16591.3C.
4. DISCUSSION. Federal law prohibits the construction of any bridge across the navigable waters of the United States unless first authorized by the Coast Guard. This Manual shall be provided to State or local agencies who routinely apply for bridge permits and to other prospective applicants when requested. If the procedures described in this Manual are followed, it will expedite the permitting process. Questions regarding a specific project should be directed to the Bridge Program staff of the Coast Guard district where the project is located.
5. MAJOR CHANGES.
 - a. The document attached herein provides all the necessary information for an applicant to apply for a Coast Guard bridge permit. There have been several minor editorial changes incorporated into this edition of the Bridge Permit Application Guide. The guide originally had two sections, the Introduction and the Permit Application. This version adds a new section, the Bridge Project Initiation Request. This section requires

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applicants with covered projects under Title 41 of the Fixing America's Surface Transportation Act (FAST-41) to submit a Project Initiation Request providing clear indication the applicant/project sponsor is prepared to proceed with fulfilling the requirements of the National Environmental Policy Act in a timely manner. The Coast Guard encourages all other applicants to submit a Bridge Project Initiation Request. This is expected to reduce the amount of time the Coast Guard spends working on projects that are not yet ripe for permit consideration.

- b. The Permit Application section is still broken down into three subsections but the order of presentation has changed to reflect the way the Coast Guard documents this information in its internal case record of file. The Environmental Documentation section has been modified to simplify the documentation requirements necessary for inclusion by the applicant. This streamlined approach was developed in conjunction with the Coast Guard Offices of Environmental Management and Environmental Law.
 - c. Appendix A is new to this document but not new to the program. It provides the tools necessary for an applicant to conduct a navigation impact report as part of the application process to accurately determine the current and prospective navigation on the waterway. The appendix requires applicants with Department of Transportation funded projects to prepare the report and encourages all other applicants to prepare the report to facilitate the permit application process. This requirement is in accordance with the 2014 Memorandum of Understanding between the Coast Guard, Federal Highway Administration, Federal Transit Administration, and the Federal Railroad Administration.
6. IMPACT ASSESSMENT. This Publication does not require any new action by the district bridge offices that is not already part of the permit application process. It is an information collection tool for bridge permit applicants. There are no new personnel resources required, no new training and no funding considerations. All actions conducted by district bridge personnel to process a Coast Guard bridge permit will be captured by a new Bridge Permit TTP.
7. ENVIRONMENTAL ASPECTS AND IMPACT CONSIDERATION.
- a. The development of this Directive and the general policies contained within have been thoroughly reviewed by the originating office and are categorically excluded (CE) under current USCG CE #33 from further environmental analysis, in accordance with Section 2.B.2. and Figure 2-1 of the National Environmental Policy Act Implementing Procedures and Policy for Considering Environmental Impacts, COMDTINST M16475.1 (series).
 - b. This Directive will not have any of the following: significant cumulative impacts on the human environment; substantial controversy or substantial change to existing environmental conditions; or inconsistencies with any Federal, State, or local laws or administrative determinations relating to the environment. All future specific actions resulting from the general policies in this Manual must be individually evaluated for compliance with the National Environmental Policy Act (NEPA), Council on Environmental Policy NEPA regulations at 40 CFR Parts 1500-1508, DHS and Coast Guard NEPA policy, and compliance with all other environmental mandates.

8. DISTRIBUTION. No paper distribution is available for this Manual. An electronic version is located on the following Commandant (CG-612) web sites. Internet: <http://www.uscg.mil/Directives/>, and CGPortal: <https://cgportal2.uscg.mil/library/Directives/SitePages/Home.aspx>.
9. RECORDS MANAGEMENT CONSIDERATIONS. This Manual has been thoroughly reviewed during the Directives clearance process, and it has been determined there are no further records scheduling requirements, in accordance with the Federal Records Act, 44 U.S.C. 3101 et seq., NARA requirements, and Information and Life Cycle Management Manual, COMDTINST M5212.12 (series). This policy does not have any significant or substantial change to existing records management requirements.
10. FORMS/REPORTS. None.
11. REQUEST FOR CHANGES. Send changes/recommendations to: HQS-DG-1st-CG-BRG@uscg.mil.

D.C. BARATA /s/
Captain, U.S. Coast Guard
Acting Director, Marine Transportation Systems

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SECTION 1 INTRODUCTION TO THE PERMITTING PROCESS

The Coast Guard permits the location and plans of bridges and causeways and imposes any necessary conditions relating to the construction, maintenance, and operation of these bridges in the interest of public navigation. A bridge permit is the written approval of the location and plans of the bridge or causeway to be constructed or modified across a navigable waterway of the United States.

Additional information regarding Coast Guard permitting can be found online at <http://www.uscg.mil/hq/cg5/cg551/default.asp>. Federal law prohibits the construction of bridges and causeways across navigable waterways unless the Coast Guard first authorizes them. By following the procedures in this Publication the Coast Guard can efficiently process a bridge permit application.

This guidance does not substitute applicable legal requirements, nor does it create a rule. It is neither intended to, nor does it impose legally-binding requirements on any party. It represents the Coast Guard's current thinking on this topic and may assist industry, mariners, the general public, and the Coast Guard, as well as other federal and state regulators, in applying statutory and regulatory requirements. In compliance with the Paperwork Reduction Act of 1995, the collection of this information for a bridge permit application is covered by Office of Management and Budget Control Number: 1625-0015.

THE PERMITTING PROCESS

A. Project Initiation

1. The applicant contacts the Coast Guard District Bridge Office to discuss the proposed bridge project and requirements listed in this Guide.
2. The Coast Guard District Bridge Office determines if the waterway is navigable (if not previously done) and if the project is exempt from a Coast Guard bridge permit.
3. The applicant submits a project initiation request to the Coast Guard District Bridge Office. Information on the project initiation request can be found later in this Guide.
4. The Coast Guard District Bridge Office provides navigational points of contact to assist with navigation data collection for the navigation impact report. See Appendix A for navigation impact report requirements.
5. The Coast Guard District Bridge Office reviews the proposed project purpose and need statement.
6. The Coast Guard District Bridge Office reviews the project initiation request submission and determines project viability and priority level.

B. Coordination Meetings

1. The applicant develops a coordinated project plan with the Coast Guard and other Federal, State, and local agencies (responsibilities, issues/concerns, need for public

meetings, application requirements, and project schedule/milestones). During the development of this plan, the following actions occur:

- a. The lead Federal agency and cooperating agency are identified.
- b. A designation in writing is made to document which agency is to act on behalf of other agencies for the Endangered Species Act, National Historic Preservation Act, etc.
- c. The Coast Guard District Bridge Office provides written acceptance of cooperating/participating agency status to the lead Federal agency.
- d. Applicant provides information on level of NEPA document, if known.

C. Preliminary Navigational Clearance Determination

1. Applicant submits navigational impact report (when applicable).
2. The Coast Guard District Bridge Office provides a preliminary navigation determination to the applicant in writing. The determination will state how long it is valid if navigation does not change on the waterway.

D. NEPA Scoping, Drafting and Evaluation Phase

1. The Coast Guard District Bridge Office attends scoping meetings and reiterates Coast Guard environmental requirements for the NEPA document.
2. The lead federal agency drafts the NEPA document.
3. The Coast Guard District Bridge Office compares the NEPA draft to requirements outlined in the Bridge Permit Application Guide.
4. The Coast Guard District Bridge Office evaluates design alternatives in the NEPA document against the preliminary navigation determination.
5. The Coast Guard District Bridge Office provides environmental comments to the lead federal agency and sponsor/applicant. Comments on navigation within the NEPA document should be addressed separately.

E. NEPA Decision Phase

1. The lead federal agency adjudicates NEPA comments.
2. The Coast Guard District Bridge Office prepares the Coast Guard NEPA decision document for approval in conjunction with the lead Federal agency (the USCG NEPA document is typically signed when the lead Federal agency signs their NEPA document).

F. Permit Application Review and Public Notice

1. Application materials might be submitted to the USCG during the NEPA evaluation phase.

- a. Once all permit application materials are submitted, the Coast Guard District Bridge Office reviews the application and determines whether it is complete. The Coast Guard District Bridge Office will then notify the applicant in writing (via letter or e-mail) of application deficiencies and when the application is complete. A projected permit date will be included in the letter to the applicant once the application is deemed complete.
 - b. The application is complete when all final required documents and certifications are received and are sufficient to make a permit decision.
2. The Coast Guard District Bridge Office will issue the public notice (PN) when sufficient information is received. The application needs not be complete in order to issue a PN.
3. The Coast Guard District Bridge Office will then respond to navigation-related public comments and send non-navigation related comments to the lead federal agency and sponsor/applicant.
4. Ensure consultations under all applicable environmental laws are completed before permit decision.

G. Permit Decision & Case File Submission

1. The Coast Guard District Bridge Office makes a permit recommendation and if appropriate, issues the bridge permit.
2. If the project is a headquarters action, the case file is sent to Coast Guard headquarters for permit decision. When a Coast Guard Headquarters final agency action is required, the staff of the Permits Division, Bridge Program Office, U. S. Coast Guard Headquarters in Washington, DC, reviews and evaluates the case file submitted by the District Commander.
3. Based on this evaluation, the District Commander's recommendation may be accepted or rejected, and a bridge permit may be issued or denied.

SECTION 2 BRIDGE PROJECT INITIATION REQUEST

The Coast Guard District Bridge Office should be consulted early and often throughout the entire bridge permitting process. The permitting improvement provisions found in Title 41 of the Fixing America's Surface Transportation Act (FAST Act Title 41, or "FAST-41") created a new requirement for covered projects to include a notice of initiation. Applicants with projects covered under FAST-41 must now submit a written Project Initiation Request providing clear indication they are prepared to proceed with fulfilling the requirements for NEPA in a timely manner. Submission of this document is highly encouraged for all other applicants to avoid delays and head off potential conflicts in the permit application process.

A. BRIDGE PROJECT INITIATION REQUEST FOR PERMIT - The initiation request consists of the following information:

1. A brief description of the proposed project, including information about constraints or flexibility with respect to the project;
2. A brief description of the purpose and need of the bridge project;
3. Proposed schedule (if known), including timeframe for filing necessary Federal and State applications, construction start date, and planned in-service date, if approved;
4. A list of potentially affected Federal and non-Federal entities; and,
5. Based on existing, relevant and reasonably available information, a description of the known existing major project site conditions, potential changes to the waterway and/or any other areas of concern.

B. BRIDGE PROJECT INITIATION REQUEST SUBMISSION AND EVALUATION

1. Projects which require preparation of an Environmental Impact Statement (EIS) require the initiation request be submitted no later than just prior to, or at the same time as, the submittal of the draft NEPA Notice of Intent (NOI). Contact the Coast Guard District Bridge Office responsible for the area in which the project is to be located to coordinate the timing of the submission. For non-EIS level projects the initiation request should be submitted when:
 - a. The proposed bridge project is sufficiently defined to provide the above required information; and
 - b. The project sponsor is ready to begin the NEPA phase of project development by devoting appropriate staff, consultant services, financial resources and leadership attention to the project. Consultation among the project sponsor/applicant, lead agencies, and other appropriate agencies prior to this notification is a good practice.

NOTE: The project sponsor/applicant typically may begin to submit application materials at this stage. Once the Coast Guard has received an Initiation Request, the Coast Guard will begin reviewing application materials as they become available. The Coast Guard requires submission of all the items within Section 3 before the application can be considered complete.

SECTION 3 PERMIT APPLICATION

The Coast Guard bridge permitting process is directed by laws, policies, professional standards and other requirements. This chapter is a guide to help the applicant through the bridge permit application process. Additional information may be found in 33 CFR, Parts 114 and 115. The OMB Information Collection Number is 1625-0015.

A. THE APPLICATION PACKAGE - The application package consists of the following information. Submit information in the format outlined below. If any section is not applicable to the project, state why it is not applicable.

1. Per 33 CFR § 115.50(j), when applying for a bridge permit, submit an application package to the Coast Guard District Bridge Office that has jurisdiction over the area of the proposed bridge site.

Salutation (i.e. Dear Sir/Ma'am):

Application is hereby made for a Coast Guard bridge permit.

Application Date:

a. Applicant information:

- 1) Name;
- 2) Address;
- 3) Telephone number; and
- 4) Email address;.

b. Consultant/Agent information (if employed):

- 1) Name (company or individual);
- 2) Address;
- 3) Telephone number;
- 4) Email address; and
- 5) Letter authorizing the consultant/agent to obtain permits on behalf of the applicant.

c. Proposed Bridge(s):

- 1) Name of the waterway that the bridge(s) would cross;
- 2) Number of miles above the mouth of the waterway where the bridge(s) would be located and provide latitude and longitude coordinates (degree/minute/second) at

centerline of navigation channel (contact the local Coast Guard Bridge Office for guidance);

- 3) City or town, county/parish, and state where the bridge(s) would be located at, near, or between;
 - 4) Brief description of project to include type of bridge(s) proposed [fixed or movable (drawbridge, bascule, vertical lift, swing span, pontoon), highway, railway, pedestrian, pipeline] and existing bridge(s) at project site, if applicable;
 - 5) Drawbridge Regulations (if applicable): if the proposed bridge(s) is a new movable span, identify if it will operate under 33 CFR § 117.5 (which requires all movable span bridges to open upon vessel request) or if it is anticipated a special operating regulation will be requested in accordance with 33 CFR Part 117 Subpart B. If a special operating regulation is anticipated, explain why special operating regulations are being requested and contact the Coast Guard District Bridge Office to discuss further. If there is an existing drawbridge at the site, identify the drawbridge regulation the bridge operates under and indicate if the regulation must be adopted by the new bridge or whether there is an expectation that a modification may be required.;
 - 6) Date of plans and number of plan sheets;
 - 7) Estimated cost of bridge(s) and approaches;
 - a) Provide the estimated cost of the bridge(s) as proposed, with vertical and horizontal navigational clearances.
 - b) Provide the estimated cost of a low-level bridge(s) on the same alignment with only sufficient clearance to pass high water while meeting the intended purpose and need.
 - 8) Type and source of project funding (federal, state, private, etc.);
 - 9) Proposed project timeline;
 - 10) Other Federal actions (e.g., permits, approvals, funding, etc.) associated with the proposal.
- d. Legal authority for proposed action:
- 1) If the applicant does not own the existing bridge(s) that is being replaced or modified, include a signed statement from the bridge owner authorizing the removal or modification work.
 - 2) State whether the applicant has the right to build in accordance with 33 CFR § 115.05. If the applicant does not own the property needed to build the bridge(s) as proposed, include a signed statement (e.g., deed or easement) from the property owner or owners authorizing the proposed construction or modification work.

e. International bridges (if applicable):

- 1) The International Bridge Act of 1972, or a copy of the Special Act of Congress if constructed prior to 1972, should be cited as the legislative authority for international bridge construction; and
- 2) The Coast Guard requires Presidential approval, via the State Department, before issuing a bridge permit under the International Bridge Act of 1972.

NOTE: Please include a copy of State Department approval for international bridges in the application package for a Coast Guard bridge permit.

f. Dimensions of the proposed bridge(s): (All navigational clearances should be stated in U.S. linear feet in decimal form vs. feet and inches. For international bridges, provide clearances in both linear feet and meters). Cite number of plan sheets and date(s) of plan sheets to be approved.

- 1) Vertical clearance as indicated on plan sheets: This is the minimum vertical distance between the lowest part (e.g., member, chord, or steel) of the superstructure spanning the navigation channel and the recognized datum (e.g., MHW, 2% flow line, etc.) at the bridge site. Cite clearances above the appropriate high water elevation and low water elevation. In the case of movable bridges, cite clearances in the open and closed positions. In some situations, vertical clearances should be cited at the margins of the navigation channel, and for a bascule bridge clearances at the tip of the leaves, if not fully open.
- 2) Horizontal clearance as indicated on plan sheets: This is the horizontal distance, measured normal to the axis (centerline) of the channel, through which the stated vertical clearance is available. Clearance may be between piers (full width of the span), between the bridge protective system, within the margins of the navigational channel, or bank-to-bank in the case of a bridge having no piers or bridge pier protective fender system within the waterway.
- 3) Length of bridge(s) project: This is the length of the bridge(s) project from abutment-to-abutment or approach-to-approach.

If no prior permit exists, and this is a modification or replacement project, is the length the same as the old bridge. If not, what is the difference?

- 4) Width of bridge(s) project: This is the width of the bridge(s) at its widest point (out-to-out).

If no prior permit exists, and this is a modification or replacement project, is the width the same as the old bridge. If not, what is the difference?

- 5) Depth of the waterway: At project site at MHW if tidal or OHW if non-tidal, using the appropriate elevation and datum (e.g., NGVD 1929, NAVD 1988, etc.).
- 6) Width of waterway: At project site at MHW if tidal or OHW if non-tidal.

- 7) Significant effect on flood heights and associated drift, if any, that could cause a navigation hazard.
- g. Temporary Bridge(s) dimensions (vertical clearance, horizontal clearance, length and width), if applicable:
- h. Waterway Data Requirements: Contact the Coast Guard District Bridge Office to determine what data in the navigation impact report (see Appendix A) is required for the proposed project. The information will assist the Coast Guard in making a preliminary navigation determination, which will inform alternatives that will be analyzed in the environmental documentation.
- i. Existing bridge(s) if applicable:
 - 1) Name of bridge(s): e.g., US 40 Highway Bridge; or Coleman Memorial Bridge; or State Route 7 Bridge also known as Preston Falls Bridge and waterway mile point;
 - 2) Type of bridge(s) and number of lanes: e.g., fixed or moveable (drawbridge, bascule, vertical lift, swing span, pontoon, etc.); highway, railway, pedestrian, pipeline;
 - 3) Drawbridge Regulations (if applicable): If the existing bridge(s) has a movable span identify whether its operating schedule is regulated by 33 CFR § 117.5 or if it operates under a special operating regulation found in 33 CFR Part 117 Subpart B (if so cite the regulation).

Modification of an existing drawbridge may require revision or removal of the existing regulation (e.g. if the bridge project involves replacing the existing drawbridge with a fixed bridge). Contact the local Coast Guard office if it is anticipated the existing operating schedule will change for the proposed bridge;

- 4) Latitude and longitude coordinates (degree/minute/second) at centerline of the bridge(s);
- 5) Dimensions of the existing bridge(s): (All navigational clearances should be stated in U.S. linear feet. In addition, provide clearances in meters if international bridge(s)).
 - a) Vertical clearance: This is the minimum vertical distance between the lowest part (e.g., member, chord, or steel) of the superstructure spanning the navigation channel and the recognized datum (e.g., MHW, 2% flow line, etc.) at the bridge site. Cite clearances above the appropriate high water elevation and low water elevation. In the case of movable bridges, cite clearances in the open and closed positions. In some situations, vertical clearances should be cited at the margins of the navigation channel, and for a bascule bridge clearances at the tip of the leaves, if not fully open.

For modification and replacement projects, the applicant must cite the vertical clearance of the existing bridge and the proposed bridge from the same datum.

If the vertical datum for the existing bridge differs from the proposed vertical datum (tidal referenced to geodetic), show all necessary converted vertical clearance values and note the original values in the notes section on the plan sheets to demonstrate any change in approved clearances. If conversions (i.e. MLT to MLW) cannot be made, it is necessary for the applicant to survey the existing bridge to provide as-built clearances using the same verifiable vertical datum (tidal and geodetic) as the proposed project.

- b) Horizontal clearance: This is the horizontal distance, measured normal to the axis (centerline) of the channel, through which the stated vertical clearance is available. Clearance may be between piers (full width of the span), between the bridge protective system, within the margins of the navigation channel or bank-to-bank in the case of a bridge having no piers in the waterway.
 - c) Length of existing bridge(s): This is the horizontal distance from abutment-to-abutment or approach-to-approach.
 - d) Width of existing bridge(s): This is the width of the bridge(s) at its widest point (out-to-out).
- 6) Owner of the existing bridge(s).
- j. Discuss construction methodology, if known, and removal of existing bridge(s), as applicable:
 - 1) Discuss proposed construction methodology and restrictions;
 - 2) Discuss maintenance of land traffic during construction activities;
 - 3) Discuss extent of removal of existing bridge(s) (e.g. in its entirety, two feet below the mud line, down to or below the natural bottom of the waterway or to a specific elevation), time needed for removal, etc.; and
 - 4) Discuss demolition methodology.
- NOTE: In the interest of navigational safety, the Coast Guard must make the final decision concerning the extent of bridge(s) removal.**
- k. Other agencies with jurisdiction over the proposed project:
 - 1) Agency; and
 - 2) Permits or type of approvals required for the project.

B. ENVIRONMENTAL DOCUMENTATION:

NOTE: See Appendix B for a table of the Environmental Control Laws, Executive Orders, and Regulations Requiring Compliance, as applicable, with Bridge Program Actions.

NOTE: For all of the below environmental control laws, the Coast Guard requests specific decision documents as part of the application. If the Coast Guard is the lead federal agency for the National Environmental Policy Act and other environmental control laws, coordinate with the local Coast Guard District Bridge Office for a list of documents to include.

1. **National Environmental Policy Act** - The National Environmental Policy Act (NEPA) (42 USC 4321, et seq.) requires Federal agencies to evaluate the potential environmental impacts of their actions. Coast Guard bridge permits are federal actions that require the preparation of an environmental evaluation document describing the potential environmental effects under NEPA.

Lead Federal Agency:

List Cooperating Agencies for project:

- a. Type of environmental document.

☐ Environmental Impact Statement/Record of Decision (EIS/ROD)

Cite location(s) in the application package:

☐ Environmental Assessment/Finding of No Significant Impact (EA/FONSI)

Cite location(s) in the application package:

☐ Categorical Exclusion (CE)

Cite location(s) in the application package:

- b. Has the environmental document been modified, reevaluated, supplemented or rescinded for the proposed action?

☐ Yes ☐ No

If yes, cite location(s) in the application package:

2. **Environmental Effects Abroad** - Executive Order 12114 requires federal agencies taking actions that significantly affect the environment of other nations or the global commons to take environmental considerations into account for that action.

- a. Does the proposed project involve a bridge connection to Canada or Mexico?

☐ Yes ☐ No

If yes, cite location(s) in NEPA document where environmental effects abroad are described:

3. **Clean Water Act** - Section 401 of the Clean Water Act of 1977(CWA) (33 U.S.C. 1251), as amended, prohibits Federal permitting or licensing agencies from issuing authorizations for construction activities having discharges into navigable waters, until the appropriate water quality certifying agency has issued a water quality certification or waiver procedures have been satisfied.

- a. Has a Water Quality Certification (WQC), waiver or statement that the WQC is not required been obtained from the appropriate federal, interstate, or state agency?

☐ Yes ☐ No

If yes, cite location(s) in the application package:

NOTE: The USCG will not accept an application package as complete if a WQC, waiver, or statement from the appropriate regulatory body has not been obtained.

- b. Name of the Federal, State or Tribal certifying agency and point of contact with phone and email address, if available:
- c. If the WQC is granted under a Programmatic Agreement (e.g., U.S. Army Corps of Engineers (USACE) Nationwide Permit (NWP) include the date of the NWP, the type of NWP (14, 15, etc.) and the NWP number and title:
- d. For permit amendment actions, include a new WQC or a written confirmation from the certifying agency that the existing WQC has been reissued/renewed or is still valid for the proposed action.

☐ New WQC Attached

☐ Written Confirmation of WQC validity attached

4. **Wetlands** - Executive Order 11990 - Protection of Wetlands, states that no federally approved project will occur in wetlands unless there is no practical alternative to constructing in the wetlands. As a result, the Coast Guard must analyze alternative locations which avoid taking wetlands. If no alternative locations or designs are practicable, then the Coast Guard must ensure that the project design includes all practicable measures to minimize wetland impacts.

- a. Is the proposed project located in or adjacent to a wetland?

☐ Yes ☐ No

- b. If yes, what is the acreage of wetlands that will be permanently and temporarily impacted by the proposed project?

Include USACE permit (nationwide authorization or individual), if required, and cite where wetland mitigation measures are described in the application package:

5. **Coastal Zone Management Act** - The Coastal Zone Management Act (CZMA) of 1972 (16 U.S.C. § 1451), as amended, and its implementing regulations (15 CFR Part 930), requires all projects located within the designated coastal zone of a state to be consistent with the State's federally approved CZM plan (CZMP).

a. Is the project located in a state that has an approved CZMP?

☐ Yes ☐ No

b. If yes, is the project within an area included in the federally approved CZMP?

☐ Yes ☐ No

c. If yes, has the State specifically excluded this activity from its federally approved CZMP?

☐ Yes ☐ No

Include State CZM concurrence/with consistency certification and cite location(s) in the application package:

6. **Floodplains** - Executive Order 11988, Floodplain Management and Protection, requires Federal agencies to avoid authorizing projects in the base floodplain unless there is no practical alternative. By their very nature, most bridges are located within the base floodplain. Therefore, the Coast Guard must ensure that the project design includes all measures practicable to minimize floodplain impacts and to protect the natural and beneficial values of the floodplain.

a. Is the proposed project located in the base floodplain? An encroachment into the base floodplain does not exist when only the piers, pilings, or pile bents are located in the floodplain.

☐ Yes ☐ No

b. Is there a significant encroachment (constituting a considerable probability of loss of human life; likely future damage associated with the encroachment that could be substantial in cost or extent; or a notable adverse impact on natural and beneficial floodplain values) into the floodplain?

☐ Yes ☐ No

c. If yes, provide documentation and cite location(s) in the application package:

7. **Wild and Scenic Rivers** - Section 7 of the Wild and Scenic Rivers Act of 1968 (16 U.S.C. § 1271), as amended, prohibits the issuance of any federal permit for construction of projects having adverse impacts on a river, or a proposed river, with values qualifying it for protection under this act.

- a. Is the river involved in the proposed bridge project a designated Wild and Scenic River?

☐ Yes ☐ No

- b. If yes, attach correspondence with the river-administering agency and cite location(s) in the application package:

8. **Coastal Barrier Resources Act** - The Coastal Barrier Resources Act (CBRA) established the Coastal Barrier Resources System and restricted federal expenditures that encourage development in such areas unless the project falls under an exception to the CBRA.

- a. Does the proposed project connect to a unit of the Coastal Barrier Resources System?

☐ Yes ☐ No

- b. If yes, and the project is federally funded, cite location of Section 6 exception in the application package and any correspondence with the FWS:

9. **Land and Water Conservation Fund Act** - Section 6(f) of the Land and Water Conservation Fund Act (LWCFA) assures that once an area has been funded with LWCFA assistance, it is continually maintained in public recreation use unless NPS approves substitution property of reasonably equivalent usefulness and location and of at least equal fair market value. The Secretary must approve all conversions of property acquired or developed with LWCFA assistance under this section to other than public outdoor recreation uses.

- a. Does the proposed project involve a conversion of land or facilities funded under Section 6(f) of the LWCFA?

☐ Yes ☐ No

- b. If yes, include correspondence with the NPS and authorization from the Secretary of the Interior for that conversion and cite location(s) in the application package:

10. **National Marine Sanctuaries Act** - Section 304(d) of the National Marine Sanctuaries Act (16 U.S.C. § 1434(d)) requires interagency consultation between NOAA and federal agencies taking actions, including authorization of private activities, "likely to destroy, cause the loss of, or injure a sanctuary resource."

- a. Is the proposed project in or adjacent to a National Marine Sanctuary?

☐ Yes ☐ No

- b. Is the proposed bridge(s) likely to destroy, cause loss of, or injure a resource of a National Marine Sanctuary? (If no, provide evidence)

☐ Yes ☐ No

- c. If yes, include evidence of consultation with Office of National Marine Sanctuaries

and the agency's findings/conditions and cite location(s) in the application package:

11. **Marine Protected Areas** - Executive Order 13158 requires each Federal agency whose actions affect the natural or cultural resources that are protected by a Marine Protected Area (MPA) to identify such actions and, to the extent permitted by law and to the maximum extent practicable, avoid harm to the natural and cultural resources that are protected by an MPA.
 - a. Is the proposed project in or adjacent to a MPA as defined in section 4(d) of Executive Order 13158?
☐ Yes ☐ No
 - b. If yes, will the proposed project affect the natural or cultural resources that are protected by the MPA? (If no, provide evidence)
☐ Yes ☐ No
 - c. If yes, include evidence of correspondence with MPA Center, if applicable, and cite location(s) in the application package:
12. **Endangered Species Act** - Section 7 of the Endangered Species Act of 1973 (ESA) (16 U.S.C. § 1531), as amended, requires each Federal agency to insure that any action authorized, funded, or carried out by the agency is not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of critical habitat.
 - a. Are there federally designated threatened or endangered species and/or critical habitat in the area that the proposed project is located? (If no, provide evidence)
☐ Yes ☐ No
 - b. May the proposed project affect federally designated threatened or endangered species and/or critical habitat? (If no, provide evidence)
☐ Yes ☐ No
 - c. If yes, was there formal or informal consultation with the United States Fish and Wildlife Service (USFWS) or the National Marine Fisheries Service (NMFS)?
☐ Formal consultation
☐ Informal consultation
 - d. If formal, provide date(s) and attach biological assessment, biological opinion, and any other relevant correspondence and cite location(s) in application package:
 - e. If informal, provide dates and include correspondence or documented phone conversations with and from USFWS/NMFS and cite location(s) in the application package:

f. Include Biological Assessment/Biological Evaluation, as appropriate.

13. **Fish and Wildlife Coordination Act** - The Fish and Wildlife Coordination Act (FWCA) (16 USC § 742, et seq.) provides the basic authority for the USFWS' involvement in evaluating impacts to fish and wildlife from proposed water resource development projects. It requires that fish and wildlife resources receive equal consideration to other project features. It also requires Federal agencies that construct, license or permit water resource development projects to first consult with the Service (and NMFS in some instances) and the State fish and wildlife agency regarding the impacts on fish and wildlife resources and measures to mitigate these impacts.

a. Include any correspondence with USFWS and the relevant state wildlife agency regarding FWCA coordination and cite location(s) in the application package:

14. **Magnuson-Stevens Fishery Conservation and Management Act** - The Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) (16 U.S.C. § 1855), as amended, requires Federal agencies which fund, permit, or carry out activities that may adversely impact Essential Fish Habitats (EFH) to consult with the National Marine Fisheries Service (NMFS) regarding potential adverse effects of actions on EFH. Will the proposed project likely adversely affect designated EFH as defined in the Magnuson-Stevens Act? (If no, provide evidence)

☐ Yes ☐ No

b. Identify location of EFH assessment and relevant correspondence with NMFS in the application package.

15. **Marine Mammal Protection Act** - The Marine Mammal Protection Act (MMPA) (16 USC § 1361, et seq.) prohibits, with certain exceptions, the take of marine mammals in U.S. waters and by U.S. citizens on the high seas, and the importation of marine mammals and marine mammal products into the U.S. If a take may occur, an Incidental Take Authorization may be necessary.

a. Does the proposed project involve a "take" of marine mammals as defined in the MMPA?

☐ Yes ☐ No

b. If yes, include the incidental harassment authorization or letter of authorization from NMFS and any relevant correspondence and cite location(s) in the application package:

16. **Migratory Bird Treaty Act** - Migratory Bird Treaty Act (MBTA) (16 U.S.C. § 703-712) made it illegal to take any migratory bird, nest, egg, or part or any bird protected under the Act except under the terms of a valid permit issued by the USFWS.

a. Does the proposed project involve a potential take of migratory birds as defined in the MBTA? (If no, provide evidence)

☐ Yes ☐ No

b. If yes, is a permit required?

☐ Yes ☐ No

c. If a permit is required, include it and any correspondence with USFWS and cite location(s) in the application package:

17. **Bald and Golden Eagle Protection Act** - The two species of eagles that are native to the United States have additional protection under the Bald and Golden Eagle Protection Act (BGEPA)(16 USC § 668-668c). USFWS issues permits to take, possess, and transport bald and golden eagles.

a. May the proposed project take or disturb bald or golden eagles (including nests) as defined in the BGEPA? (If no, provide evidence)

☐ Yes ☐ No

b. If yes, is a permit required?

☐ Yes ☐ No

c. If a permit is required, include it and any correspondence with USFWS and cite location(s) in the application package.

18. **Invasive Species** - Executive Order 13112 – Invasive Species required each Federal agency whose actions may affect the status of invasive species to prevent the introduction of invasive species and not authorize, fund, or carry out actions that it believes are likely to cause or promote the introduction or spread of invasive species.

a. Does the proposed project have potential to introduce or foster the spread of invasive species?

☐ Yes ☐ No

b. If yes, cite the document that describes measures that will be taken to minimize this risk and location(s) in the application package:

19. **Section 106** - Section 106 of the National Historic Preservation Act of 1966 (54 U.S.C. § 306108 et seq.), as amended, requires that federal agencies take into account the effects of their undertaking on sites, structures, etc. listed in the National Register of Historic Places.

a. Does the proposed project have potential to impact properties (including submerged abandoned shipwrecks) listed in or eligible for inclusion in the National Register of Historic Places?

☐ Yes ☐ No

b. If yes, provide evidence of consultation with the State Historic Preservation Officer (and the Advisory Council on Historic Preservation, if applicable) and cite location (s) in the application package. Include:

- ☐ Copies of the correspondence
- ☐ Memorandum of Agreement
- ☐ No effect determination

c. For projects involving Federal lands only provide:

- ☐ Archeological clearances
- ☐ Archeological reports

20. **Clean Air Act** - Section 176(c) of the Clean Air Act (CAA)(42 U.S.C. § 7401,as amended), prevents the Coast Guard from approving any project or from issuing any permit for actions not conforming to the provisions of an approved Federal Implementation Plan (FIP) or to a State Implementation Plan (SIP).

a. Does the proposed project occur in an area of nonattainment or maintenance for any criteria pollutant?

- ☐ Yes ☐ No

b. If project occurs in a nonattainment or maintenance area, do the transportation or general conformity regulations, or both, apply?

- ☐ General ☐ Transportation

c. Is the project exempt from a transportation conformity analysis for any of the reasons listed in 40 CFR § 93.126? Which reason?

- ☐ Yes ☐ No Reason:

d. Is the project exempt from a general conformity analysis for any of the reasons listed in 40 CFR § 93.153(c)?

- ☐ Yes ☐ No

e. If general conformity applies, is the project listed in a conforming SIP?

- ☐ Yes ☐ No

f. If a general conformity determination was prepared, include the draft and final determinations and any relevant correspondence and cite their location(s) in the application package:

g. If transportation conformity applies, is the project listed in a conforming SIP, TIP, RTP, or FIP?

- ☐ Yes ☐ No

h. If yes, cite location of information regarding listing in the application package:

- i. If transportation conformity applies, does the project contribute to any new localized CO, PM₁₀, or PM_{2.5} violations or increase the frequency or severity or any existing violations of the same?

☐ Yes ☐ No

- j. If yes, cite location of information in the application package:

21. **Actions to Address Environmental Justice in Minority or Low-Income Populations** -

Executive Order 12898 requires all Federal agencies to ensure that environmental justice consideration is part of their missions by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority and low-income populations in the United States and its territories and possessions.

- a. Does the proposed project involve disproportionate adverse impacts to minority and/or low-income populations as defined in Executive Order 12898?

☐ Yes ☐ No

- b. If yes, include the analysis describing the impacts and cite location(s) in the application package:

- c. If yes, cite the location in the application package that describes measures to be taken to reduce those impacts:

22. **Hazardous Materials, Substances or Wastes**

- a. Does the proposed project involve or is it located near a Superfund site or any site regulated under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), Resource Conservation and Recovery Act (RCRA) or State law regulating hazardous materials, substances or wastes?

☐ Yes ☐ No

- b. If yes, cite the location(s) in the NEPA document where hazardous materials, substances or wastes are discussed:

C. PLAN SHEETS - Plans submitted with the bridge permit application become an official, and permanent, part of the issued permit or permit amendment. To minimize delays, provide the following information:

1. Plan Sheet Checklist - Use the following checklist for specifics to include with bridge plans:

a. **General**

_____ Provide all plans in standard 8 ½ X 11” size, providing the fewest sheets possible that still show significant project structural details. Plan sheets may be submitted electronically.

NOTE: Do not show bridge navigational lighting plans on bridge plan and elevation views.

_____ Show all dimensions and distances in U.S. linear feet in decimal form (versus feet and inches). For international bridges also show all dimensions in both linear feet and meters.

_____ Include the datum used in the plan and elevation view. Use the same datum for all submitted drawings (e.g. NAVD, NGVD). For replacement and modification projects, the datum used may differ between the new plans and the previously approved plans for the existing structure. If this situation occurs, please be sure to show all necessary conversions to demonstrate any change in approved clearances.

_____ All plan sheets must bear the date, signature and stamp of a professional engineer.

NOTE: the engineer stamp date must either match or be dated later than the title block date before the permit and plans can be approved by the Coast Guard.

If desired, it is acceptable for the engineer to add the following statement to the plans, “Conceptual plans utilized to obtain Coast Guard bridge permit”.

_____ The total number of plan sheets identified in the title block must match the number of plan sheets submitted for approval.

- b. **Title Blocks** - Include the following items in the title blocks (lower right-hand corner on all of the plan sheets):

_____ Applicant/Owner;

_____ Consultant/Agent;

_____ Name of Bridge(s);

_____ Name of Waterway;

_____ Mile point of bridge(s) location (from confluence of mouth of waterway) in

statute miles;

- _____ City, county/parish, and state (state whether the bridge(s) is at, near, or between – as appropriate);
- _____ Date of plans (i.e., mm/dd/yyyy, must either match or be dated prior to the engineer's date stamp); and
- _____ Sheet number and total number of sheets in set to be approved (i.e., Sheet 1 of 5).

c. **Location/Vicinity Map**

- _____ Show graphic scale and north arrow;
- _____ Show location of bridge(s) on waterway;
- _____ Identify the name of the waterway;
- _____ Show course of waterway (i.e. ebb/flood, or direction of flow for non-tidal waters);
- _____ Show structures immediately adjacent to the proposed bridge(s) and their relation to the proposed bridge(s);
- _____ Identify wildlife and waterfowl refuges and any historical and archaeological sites; and
- _____ Insert a small map of the state in which the project is located with an arrow showing the location of the proposed project.

d. **Plan View**

- _____ Show graphic bar scale and north arrow;
- _____ Identify the adjacent property owners at the four corners of the proposed structure(s);
- _____ Show existing shorelines (may be defined or established by local or state regulation);
- _____ Show ebb and flood in tidal waters and direction of flow in non-tidal waterway;
- _____ Show mean high and low waterlines in tidal areas. Show ordinary high water and ordinary low water elevations if proposed activity is in a non-tidal waterway;
- _____ Show all portions of existing bridge(s) that will remain in place;
- _____ Show all portions of existing bridge(s) that will be removed by using dashed lines;
- _____ Show principal dimensions of structure(s) from grade-to-grade. Show length,

width, etc.;

- _____ Show location of dredging, excavation, fill or rip-rap, to include approximate number of cubic yards. Note: The Coast Guard does not approve these activities or items. Contact the U.S. Army Corps of Engineers for approval;
- _____ Show location of the bridge protective system, piles, cables, etc. existing or to be constructed in the waterway. Identify type of material to be used;
- _____ Show limits of navigational channel;
- _____ Show axis (centerline) of channel;
- _____ Show horizontal clearances, normal to the axis (centerline) of the channel between the bridge protective system, pilings, or abutments;
- _____ Show water depth at mean low (or ordinary low if non-tidal) at various locations in the channel, under, upstream and downstream of the bridge(s); and
- _____ Show the bridge protective system.

e. **Elevation View**

- _____ Show graphic bar scale and north arrow;
- _____ Show mean high and mean low water elevations in tidal areas. Show ordinary high and low water elevations in non-tidal areas;
- _____ Show amount of fill material in cubic yards below mean high water;
- _____ Show horizontal clearance normal to the axis (centerline) of the channel between the bridge protective fender system, pilings, or abutments, as appropriate for navigational channel;
- _____ Show vertical clearances referenced to the appropriate high water stage either Mean High Water (MHW) or Ordinary High Water (OHW). Show vertical clearances at the center, as well as at the horizontal limits of the navigational channel (the most restrictive vertical clearance in the navigational channel);
- _____ If the bridge(s) will have a draw, show the draw in the open and closed positions. Vertical clearances in the open position might not be unlimited, especially for vertical lift bridges and bascule bridges. For bascule bridges, specify which part of the navigation channel has an unlimited clearance in the open position i.e. the center 50 feet of the channel, etc;
- _____ Show proposed navigational envelope (opening);
- _____ Show proposed and existing contour of waterway bottom;
- _____ Show 100-year flood elevation;

- _____ Show the location and elevation of the low steel member of the navigation span; and
- _____ If the bridge(s) will have a permanent traveler system installed for inspection/maintenance, show the reduction in vertical clearance (traveler height below low steel) and the location of traveler storage when not in use.

f. **Typical Section View**

- _____ Show graphic bar scale;
- _____ Show out-to-out width of the structure(s). (This is the width of the bridge(s) at its widest point.); and
- _____ Include location and dimensions of travel lanes, shoulders, sidewalks, fishing/pedestrian platforms, railings, pipelines, etc.

g. **Details of the Bridge Protective System** (if details are known and ready for CG approval as part of the permit decision)

- _____ Show bridge pier protective system in plan and elevation views including detail of attachment to pier, countersunk bolts, and relationship to mean high and low waterlines (on elevation view).

h. **Temporary Structures/Falsework** (if details are developed and ready for CG approval as part of the permit decision)

- _____ Show temporary structures/falsework;
- _____ Show existing bridge(s) to be removed using dashed lines; and
- _____ Show minimum horizontal and vertical clearances during construction.

WHEN APPLICABLE, PLEASE SUBMIT THE FOLLOWING PERMIT PLAN SHEETS SEPARATELY (do not include the sheets below in the same sequentially numbered package of sheets provided for bridge approval):

- i. **Details of the Bridge Protective System** (if details and materials are not known at time of CG permit decision)

_____ Show bridge protective system in plan and elevation views including detail of attachment to pier, countersunk bolts, and relationship to mean high and low waterlines (on elevation view).

- j. **Temporary Structures/Falsework** (if details and materials are not known at time of CG permit decision)

_____ Show temporary structures/falsework;

_____ Show existing bridge(s) to be removed using dashed lines; and

_____ Show minimum horizontal and vertical clearances during construction.

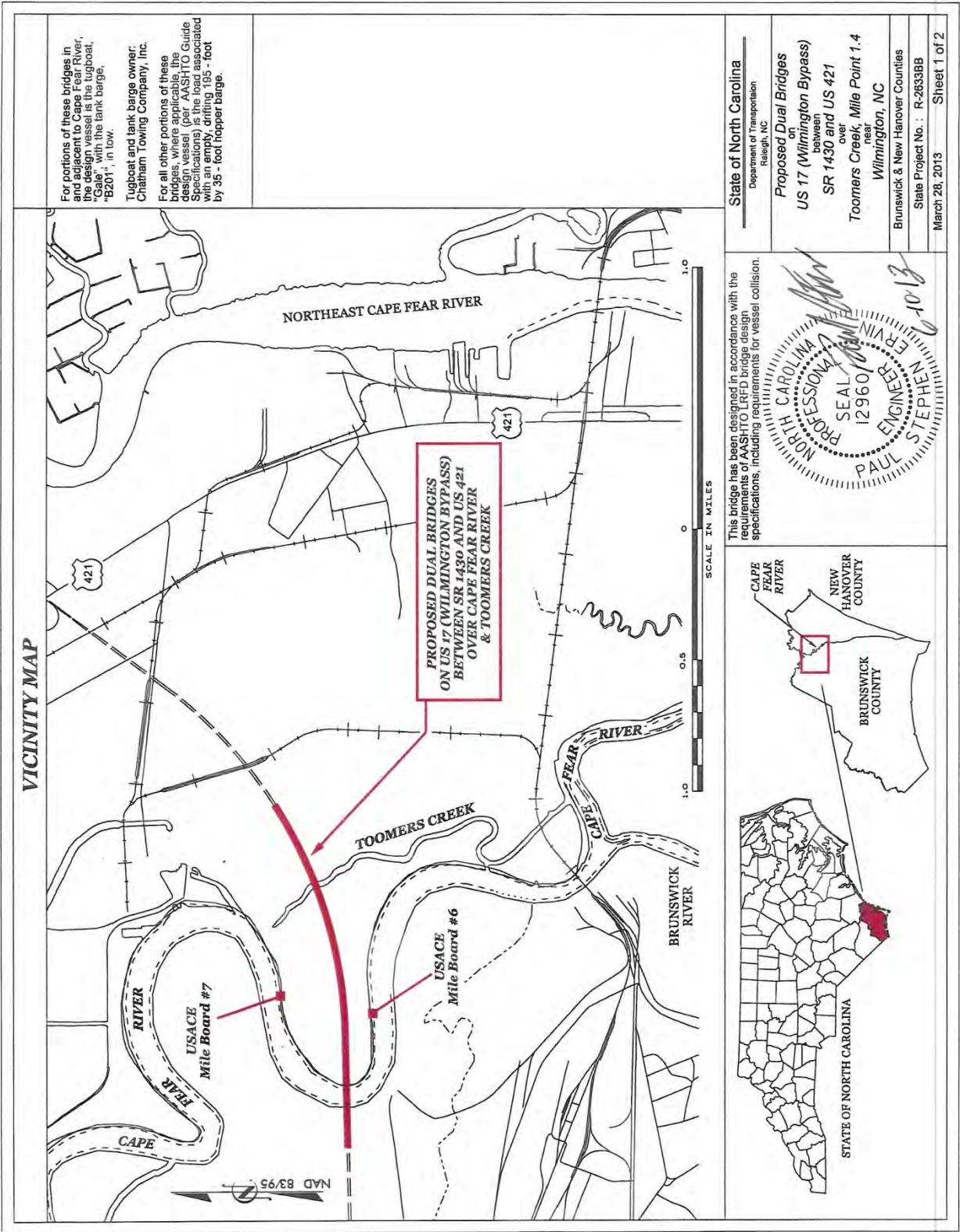
- k. **Bridge Lighting Plan**

_____ Submit lighting plan application in accordance with 33 CFR Part 118 and bridge lighting guide (see USCG Bridge Program website: <http://www.uscg.mil/hq/cg5/cg551/default.asp>). This is a separate application from the bridge permit application. The submission time can vary by District Bridge Office. Applicants should contact their local District Bridge Office to determine at what point is appropriate to submit a bridge lighting plan.

2. SAMPLE PLANS FROM VARIOUS PROJECTS SUBMITTED FOR APPROVAL

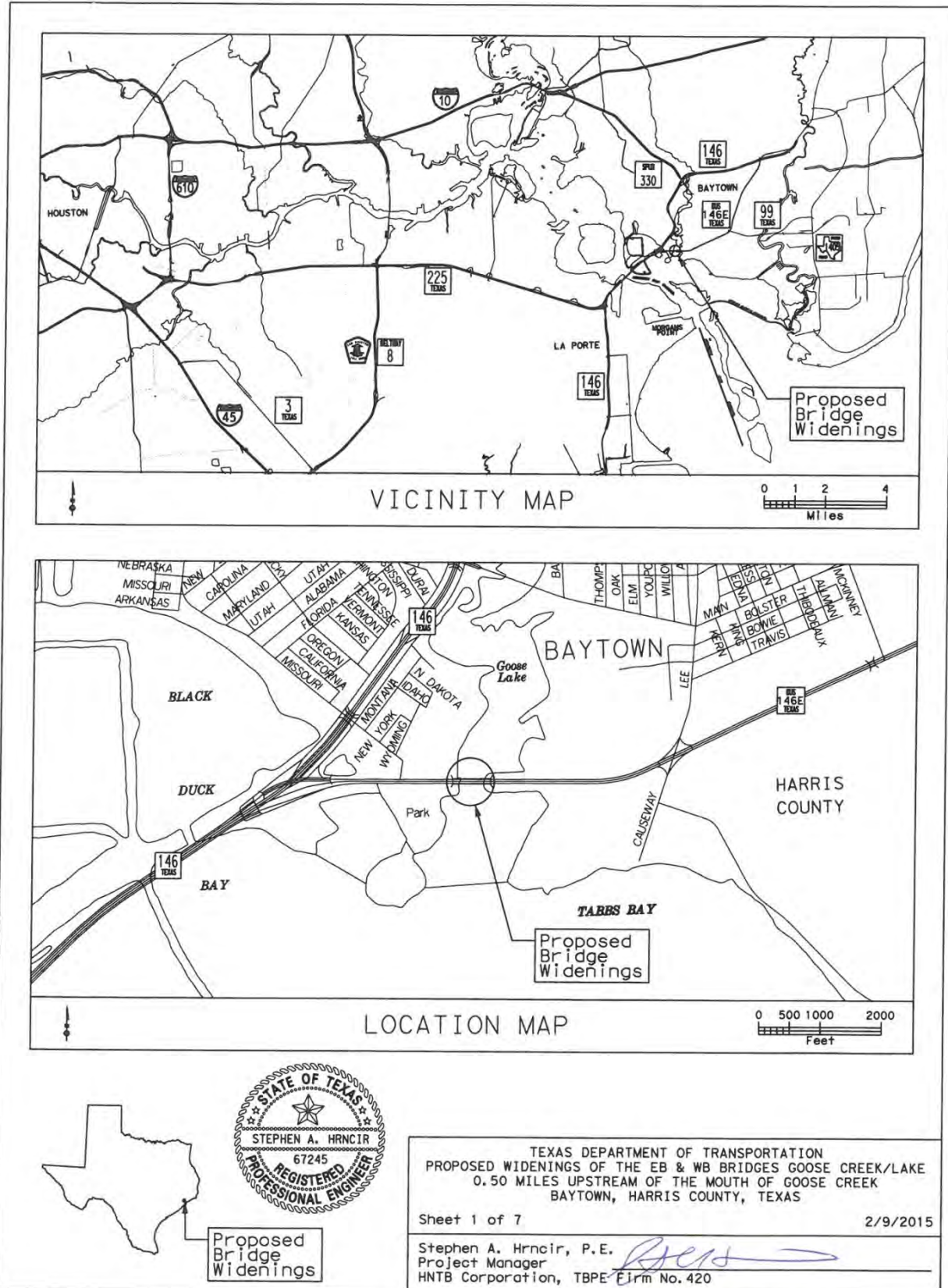
Example 2.1

Location and Vicinity Maps



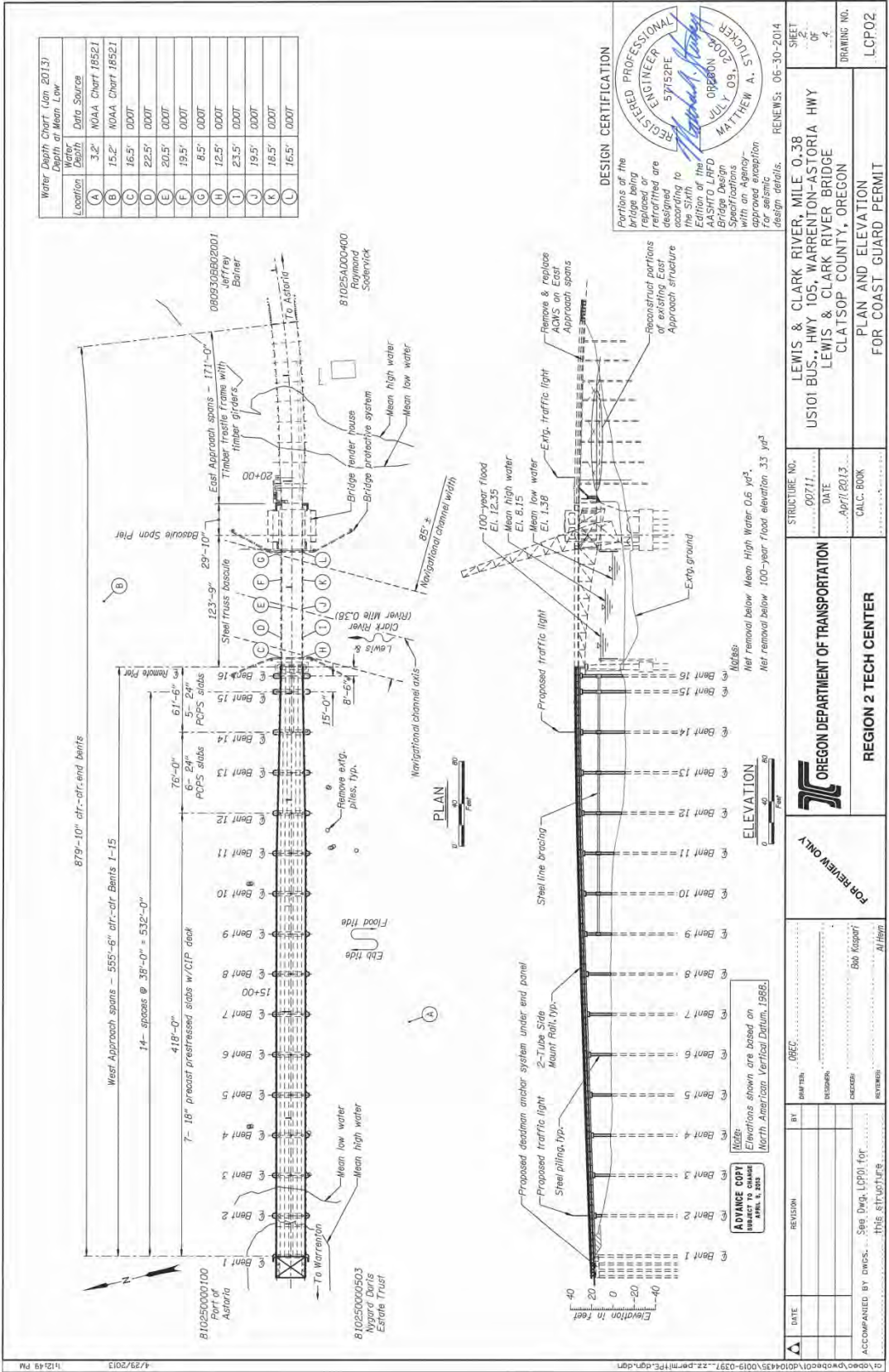
Example 2.2

Combined Vicinity and Location Map



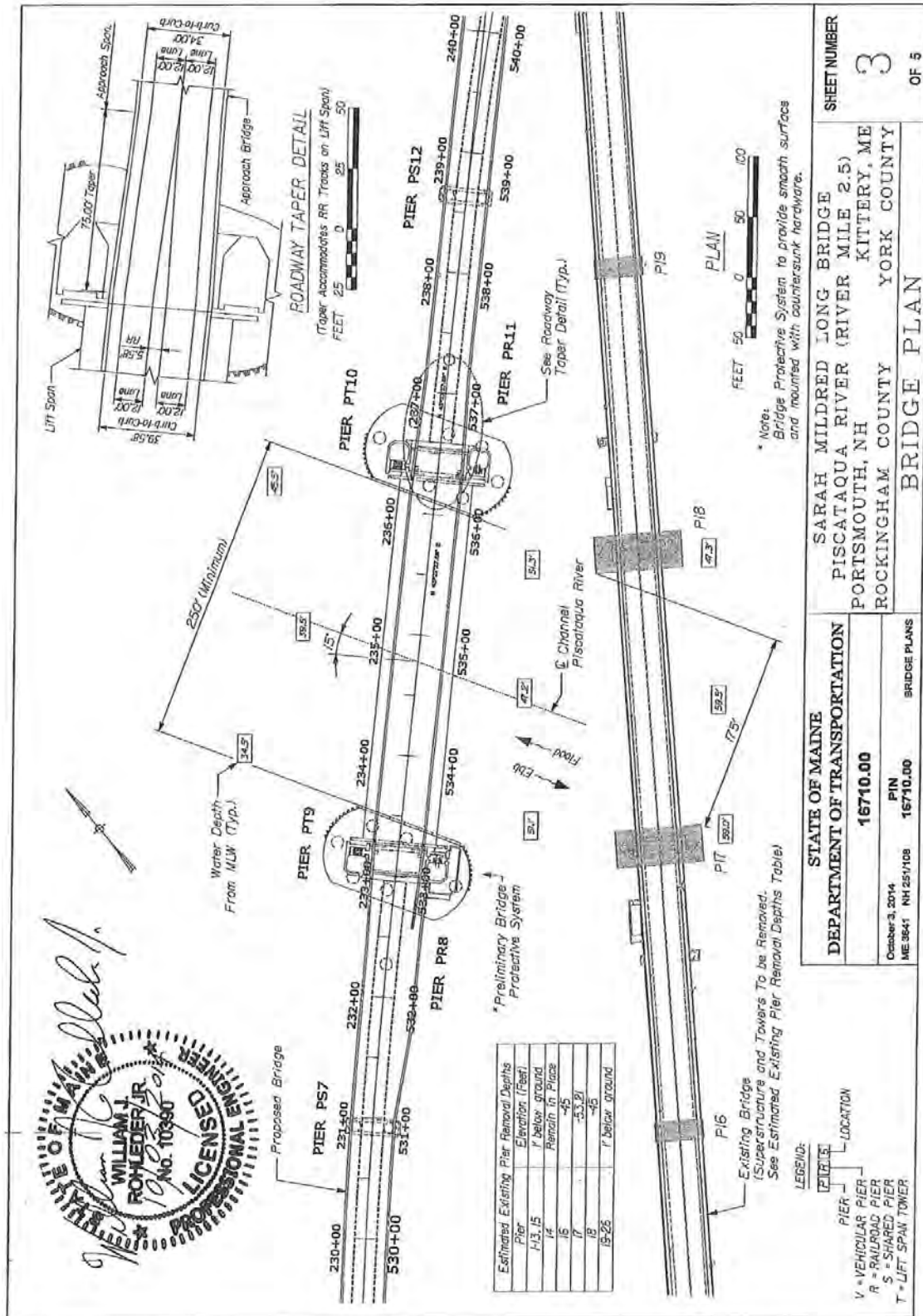


Example 2.5
Combined Plan and Elevation Views



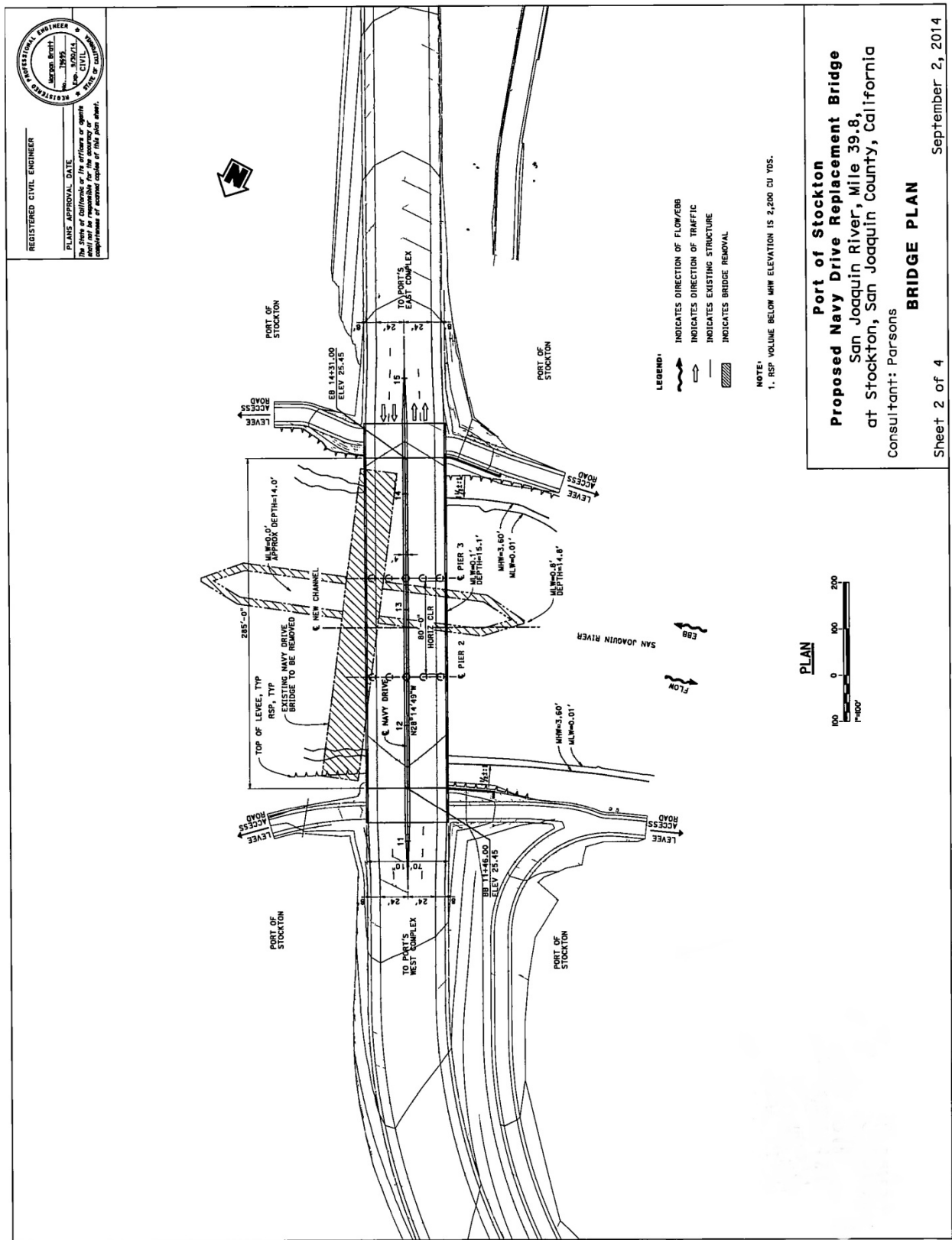
Example 2.6

Plan View



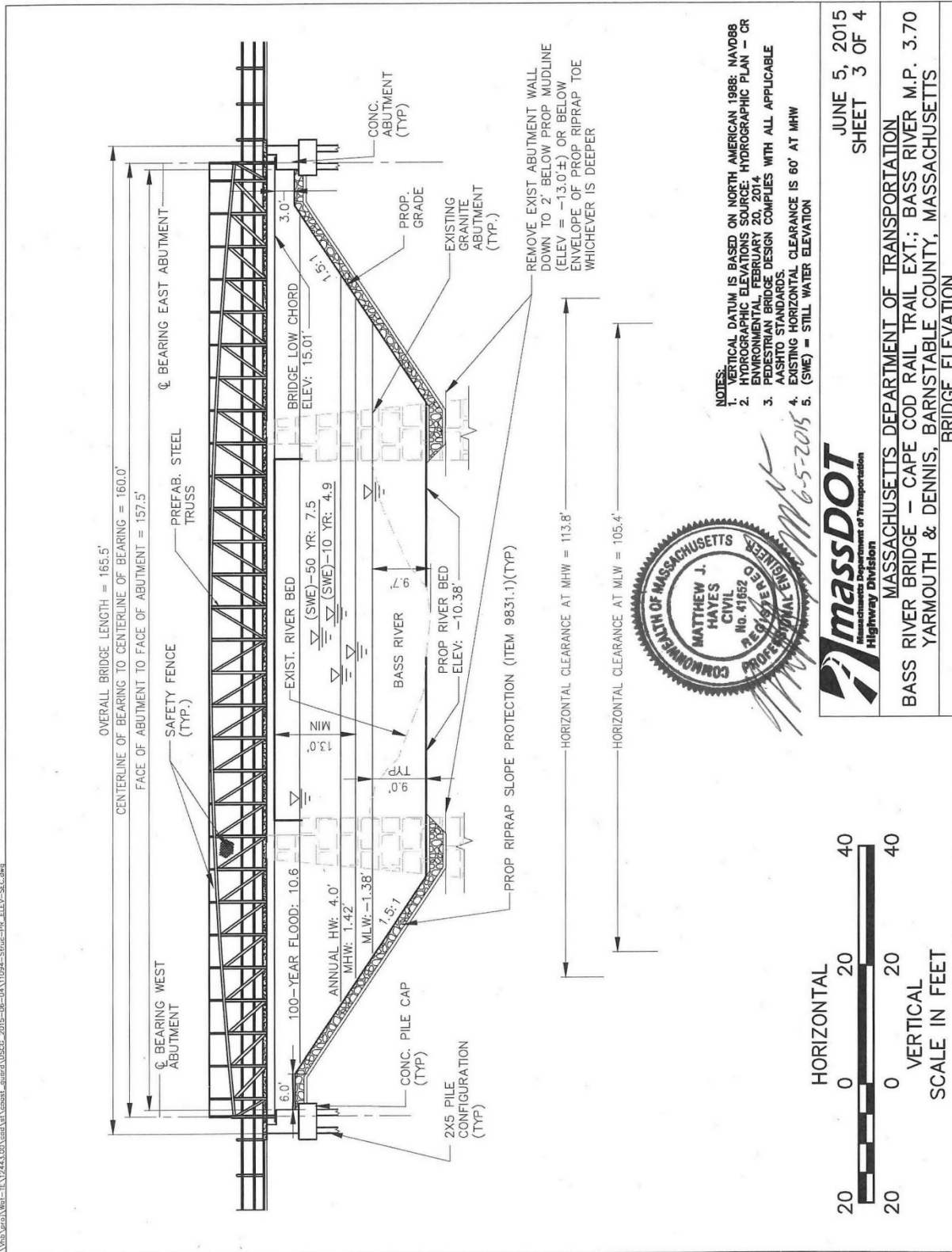
Example 2.7

Plan View

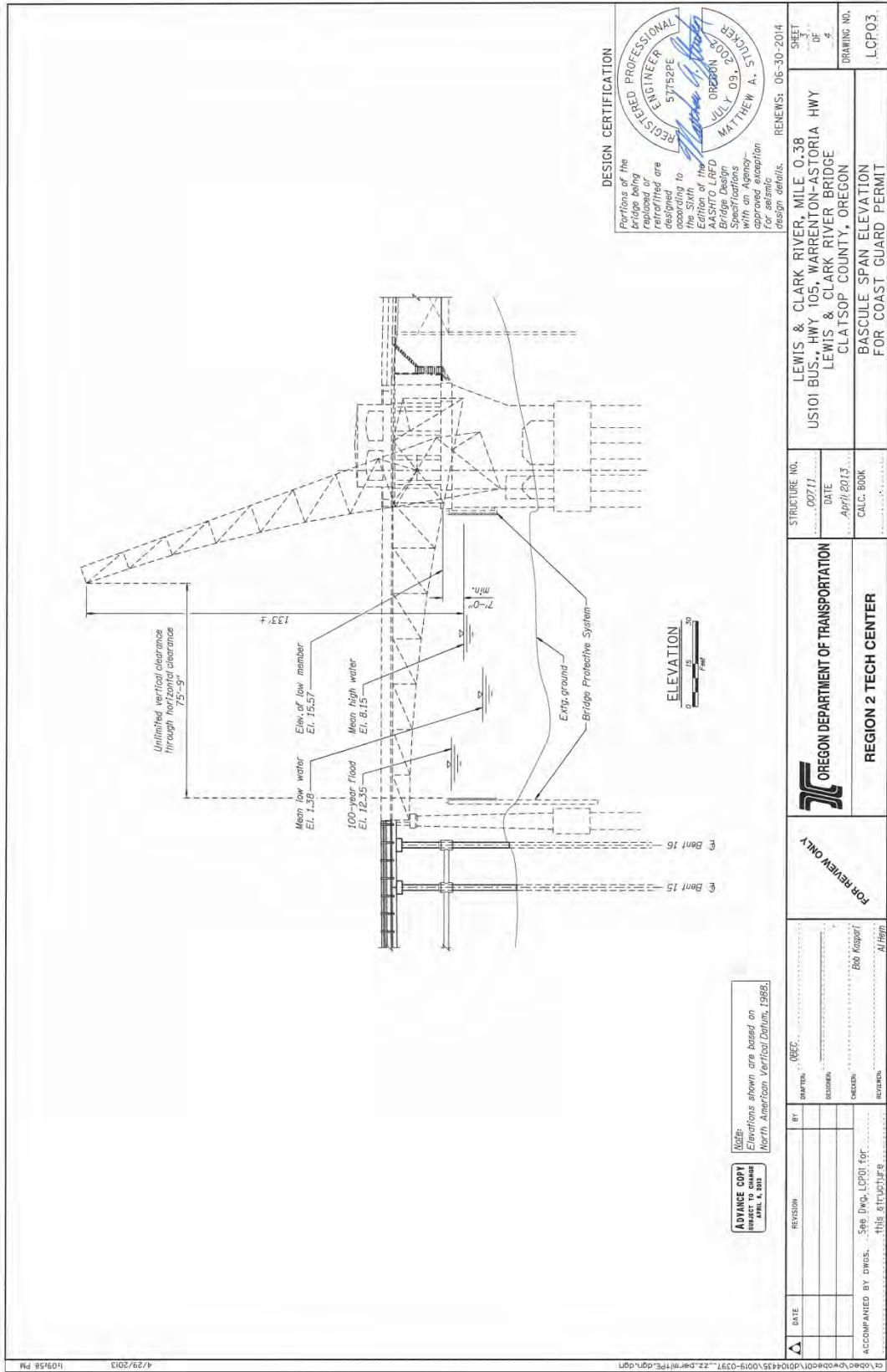


Example 2.8

Elevation View

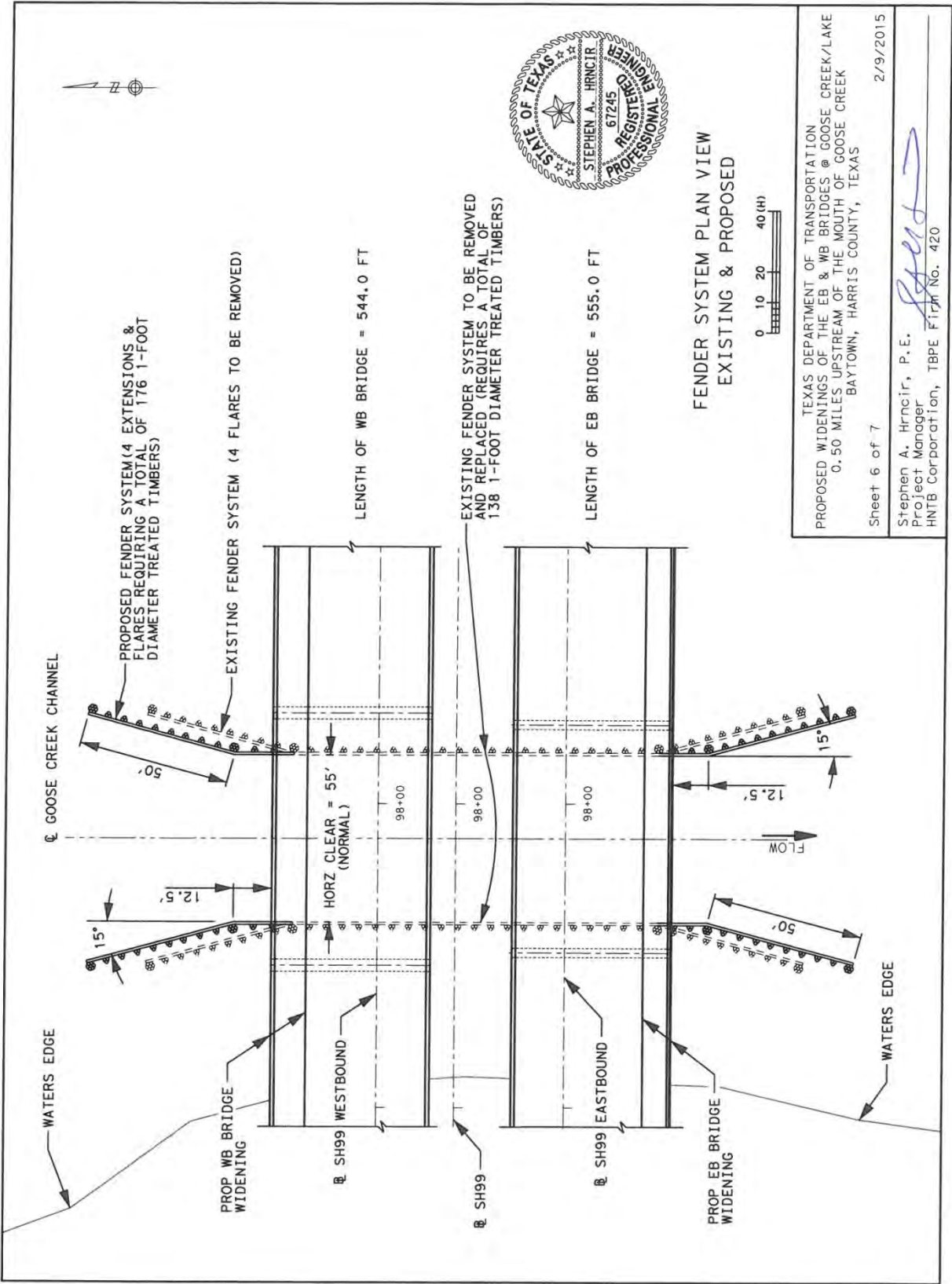


Example 2.9
Elevation View



Example 2.11

Bridge Pier Protection System





APPENDIX A: WATERWAY DATA REQUIREMENTS

This appendix identifies the detailed elements, to include guide clearances on waterways, which are considered on a case-by-case basis when making a determination based on the reasonable needs of navigation.

The Coast Guard Bridge Program ensures Marine Safety, Security, and Stewardship and contributes to the freedom of navigation and the nations Marine Transportation System through its authority to approve the location and plans of all new bridges, modifications of existing bridges, international bridges, and causeways in or over navigable waterways of the United States.

In accordance with 33 CFR § 116.01, “[a]ll bridges are obstructions to navigation and are tolerated only as long as they serve the needs of land transportation while allowing for the reasonable needs of navigation.” Authority for the permitting process is found in 33 U.S.C. § § 401, 491, 525-533, the International Bridge Act of 1972 and various acts of Congress. Pursuant to the Rivers and Harbors Act, 33 U.S.C. § 401 “No bridge shall at any time unreasonably obstruct the free navigation of any navigable waterway of the United States.” In addition, per 33 U.S.C. § 494 “No bridge erected or maintained under the provisions of sections 491 to 498 of this title, shall at any time unreasonably obstruct the free navigation of the waterway over which it is constructed.”

It is important to note that initial determinations of reasonable needs are based on facts and circumstances at the time of the proposal and may later be unreasonable if facts and circumstances surrounding the proposal change over time or are discovered during the permit application and public notice process.

Navigation Impact Report

The permitting improvement provisions found in the 2014 Memorandum of Understanding between the U.S. Coast Guard, the Federal Highway Administration, the Federal Transit Administration, and the Federal Railroad Administration requires applicants with Department of Transportation funded projects prepare a navigation impact report in order to analyze the navigational impacts of the bridge design alternatives. Submission of this report is highly encouraged for all other applicants to avoid delays and head off potential conflicts in the permit application process.

Navigation impact reports provide the most accurate picture of current and prospective navigation on a waterway. The project sponsor or potential permit applicant prepares the report early in project planning, and updates periodically during project development because waterways and waterway usage are dynamic and may change over time.

Before preparing a navigation impact report, contact the Coast Guard District Bridge Office to determine what data is required for the application.

A. Means of Data Collection

1. The Coast Guard and applicants can use a variety of tools to gather information to assist

in the determination of appropriate bridge navigational clearances, to include, but not limited to:

- a. Conducting site visits and ride-alongs with qualified vessel operators on the waterway, obtaining firsthand knowledge of navigational needs through the proposed bridge site;
 - b. The Coast Guard issues a public notice to solicit comments for navigational concerns;
 - c. The Coast Guard advertises the bridge project in the Local Notice to Mariners;
 - d. Conduct waterway user surveys;
 - e. Conduct a waterways study (typically applicant-prepared);
 - f. The Coast Guard reviews navigational information in the environmental documentation prepared by the applicant;
 - g. The Coast Guard reviews bridge tender logs;
 - h. Conduct public meetings;
 - i. Consult with and conducting interagency meetings;
 - j. Consult guide clearances for the waterway;
 - k. Contact regional planning interests for current and future plans that will impact the waterway;
 - l. Consult USACE methodology in USACE Engineer Manuals EM-1110-2-1611 and EM-1110-2-1613 for determining horizontal and vertical clearance requirements (see Enclosure (2) for sample methodology);
 - m. Consult with local Coast Guard Sectors, Captains of the Port, Coast Guard Stations and Coast Guard Cutters prior to making navigation determinations since they offer a wealth of professional experience in navigational issues; and
 - n. When available, waterborne commerce statistics (collected by the U.S. Department of Commerce) should be reviewed and incorporated into the waterway evaluation as they provide cargo volumes and vessel trips for commercial shipments by waterway reach.
2. The Coast Guard will make every effort to involve members of the navigation community and other interested or affected parties early in the Coast Guard Bridge Program consideration of navigational needs. It is also imperative that dialogue be maintained with the navigational community all throughout project development and approval processes so that changes in waterway usage, particularly during lengthy project developments, are documented and included in design decision making.

Navigation impact reports should identify and/or consider:

B. Present governing bridge(s) or aerial structure(s) on the waterway:

1. Identify all bridges upstream and downstream of the proposed bridge site and their existing horizontal and vertical clearances to determine the existing minimum horizontal and vertical clearances (including overhead transmission line clearances). Provide in table format.

(If all bridges downstream have the same minimum clearance, state instead of the above requested information.)

2. Does the proposed bridge(s) match (or is greater than) the navigational clearance of existing structures on the waterway?
3. What is the most restrictive horizontal clearance on the waterway? (This may be a fixed bridge downstream/upstream of the proposed structure, a low hanging power line downstream/upstream of the bridge(s), or it may be some other structure that limits horizontal clearance. Sometimes the existing to-be-replaced bridge(s) is the most restrictive structure.)

a. Milepoint:

b. Horizontal clearance:

4. What is the most restrictive vertical clearance on the waterway? (This may be a fixed bridge downstream/upstream of the proposed structure, a low hanging power line downstream/upstream of the bridge(s), or it may be some other structure which limits vertical clearance. Sometimes the existing to-be-replaced bridge(s) is the most restrictive structure.)

a. Milepoint:

b. Vertical clearance:

5. Will the proposed bridge(s) become the most restrictive/obstructive structure across the waterway?

C. Waterway characteristics: (All domestic bridge navigational clearances should be stated in linear feet in decimal form vs. feet and inches. All international bridge navigational clearances should be stated in linear unit of measure as well as the metric equivalent.)

1. Various waterway stages: (Datum that is used).
2. Natural flow of the waterway including currents, waterway velocity, water direction, and velocity fluctuations (seasonal, daily, hourly, etc.), that might affect navigation.
3. Width of the waterway at bridge site:
4. Depth of the waterway and elevation fluctuations at bridge site: [List the depth at each waterway bridge stage (ex. Range of tides, average high water elevation, etc.)].
5. Waterway layout and geometry: (For example, is there a dam or lock; does the elevation

of the approach impact the required bridge(s) clearance?)

6. Channel and waterway alignment: Location of the channel(s)
7. Other limiting factors: (For example, bends in the waterway within one-half mile of project site, hindrances to free navigation, fog, hydraulics, etc.)

D. Do vessels that engage in emergency operations (i.e., law enforcement, fire, rescue, emergency dam repair, etc.), national defense activities (i.e. cruisers, fuel barges, munitions ships, etc.) or channel maintenance (i.e., dredges, dam and levee repair, etc.) operate on the waterway? If yes, describe the vessels and provide the following information:

1. Does levee maintenance, bridge work (other bridges), channel maintenance and emergency operations upstream of bridge require certain vessels to transit the waterway?
2. Does the proposed bridge(s) impact USCG and/or other government vessels' ability to transit the bridge(s) to conduct mission essential functions (icebreakers, patrols, etc.)?
3. Vessels using the waterway during the proposed bridge(s) lifespan (should include):
 - a. Vessel name;
 - b. Registration/documentation numbers;
 - c. Vessel type;
 - d. Vessel owner contact information (company/individual name, address, contact info.);
 - e. Primary vessel mooring location (include waterway milepoint, if known);
 - f. Vessel overall length;
 - g. Vessel beam;
 - h. Vessel draft (depth of hull below waterline at full load);
 - i. Vessel air draft (height of the highest fixed point of the vessel above the waterline, when empty);
 - j. Specialized vessels that use the waterway (e.g. vessels which have limited maneuverability due to inherent design or mode of operation);
 - k. Safety margin required by vessel to navigate through the bridge(s);
 - l. Vessel transit frequencies under proposed bridge(s), transit speeds, and load configurations; and
 - m. Vessel traffic characteristics (to include if tug assist is required for transit through the bridge(s) due to limited horizontal clearance).

4. Will the proposed bridge(s) provide the horizontal and vertical clearances for the safe, efficient passage of the largest of these vessels? Why?
5. If no, estimate the number of vessels in each of the above categories unable to pass through the proposed bridge(s). Give the name, length overall (LOA), beam, draft and height of highest fixed point above the waterline for vessels affected by the bridge(s).
6. Can these vessels be modified (i.e., folding mast, relocation or equipment, etc.) without decreasing their respective response times? If so, name the vessels.
7. If modifications are feasible, state the name of the vessel(s), their trip frequency, the necessary modifications, the cost of the modification(s) and who will pay for them (i.e., vessel owner, applicant, other).
8. Provide any additional information concerning the potentially impacted or burdened users of the waterway as well as the future use of the waterway.

E. Has the United States Corps of Engineers (USACE) completed or does it plan to complete a federal navigation project on the waterway? If yes, provide the following information:

1. Project name, downstream/upstream milepoints, depth, type of project, scope, status of project and other limiting factors.
2. Whether there is/was a “design vessel” used in planning the channel? What is/was the design vessel? Was the design vessel reviewed by the Coast Guard?
3. The following specifications of the vessel for which the navigation project is or will be designed: LOA, beam, draft and height of highest fixed point above the waterline.
4. Will the proposed bridge(s) provide the horizontal and vertical clearances necessary for the safe, efficient passage of the vessel for which the navigation project was designed?
5. If so, can the vessel be modified to clear the proposed bridge(s) without substantially increasing operating costs?
6. If modifications are feasible, state the necessary modifications, costs of any modification(s), and who will pay for the modifications.
7. Are there projected changes in waterway usage based upon anticipated waterway improvement projects?
8. Does the proposed bridge(s) impact USACE ability to transit the bridge(s) in a Federal project channel?

F. Describe the present and prospective recreational navigation: Will the proposed bridge(s) affect the safe, efficient movement of any segment of the present or prospective recreational fleet operation on the waterway? If yes, provide the following information:

1. Vessels utilizing the waterway during the proposed bridge(s) lifespan. (Information in

this bullet should include:)

- a. Vessel name;
 - b. Registration/documentation numbers;
 - c. Vessel type;
 - d. Vessel owner contact information (company/individual name, address, contact info.);
 - e. Primary vessel mooring location (include waterway milepoint, if known);
 - f. Vessel overall length;
 - g. Vessel beam;
 - h. Vessel draft (depth of hull below waterline at full load);
 - i. Vessel air draft (height of the highest fixed point of the vessel above the waterline, when empty);
 - j. Specialized vessels that use the waterway (e.g., vessels which have limited maneuverability due to inherent design or mode of operation);
 - k. Safety margin required by vessel to navigate through the bridge(s);
 - l. Vessel transit frequencies under proposed bridge(s), transit speeds, and load configurations; and
 - m. Vessel traffic characteristics (to include if tug assist is required for transit through the bridge(s) due to limited horizontal clearance).
2. What is the estimated percentage of the recreational fleet, which may be affected by the proposed bridge(s)?
 3. Will the proposed bridge(s) eliminate the access of these vessels to existing or planned commercial, water-oriented facilities (i.e., restaurants, shops, recreational areas, marinas, etc.) in the vicinity of the proposed bridge(s)? If yes, describe these facilities.
 4. Is it feasible to modify the affected segments of the fleet to clear the proposed bridge(s) without substantially increasing operating costs? If yes, name the vessel(s), state the necessary modifications, cost of modifying each vessel and person or entity responsible for financing the modifications.
 5. Provide any additional information concerning the potentially impacted or burdened users of the waterway as well as the future use of the waterway.

NOTE: Check with local USACE District Office, Chamber of Commerce or other organizations for proposed marinas, recreational areas, shops, etc.

G. Describe the present and waterway and prospective commercial navigation and the cargoes moved on the waterway: Will the proposed bridge(s) affect the safe, efficient movement of any segment of the present or prospective commercial fleet operating on the waterway? If yes, provide the following information:

1. Vessel name;
2. Registration/documentation numbers;
3. Vessel type;
4. Vessel owner contact information (company/individual name, address, contact info.);
5. Primary vessel mooring location (include waterway milepoint, if known); vessel overall length;
6. Vessel beam;
7. Vessel draft (depth of hull below waterline at full load);
8. Vessel air draft (height of the highest fixed point of the vessel above the waterline, when empty);
9. Specialized vessels that use the waterway (e.g. vessels which have limited maneuverability due to inherent design or mode of operation);
10. Safety margin required by vessel to navigate through the bridge(s);
11. Vessel transit frequencies under proposed bridge(s), transit speeds, and load configurations; and
12. Vessel traffic characteristics (to include if tug assist is required for transit through the bridge(s) due to limited horizontal clearance).
13. Does the proposed bridge(s) impact existing and future cruise ship ports-of-call/terminals?
14. Does the proposed bridge(s) impact ports supporting post-Panamax vessels?
15. Does the proposed bridge(s) impact vessels that produce unique products for the region?
16. Does the proposed bridge(s) impact vessels that require helper boats/tugs? (Note the combined clearance requirement of the vessel and the helper boat/tug.)
17. Document annual cargo movements (cargo types and quantities);
18. State the estimated percentage of the commercial fleet, which may be affected by the proposed bridge(s).
19. Will the proposed bridge(s) clearance impact present and/or prospective upstream commercial activity, e.g., jobs and economic growth and development?

20. If yes, address any existing or planned commercial/industrial developments negatively affected by the proposed clearances and discuss the economic impacts the proposed clearances will have on these businesses:

21. Document the foreseeable needs to future navigation;

22. Provide existing and historical navigational use and waterway conditions;

23. Provide input from waterway dependant facilities concerning future use;

24. Describe land use zoning along the waterway (particularly within the riparian zone);

25. Describe future vessel size and traffic trends;

26. Include input from states based on state development plans;

27. Include input from facilities based on business plans;

28. Document local commercial shipping and other businesses affected by this restriction.

Note: the next opportunity to adjust clearances for navigation is usually between 50-100 years unless interim waterway improvement projects include the cost of bridge alterations.

29. Is it feasible to modify the restricted vessels to clear the proposed bridge(s) without substantially increasing operating costs? If yes, name the vessel(s), state the necessary modifications, cost of modifying each vessel and company or entity responsible

30. Provide any additional information concerning the potentially impacted or burdened users of the waterway as well as the future use of the waterway.

H. Identify the name and contact information for marine facilities located within a 3-mile radius of the proposed project (public boat ramps, marinas or major docking facilities, boat repair facilities, etc.):

I. Will the proposed bridge(s) block access of any vessel presently using local service facilities (i.e., repair shops, parts distributors, fuel stations)? If yes, provide the following information:

1. Describe the facilities impacted and estimate the number of vessels currently using these facilities.

a. Vessel information should include the following for each blocked vessel:

1) Vessel name;

2) Registration/ documentation numbers;

3) Vessel type;

4) Vessel owner contact information (company/individual name, address, contact info);

- 5) Primary vessel mooring location (include waterway milepoint, if known); vessel overall length;
 - 6) Vessel beam;
 - 7) Vessel draft (depth of hull below waterline at full load); and
 - 8) Vessel air draft (height of the highest fixed point of the vessel above the waterline, when empty);
2. Could any of these facilities be considered critical infrastructure, key resources, or important/unique U.S. industrial capability (i.e., are these facilities unique or one of only a few of the type in the area?) Address whether the proposed clearances negatively affect those facilities and their customers.
 3. What economic impact will loss of access have on these facilities? Include estimated dollar amount to support Commandant and DHS goals.
 4. What is the distance to alternate service facilities capable of servicing the affected vessels? Describe the facilities.
 5. Will use of these alternate facilities substantially increase vessel operation affected vessels? Describe the facilities.
 6. Is it feasible to modify the affected vessels to clear the proposed bridge(s)?
 7. If yes, state the name, necessary modifications, cost of modifying each vessel and who will pay for the modifications.

J. Are alternate routes bypassing the proposed bridge(s) available for use by vessels unable to pass the proposed bridge(s)? If yes, provide the following information:

1. State the number of vessels that will be forced to use alternate routes.
2. For each vessel identified in section H1.a. above, include the following information:
 - a. Vessel name;
 - b. Registration/documentation numbers;
 - c. Vessel type;
 - d. Vessel owner contact information (company/individual name, address, contact info.);
 - e. Primary vessel mooring location (include waterway milepoint, if known);
 - f. Vessel overall length;
 - g. Vessel beam;
 - h. Vessel draft (depth of hull below waterline at full load);

- i. Vessel air draft (height of the highest fixed point of the vessel above the waterline, when empty); and
 - j. Specialized vessels that use the waterway (e.g., vessels which have limited maneuverability due to inherent design or mode of operation);
3. Identify any alternate routes and provide the respective distances between the proposed bridge(s) and these routes.
4. Will use of these routes substantially increase the transit time and/or operating costs of the affected vessels? This relates to the mobility goals of the Commandant and DHS.
5. If yes, describe the impacts of increased transit time and/or operating costs.
6. Is it feasible to modify these vessels to clear the proposed bridge(s)?
7. If yes, state the name, necessary modifications, cost of modifying each vessel and who will pay for these modifications.

K. Will the bridge(s) prohibit the entry of any vessels to the local harbor of refuge? If yes, describe the harbor and provide the following information:

1. What percentage of vessels currently using the harbor refuge will not be able to pass the proposed bridge(s) to gain access to that refuge? Describe the vessels.
2. Provide vessel information for those vessels identified in J.1.:
 - a. Vessel name;
 - b. Registration/documentation numbers;
 - c. Vessel type;
 - d. Vessel owner contact information (company/individual name, address, contact info.);
 - e. Primary vessel mooring location (include waterway milepoint, if known);
 - f. Vessel overall length;
 - g. Vessel beam;
 - h. Vessel draft (depth of hull below waterline at full load);
 - i. Vessel air draft (height of the highest fixed point of the vessel above the waterline, when empty); and
 - j. Specialized vessels that use the waterway (e.g. vessels which have limited maneuverability due to inherent design or mode of operation);
3. Is it feasible to modify these vessels to clear the proposed bridge(s)?

4. If yes, state the name, necessary modification, cost of modifying each vessel and who will pay for the modifications.
5. If alternate refuges are available, describe them and state the distance of each from the present harbor of refuge.

NOTE: A harbor of refuge is defined as a naturally or artificially protected water area that provides a place of relative safety or refuge for commercial and recreational vessels traveling along the coast or operating in a region.

L. Will the proposed bridge(s) be located within one-half mile of a bend in a waterway? If yes, describe the bend and provide the following information:

1. Is there sufficient distance between the bridge(s) and the bend to allow proper vessel alignment for the safe, efficient passage of vessels through the proposed bridge(s)?
2. If no, what factors make construction of the bridge(s) at an alternate location impractical?

M. Are there other factors (i.e., dockages, lightering areas, existing bridges, etc.) located within one-half mile of the proposed bridge(s), which would create hazardous passage through the proposed structure? If yes, provide the following information:

1. Describe the factors. (For example, construction impacts to navigation and waterway users, etc.)
2. What mitigative measures are being recommended? (For example, navigation safety during construction, etc.) Why?

N. Do local hydraulic conditions (i.e., wave chop, cross currents, tides, shoals, etc.) increase the hazard of passage through the proposed bridge(s)? If yes, provide the following information:

1. Describe the conditions:
2. What mitigative measures are being recommended? Why?

O. Do local atmospheric conditions (i.e., strong, prevailing winds, fog, rapidly developing storms, etc.) increase the hazard of passage through the proposed bridge(s)? If yes, provide the following information:

1. Describe the conditions:
2. What mitigative measures are being recommended? Why?

P. Have guide clearances been established for the waterway? If yes, provide the following information:

1. Horizontal guide clearance;
2. Vertical guide clearance;

3. Do the proposed bridge(s) clearances differ from these guide clearances?
4. If yes, what factors justify deviating from these guide clearances?

Q. Are there other natural or man-made conditions that affect navigation (atmospherics, exclusion zones, etc.)?

1. Describe the conditions:
2. What mitigative measures are being recommended? Why?

R. State any other factors considered necessary for the safe, efficient passage of vessels through the proposed bridge(s)? Are clearance gauges needed? Why?

S. Include a description of the impacts to navigation caused or which could be reasonably caused by the proposed bridge(s) including but not limited to: proposed construction methodology, proposed or prospective changes to the existing bridge(s) operating schedule (for movable bridges), and any proposed mitigation to all unavoidable impacts to navigation.

1. Conduct a navigational impact report, and include a review of all bridges upstream and downstream of the proposed site to determine the minimum vertical and horizontal clearances available on the waterway.
2. If the proposed bridge(s) is fixed, and is replacing an existing drawbridge with unlimited vertical clearance, the applicant must determine whether the proposed bridge(s) will accommodate existing and perspective navigation.

T. Is there any proposed or completed mitigation for impacted waterway users? Are there any impacts that cannot be mitigated?

1. Can vessels and cargoes be partially disassembled/dismantled in order to transit the proposed bridge(s), and if so, is it economically reasonable? The Coast Guard must take into consideration a vessel's ability to adjust its operations without economic loss. Adjustment or mitigations techniques may include using other routes, lowering electronics (GPS, radar, communication antennae, etc.), lowering crane booms, etc.
2. Are alternative routes available for vessel passage?
3. Can vessels transit at typical lower water stages (mean low water, mean pool level, etc.)?

**APPENDIX B: Environmental Control Laws, Executive Orders, and Regulations
Requiring Compliance, as applicable, with Bridge Program Actions**

UNITED STATES CODE REFERENCES	IMPLEMENTING REGULATIONS
BRIDGE LAWS: <i>33 U.S.C. § § 401; 491 – 508; and 511 to 535(i)</i>	33 CFR PARTS 114 – 118
NATIONAL ENVIRONMENTAL POLICY ACT OF 1969 <i>42 U.S.C. § 4321</i>	40 CFR PARTS 1500 – 1508
CLEAN WATER ACT OF 1977 <i>33 U.S.C. § § 1251; 1352; and 1330</i> COASTAL ZONE MANAGEMENT ACT OF 1972 <i>16 U.S.C. § § 1451; and 3501 - 3503</i> COASTAL BARRIER RESOURCES ACT OF 1982 <i>16 USC § 3501</i>	40 CFR PART 121 Water Quality Certification 40 CFR PARTS 401-503 and 136 15 CFR PART 930 E.O. 11990, Protection of Wetlands E.O. 11988, Floodplain Management and Protection DOT Order 5620.2 Floodplain Management
NATIONAL HISTORIC PRESERVATION ACT OF 1966, SECTION 106 <i>16 U.S.C. § 470</i>	36 CFR PARTS 60, 63, and 800
FISH AND WILDLIFE COORDINATION ACT <i>16 U.S.C. § 661 - 666</i> ENDANGERED SPECIES ACT OF 1973 <i>16 U.S.C. § 1531</i> MARINE MAMMAL PROTECTION ACT OF 1972	50 CFR PART 17 50 CFR PART 402 50 CFR PART 216
LAND AND WATER CONSERVATION FUND ACT OF 1965: <i>16 U.S.C. § 4601-4604 et seq.</i>	36 CFR PART 59

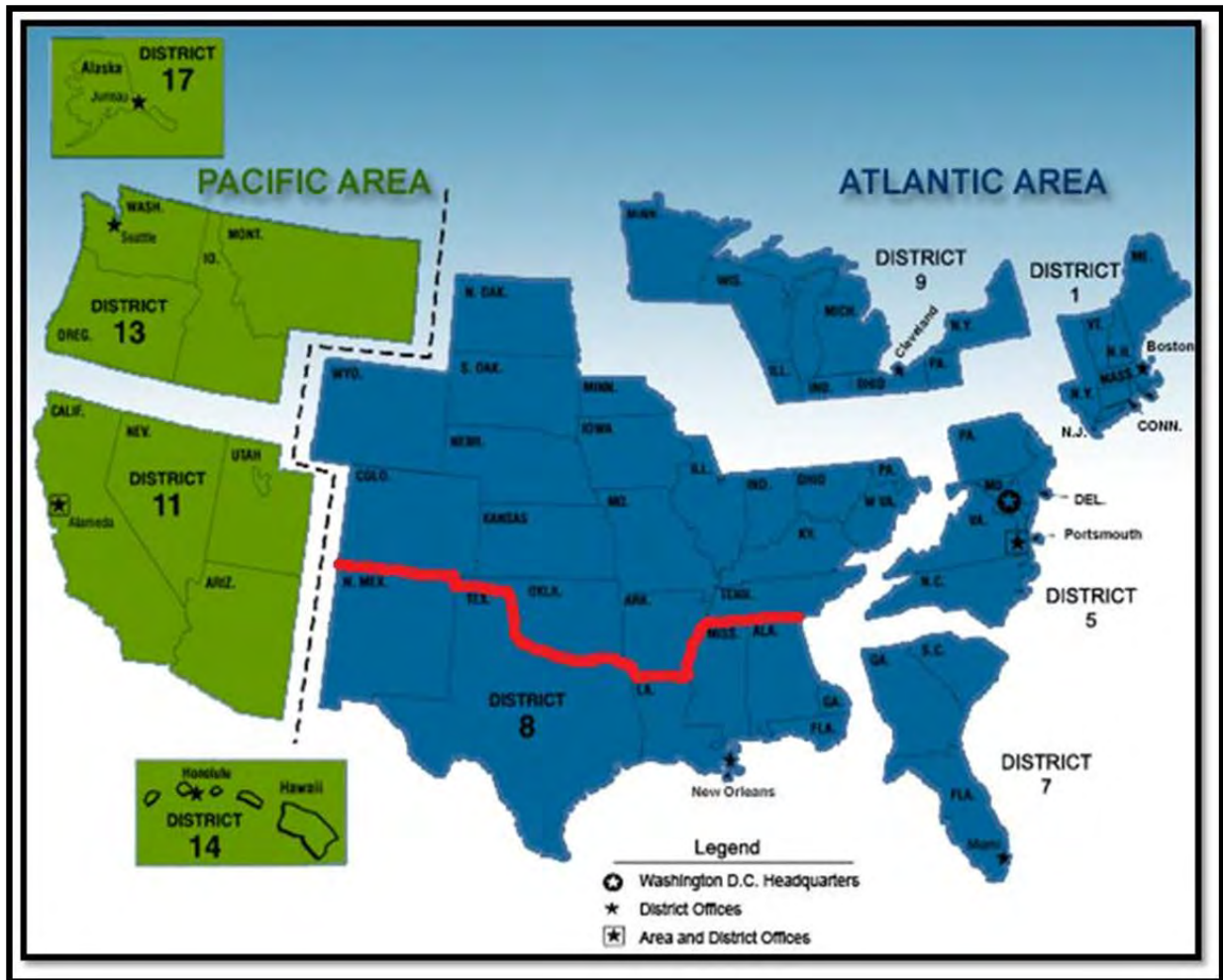
Environmental Control Laws, Executive Orders, and Regulations Requiring Compliance, as applicable, with Bridge Program Actions	
NATIONAL MARINE SANCTUARIES ACT <i>16 U.S.C. § 1431</i>	15 CFR PART 922
MAGNUSON – STEVENS FISHERY CONSERVATION AND MANAGEMENT ACT (<i>Essential Fish Habitat</i>) <i>16 U.S.C. § 1855</i>	50 CFR PARTS Parts 600.805 - .930 E.O. 13112, Invasive Species
MIGRATORY BIRD TREATY ACT OF 1918 <i>16 U.S.C. § 703 – 712</i>	50 CFR PART 10 and 21 E.O. 13186, Responsibilities of Federal Agencies to Protect Migratory Birds
BALD AND GOLDEN EAGLE PROTECTION ACT	
CLEAN AIR ACT <i>42 U.S.C. § § 7401, 7410 and 7506(c)</i>	40 CFR PARTS 6, 51 and 93
WILD AND SCENIC RIVERS ACT OF 1968 <i>16 U.S.C. § 1271 – 1287</i>	36 CFR PART 297
E.O. 12898 ENVIRONMENTAL JUSTICE	
RESOURCE CONSERVATION AND RECOVERY ACT <i>42 U.S.C. § 9601</i>	40 CFR PARTS 239-282
E.O. 12144, ENVIRONMENTAL EFFECTS ABROAD OF MAJOR FEDERAL ACTIONS	
COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION AND LIABILITY ACT OF 1980 <i>42 U.S.C. § 103</i>	40 CFR PARTS 300 – 374

APPENDIX C: Coast Guard District Bridge Program Office Contacts

Commander (dpb) First Coast Guard District Battery Park Building New York, NY 10004-1466 Tel: 212-514-4331	Commander (dpb) Ninth Coast Guard District 1240 East 9 th Street Cleveland, OH 44199-2060 Tel: 216-902-6087
Commander (dpb) Fifth Coast Guard District LANTAREA Federal Building 431 Crawford Street Portsmouth, VA 23704-5004 Tel: 757-398-6222	Commander (dpw) Eleventh Coast Guard District Building 50 - 6 Alameda, CA 94501-5100 Tel: 510-437-3516
Commander (dpb) Seventh Coast Guard District 909 SE First Avenue (Ste 432) Miami, FL 33130-3050 Tel: 305-415-6743	Commander (dpw) Thirteenth Coast Guard District Jackson Federal Building 915 Second Avenue Seattle, WA 98174-1067 Tel: 206-220-7282
Commander (dpb) Eighth Coast Guard District Hale Boggs Federal Building 501 Magazine Street New Orleans, LA 70130-3396 Tel: 504-671-2127	Commander (dpw) Fourteenth Coast Guard District Prince Kalanianaʻole Federal Bldg 300 Ala Moana Blvd., Rm. 9139 Honolulu, HI 96850-4982 Tel: 808-535-3412
Commander (dwb) Eighth Coast Guard District 1222 Spruce Street St. Louis, MO 63103-2398 Tel: 314-269-2378	Commander (dpw) Seventeenth Coast Guard District P. O. Box 25517 Juneau, AK 99802-5517 Tel: 907-463-2268

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APPENDIX D: Coast Guard District Map



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COAST GUARD BRIDGE PERMITTING

General Information

A. Who Must Apply for a Bridge Permit

1. Any individual, partnership, corporation, or local, state, or federal legislative body, agency, or authority planning to construct or modify a bridge or causeway across a navigable waterway of the United States must apply for a Coast Guard bridge permit. This includes all temporary bridges used for construction access or traffic detour.
2. For bridges constructed by the state or municipal agencies, primary authority to apply for a permit for the construction of a bridge project will be presumed without proof.
3. If state law does not require a license, primary authority may be granted in the charter of a corporation or the authority inherent in ownership of the land where the structure will be placed. In these cases, an extract from the charter and evidence of sufficient real estate interest to allow construction of the bridge should be submitted with the application. In such cases where the Coast Guard doubts the applicant's ability to construct and utilize the bridge, particularly for a private bridge owner, proof of property rights must be furnished to the Coast Guard as part of the application.
4. Failure to obtain a bridge permit before commencing bridge construction or modification work is a federal offense, punishable by civil and criminal penalties.

B. Bridge Permit Application Guide

1. The Bridge Permit Application Guide assists the applicant in applying for a Coast Guard bridge permit to:
 - a. Construct a new bridge or causeway, or
 - b. Reconstruct or modify an existing bridge or causeway across navigable waters of the United States.
2. The Bridge Permit Application Guide is located on the Bridge Program website available [here](#) and also by searching for Coast Guard Bridge Permit.

C. How the Coast Guard Can Help

1. The local Coast Guard District Bridge Office is one of the best sources of information for the project. The applicant should direct all project-related questions, concerns, comments, and requests to the bridge program staff in the Coast Guard District Bridge Office where the project is located.
2. A map of the district boundaries is located in the Bridge Permit Application Guide and on

the Bridge Program [website](#) to assist the applicant in locating the Coast Guard District Bridge Office in the project area.

3. A list of the mailing addresses and telephone numbers of the Coast Guard District Bridge Offices is located in the Bridge Permit Application Guide and on the Bridge Program website. The responsibility for processing all bridge permit applications is at the District Commander organizational level.
4. A glossary is also located on the Bridge Program website, providing explanations to many key terms involved in obtaining a Coast Guard bridge permit.

D. Requirements and Laws

1. A bridge permit is the written approval of the location and plans of the bridge or causeway to be constructed or modified. Federal law prohibits the construction of these structures unless the Coast Guard first authorizes them.

E. Coast Guard Bridge Permitting Authority

1. In 1967, the Coast Guard was transferred to the Department of Transportation. One of the Coast Guard's newly assigned duties was to issue bridge permits.
2. In 2002, the Coast Guard preserved its assigned duties under the Homeland Security Act of 2002 when transferred from the Department of Transportation to the Department of Homeland Security.
3. The Secretary of Homeland Security delegated this authority to the Commandant, U. S. Coast Guard, on 28 February 2003, by Department of Homeland Security Delegation Number: 0170.1.
4. The Coast Guard approves bridge location and plans under the authority of several Acts pertaining to bridges.

F. Legislation Pertaining to Bridges

1. These Acts include Section 9 of the Rivers and Harbors Act of 1899 and the General Bridge Act of 1946.
 - a. The purpose of these Acts is to preserve the public right of navigation and to prevent interference with interstate and foreign commerce. The General Bridge Act of 1946, as amended, the Rivers and Harbors Act of 1899, as amended, and the Act of March 23, 1906, as amended, all require the location and plans of bridges and causeways across the navigable waters of the United States be submitted to and approved by the Secretary of Homeland Security prior to construction. The General Bridge Act of 1946 is cited as the legislative authority for bridge construction in most cases.
 - b. These Acts placed the navigable waters of the United States under the exclusive control of the U. S. Coast Guard to prevent any interference with their navigability by

bridges or other obstructions except by express permission of the United States Government.

G. Bridge Program Policy

1. Under the previously mentioned Acts, the Coast Guard's mission is to administer the Bridge Program. The Coast Guard approves the location and plans of bridges and causeways and imposes any necessary conditions relating to the construction, maintenance, and operation of these bridges in the interest of public navigation.
2. The Coast Guard is also required by law to ensure environmental considerations are given careful attention and importance in each bridge permitting decision.
3. As explained further in Section 3.B of the Bridge Permit Application Guide, relevant environmental statutes and executive orders for bridge project compliance include those listed in the Bridge Permit Application Guide.
4. Rules and regulations governing the U. S. Coast Guard bridge permit program are listed in Parts 114 and 115 of Title 33, Code of Federal Regulations (CFR). A copy may be found in most local libraries, online at the U.S. Government Printing Office website or purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20401.

H. Navigable Waters

1. Navigable waters for Coast Guard bridge permitting purposes are defined by 33 CFR § 2.36, unless specifically declared otherwise by Congress, to include:
 - a. Territorial seas of the United States;
 - b. Internal waters of the United States subject to tidal influence; and
 - c. Internal waters of the United States not subject to tidal influence that:
 - 1) Are or have been used, or are or have been susceptible for use, by themselves or in connection with other waters, as highways for substantial interstate or foreign commerce, notwithstanding natural or man-made obstructions that require portage, or
 - 2) A governmental or non-governmental body, having expertise in waterway improvement, determines to be capable of improvement at a reasonable cost (a favorable balance between cost and need) to provide, by themselves or in connection with other waters, as highways for substantial interstate or foreign commerce.
2. If the applicant is uncertain whether or not a waterway is susceptible to improvement for navigation, is tidal, or is considered navigable, contact the Coast Guard to obtain information regarding a navigability determination.

3. The classification of certain waterways or portions of waterways as navigable occasionally changes, changing the information required for applicants.
4. For these reasons, if an applicant is planning to construct a new bridge or causeway or modify an existing bridge or causeway over a canal, channel, stream, river, lake, bay, or other body of water or waterway, they should contact the local Coast Guard District Bridge Office before submitting a formal permit application.
5. Additionally, due to the different characteristics of the waterways and navigation in each District, needed information varies from one District to another. An applicant should contact the local District Office for applicability of requirements listed in the Bridge Permit Application Guide.

Additional Permitting Considerations

A. Temporary Bridges

- a. Most infrastructure repairs do not require a bridge permit from the Coast Guard unless the repair affects the approved navigation clearances or approved configuration of the bridge.
- b. Temporary repairs or replacement of severely deteriorated or damaged bridges or construction of new temporary bridges to meet emergency land transportation requirements may be authorized without a Coast Guard bridge permit. This authorization is limited to the minimum period of time required for the bridge to return to normal operation.
- c. Permanent retention of any temporary bridge, or construction of a new permanent bridge, will be subject to a Coast Guard bridge permit.

B. Time Limits for Construction

1. Based on the estimate given in the application, a reasonable period of time will be allowed for the construction of the bridge project covered by the permit.
2. Coast Guard bridge permits specify that the permit becomes null and void unless construction of the bridge is commenced and completed by certain dates. This time period is usually three years and five years, respectively, from the date of the permit.
3. Longer construction times can be requested and substantiated with good reasons. The specified time should correspond to the actual time needed to complete construction, since a time extension may not be routinely granted.
4. If the authorized work is not completed within the time specified in the permit, the permit is null and void. A new application and approval are required before construction work can continue.

C. Bridge Protective Systems

1. When considering an application for a bridge permit, the Coast Guard may require a bridge protective system to provide navigation safety.
2. In the permit application, the applicant must consider the possible need for a bridge protective system that would promote safer navigation through the bridge.
3. The need for a bridge protective system is based on present and future navigation transiting the proposed bridge site.
4. When required, the applicant must submit a plan for a bridge protective system that includes the following information:
 - a. A description of the proposed type of bridge protective system (include a description of the construction methods and materials from the standpoint of navigation safety).
 - b. The dimensions and minimum clear horizontal distance normal to the channel axis measured between the most restrictive parts of the bridge protective system.
5. A Vessel Impact Assessment might be required to determine the type of bridge protective system required for the bridge, if applicable.

D. Clearance Gauges

1. When necessary for reasons of safety of navigation, the District Commander may require or authorize the installation of clearance gauges in accordance with 33 CFR § 118.160. Early coordination and consultation with the cognizant Coast Guard District Bridge Office is necessary for making this determination.
2. Under special or peculiar circumstances, or conditions which make compliance with these standards impractical, the bridge owner may apply in writing to the District Commander for permission to deviate from these standards or obtain a waiver of the requirement for clearance gauges. In some instances, the District Commander may authorize use of electronic measuring devices as replacement for the fixed gauges.

E. Approval of Falsework and Construction Procedures

1. Clearances provided for navigation through or under the bridge spans associated with falsework and construction activities must be approved by the Coast Guard. This is not a separate permit action by the Coast Guard but applicants should consult with the local Corps of Engineers Regulatory office for matters under the jurisdiction of the Corps. The Coast Guard will review, coordinate and approve the proposed temporary navigational clearance restrictions through or under a bridge by use of falsework, pilings, floating equipment, closure of draws, or any work or activities which temporarily reduce the navigational clearances and design flood flows, including obstruction of any or all spans of the bridge. Early coordination with the Coast Guard District Bridge Office is required for proposed construction/demolition plans.

2. A Coast Guard bridge permit normally includes a condition stating the plans for cofferdams, falsework, or any other temporary structures to be placed in the water to facilitate the bridge construction, must be submitted to and approved by the District Commander before the start of construction.
3. Approval of a temporary reduction of previously approved navigational clearances for any of these temporary structures varies greatly. Approval depends on the location of the bridge, type of river traffic, the time of year the structures will be in place, etc.
4. For these reasons, the applicant must specify the minimum navigational clearances required during the construction of a bridge in any construction contract.
5. The applicant may obtain this information by writing to the appropriate Coast Guard District Commander.
6. Requests for approval of the proposed plans for temporary structures and erection schemes shall be made in writing to the Coast Guard District Commander early enough to allow proper review, coordination and approval. This request must include the proposed plans, including drawings on 8 ½ x 11 paper, tentative work scheduled for the temporary structures and any other temporary hazards to navigation, such as a moored floating plant.
7. Plans for cofferdams, falsework bents, brackets, temporary dolphins, survey towers, test piles, work dikes, etc., should be submitted to the Coast Guard District Commander for his approval prior to commencement of construction. Use of these types of items may require review and permitting by the Corps of Engineers under the provisions of Section 10 of the River & Harbor Act of 1899 and/or Section 404 of the Clean Water Act.

F. Maintenance

1. Bridges constructed under a Coast Guard permit must be maintained in accordance with the applicable Bridge Act, permit conditions and approved plans. The Coast Guard District must be provided advance notification regarding any maintenance that will affect navigation to allow timely review and coordination with waterway users prior to deviating from the approved plans or operation of the bridge.
2. Repairs to a bridge which do not alter the clearances, type of structure, or any integral part of the substructure or superstructure or navigation conditions, but which consist only in the replacement of worn or obsolete parts, may, if the bridge is a legally approved structure, be made as routine maintenance without approval of the U.S. Coast Guard.

G. Transfer of Permits

1. Although a permit is issued to a specific party, the approval granted for a bridge permit is not restricted to construction, operation, or maintenance of the bridge by that party.
2. The permit passes with the title when it is transferred to an assignee or purchaser of the

bridge. The new owner or assignee must strictly comply with the terms and conditions of the permit.

H. Bridge Navigational Lighting

1. Bridges across waterways, which support nighttime navigation, are required to display navigational lights in accordance with Part 118 of Title 33, CFR.
2. Approval of navigational lights and other required signals must be obtained, prior to construction, from the Coast Guard District Commander (Bridge Office) with jurisdiction over the bridge project area.
3. The permittee is responsible for maintaining proper temporary navigational lighting and other such markings, as prescribed, on bridges during construction. Permanent lighting must be maintained on the bridges after the completion of construction.
4. The District Commander may exempt bridges over waterways with no significant nighttime navigation from the lighting or other signal requirements.
5. For the best service and ease of maintenance, lighting installations should incorporate the recommended features outlined below in accordance with 33 CFR Part 118.
6. If the applicant considers bridge lighting during the bridge design phase, it can help avoid future difficulties.
7. Since the bridge lighting requirements in 33 CFR Part 118 are specified as performance standards, the applicant should ensure the lighting equipment proposed for a specific bridge project meets these standards by contacting the local Coast Guard District Bridge Office.
8. Any person required by 33 CFR Part 118 to maintain lights and other signals upon any bridge or abutment over or in the navigable waters of the United States who fails or refuses to maintain such lights and other signals, or to obey any of the lawful rules and regulations relating to the same is subject to a penalty as provided in 14 United States Code (U.S.C.) 85.
9. No person shall obstruct or interfere with any lights or signals maintained in accordance with the regulations prescribed in this part. Any person violating the provisions of 33 CFR § 118.10 shall be deemed guilty of a misdemeanor and be subject to a fine for each offense. Each day during which such violation shall continue shall be considered a new offense.
10. Additional information can be found in the Coast Guard Bridge Lighting and Other Signals [guide](#).