



Hernando County Boat Ramp Master Plan

Coastal Boat Ramp Master Plan



Prepared for



Hernando County
Public Works Department
1525 E Jefferson St, Brooksville, FL 34601

Prepared by
Cardno, Inc.
20215 Cortez Blvd., Brooksville, FL, 34601
+1.727.531.3505

April 2, 2020

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Client Address, Client Address 2, City, State, Zip

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+1.727.531.3505

www.cardno.com

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Hernando County Board of County Commissioners

John Mitten, District 1

Wayne Dukes, District 2

John Allocco, District 3

Jeff Holcomb, District 4

Steve Champion, District 5

Hernando County Aquatic Services

Keith Kolasa

Hernando County Department of Public Works

Scott Herring

Engineering Consultant

Cardno, Inc.

Hernando County Boat Ramp Facility Users

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		8
	1.3.1 Existing Conditions Inventory/Analysis	9
	1.3.2 Needs Assessment	10
1.4	Qualitative Analysis	12
	1.4.1 Facility Level of Service	12
	1.4.2 Design Standards	13
1.5	Master Plan Development	14
	1.5.1 Public Workshops	14
	1.5.2 Requirements	15
2	Conceptual Master Plans	16
2.1	Bayport Park Boat Ramp	16
	2.1.1 Facility Maintenance	18
	2.1.2 Conceptual Master Plan	19
	2.1.3 Opinion of Probable Cost	20
2.2	Rogers Park Boat Ramp	23
	2.2.1 Facility Maintenance	25
	2.2.2 Conceptual Master Plan	25
	2.2.3 Opinion of Probable Cost	28
2.3	Jenkins Creek Park Boat Ramp	29
	2.3.1 Facility Maintenance	31
	2.3.2 Conceptual Master Plan	31
	2.3.3 Opinion of Probable Cost	34
2.4	Hernando Beach Boat Ramp	36
	2.4.1 Facility Maintenance	38
	2.4.2 Conceptual Master Plan	39
	2.4.3 Opinion of Probable Cost	41
3	Implementation & Funding Sources	42
3.1	Funding Sources	42
	3.1.1 Historic Funding	42
	3.1.2 Future Funding	42

Figures

- Figure 1. Coastal Boat Ramps
- Figure 2. Freshwater Boat Ramps
- Figure 3. Example of Maintenance Improvements at Rogers Park
- Figure 4. Parking Revenue Summary 2015-2019
- Figure 5. Peak Usage Summary: Opening Day – Grouper Season
- Figure 6. Peak Usage Summary: Opening Day – Scallop Season
- Figure 7. Bayport Park Pier
- Figure 8. Existing Conditions Inventory Map – Bayport Park
- Figure 9. Ownership Inventory Map – Bayport Park
- Figure 10. Conceptual Master Plan – Bayport Park
- Figure 11. Existing Conditions Inventory Map – Rogers Park
- Figure 12. Ownership Inventory Map – Rogers Park
- Figure 13. Conceptual Master Plan – Rogers Park
- Figure 14. Jenkins Creek Park Ramp at Low Tide
- Figure 15. Existing Conditions Inventory Map – Jenkins Creek Park
- Figure 16. Ownership Inventory Map – Jenkins Creek Park
- Figure 17. Conceptual Master Plan – Jenkins Creek Park
- Figure 18. Existing Conditions Inventory Map – Hernando Beach Boat Ramp
- Figure 19. Ownership Inventory Map – Hernando Beach Boat Ramp
- Figure 20. Conceptual Master Plan – Hernando Beach Boat Ramp

Tables


- Table 1. Recommended Trailer Parking
- Table 2. Mooring Facility Recommended Lengths
- Table 3. Public Likes and Dislikes – Bayport Park
- Table 4. Total Opinion of Probable Cost – Bayport Park
- Table 5. Public Likes and Dislikes – Rogers Park
- Table 6. Total Opinion of Probable Cost – Rogers Park
- Table 7. Public Likes and Dislikes – Jenkins Creek Park
- Table 8. Total Opinion of Probable Cost – Jenkins Creek Park Phase I Improvements
- Table 9. Total Opinion of Probable Cost – Jenkins Creek Park Phase II Improvements
- Table 10. Public Likes and Dislikes – Hernando Beach Boat Ramp
- Table 11. Total Opinion of Probable Cost – Hernando Beach Boat Ramp

Appendices

- Appendix A – Structural Inspection Reports
- Appendix B – Hernando Beach Park Due Diligence Report
- Appendix C – Boat Ramp Revenue Data
- Appendix D – Survey Results – Opening Day - Grouper Season
- Appendix E – Survey Results – Opening Day - Scallop Season
- Appendix F – Online Survey Results
- Appendix G – Public Workshop#1 Exhibits
- Appendix H – Public Workshop #1 Comment Cards
- Appendix I – Public Workshop#2 Exhibits
- Appendix J – Public Workshop #2 Comment Cards
- Appendix K – Opinion of Probable Costs
- Appendix L – Land Management Agreement – Bayport Park

Executive Summary

The Hernando County Board of County Commissioners operates ten (10) boat ramp facilities providing for watercraft access to both fresh and salt water areas within the County. These boat ramp facilities generate significant local economic activity that benefit both the local communities and businesses throughout the County. It has been deemed necessary to provide a master plan for the boat ramp facilities that outline improvements and upgrades necessary to meet the needs of the community as well as address any deficiencies currently existing within the system. This document builds on the previous Master Plan prepared by the County in 2017 for the following coastal ramp facilities: Bayport Park; Hernando Beach; Jenkins Creek Park; and Rogers Park.



HERNANDO COUNTY IS A PLACE TO RAISE A FAMILY, A PLACE WHERE THE CHARM OF COMMUNITY STILL COEXISTS ALONGSIDE THE MAJESTY OF NATURE; WHERE TRADITIONS OF AGRICULTURE, FISHING AND HUNTING CAN STILL BE PURSUED AMIDST A GROWING POPULATION; WHERE NEW TECHNOLOGY AND A NEW TOURISM BRAND PROVIDE PROMISE OF A CLEAN, GROWING ECONOMY.

2040 Hernando County Comprehensive Plan

This first phase of master planning focuses on existing deficiencies and designing conceptual plans for each site to address these items to improve level of service to current residents and visitors. The second master plan phase will identify how to achieve the desired Level of Service for projected growth within the County.

This master plan is developed using several guiding documents to support sustainable commercial and recreational use of the coastal waters including the Comprehensive Plan and Marine Resource Plan. Functional goals evaluated included (1) Increase Accessibility and Improve Safety (2) Reduce Congestion (3) Enhance Tourism, Economic Development and Community Development, (4) Improve Aesthetics and (5) Decrease Maintenance Costs.

Cardno was contracted to prepare an updated Boat Ramp Master Plan for the coastal access launch facilities and amenities. This Scope of Services focuses on identifying improvements to the existing boat ramps, docks, and parking facilities at the County's listed facilities and was organized into the following tasks: Task 1 – Project Kick-off, Existing Conditions Inventory and Analysis; Task 2 – Review of Plans and Documents; Task 3 – Facilities Use Evaluation and Trends; Task 4 – Needs Assessment; Task 5 – Public Engagement and Task 6 – Master Plan Development.

Existing condition inventories were performed during facility inspections conducted in May and June 2018. The docks and ramps at each of the parks included in this master plan were inspected to evaluate the structural integrity of the facilities. The results of the ramp inspections ranged from good to poor, while the dock inspections ranged from good to fair. Additionally, Cardno staff also conducted visual observations of the facilities on opening day of the 2018 gag grouper and scallop seasons which represented peak use events.

Facility needs assessments were conducted through several venues including staff workshops; public engagement during site inventories and public workshops. Two public workshops were held on December 5, 2018 and January 15, 2020 which generated 19 and 37 comment cards, respectively.





Except for Fiscal Year (FY) 2018, parking revenue from annual pass sales and fees collected at the ramps have steadily increased from about \$137,000 in FY 2015 to \$202,000 in FY 2019.

The Peak Use evaluation resulted in the facilities at full trailer capacity typically around 11a.m., except of Jenkins Creek Park. Pedestrian vehicle parking lagged on those peak days and may not have filled to capacity in all cases.

A web-based survey was launched to collect public input on which facilities they use, what they like and dislike at each facility, why they avoid specific facilities, and suggestions to make each facility better. The survey was maintained on multiple county website for over one (1) month and generated over 400 responses which were acknowledged or otherwise incorporated into the planning and conceptual plan development process.

Level of service standards for trailer and passenger parking, boat mooring and vehicle queuing areas were also evaluated based on County and available published standards. These standards were applied to existing facility conditions to determine opportunities and constraints at each facility.

Existing conditions, ownership boundaries, and conceptual master plans were developed for each coastal facility based on information gathered through the outreach and planning phases. The following highlights the resulting master planning improvements and total cost estimates for each park facility.

-  **Bayport Park** – Improve park ingress, egress and internal circulation; redesign trailer and passenger parking areas; add additional moorings; maintain the channel to remove obstructions; incorporate stormwater management facilities and site lighting; and negotiate lease agreement with the Southwest Florida Water Management District. Opinion of probable construction costs, including design, general conditions and contingency is estimate at \$1.7 million.
-  **Rogers Park** – Improve boat and canoe/kayak traffic circulation within channel, ramp and parking lot; add moorings for canoe/kayak tie-off; modify trailer parking including width and angle; add site lighting at ramp and parking areas; and modify egress lane to eliminate trailer contact with bollards. Opinion of probable construction costs, including design, general conditions and contingency is estimate at \$95,000.
-  **Jenkins Creek Park** – Construct new ramp south of pedestrian bridge; add additional moorings at new ramp; convert passenger parking stalls to trailer stalls; include a Phase 2 passenger vehicle parking area; add site lighting at ramp and parking areas; and provide a pedestrian connection to Linda Pedersen Park. Opinion of probable construction costs, including design, general conditions and contingency is estimate at \$400,000.
-  **Hernando Beach Boat Ramp** – Modify existing ramp to include a total of five (5) lanes; provide ramp attendant or other maintenance of traffic during peak use periods; update pedestrian crosswalks including LED signage; standardize site information signs; and add ramp lighting. Opinion of probable construction costs, including design, general conditions and contingency is estimate at \$1.9 million.

The County has performed many improvements to the coastal boat ramp facilities since their construction. Funding sources have varied based on the cost of the improvements, the function and reason for the improvements and in which facility the improvements were made. Sources of funds for previous projects to improve the level of service at the facilities are provided in Section 3. Funding sources typically require creation of projects and close coordination and timing of appropriate funding sources. Many of the recommendations in this report are shown to be planned and constructed in one phase, while others propose a multi-phased approach.

Any recommended improvements will need to be approved by various permitting agencies. Proposed improvements will need to meet current site, utility, environmental, archeological, cultural resource, stormwater, floodplain and building codes and standards. Additional site specific needs include: (1) renewal of the land management agreement with Southwest Florida Water Management District (SWFWMD) for the Bayport Park and (2) continue to coordinate improvements at the Hernando Beach ramp with other capital improvement projects such as those planned for Calienta Street.

Once project budgets and funding has been identified, each project will proceed in five (5) basic steps: Schematic Design, Design Development, Construction Documents, Construction, Operations and Maintenance. This master plan document serves as the initial, or programming, step for moving forward.

The County has taken a key step forward in improving boat ramps through the preparation of this Master Plan. Moving forward: (1) Prioritize improvements (2) Identify and Apply for funding project funding & grants (3) Coordinate wayfinding and signage improvements with the Parks Department (4) Coordinate parking and site improvements with scheduled Parks improvements (5) Schedule all maintenance activities (6) Prepare Freshwater Boat Ramp Master Plan and (7) Update the Coastal and Freshwater Boat Ramp Master Plans for future growth through 2040.

1 Project Overview

1.1 Introduction

The Hernando County Board of County Commissioners operates ten (10) boat ramp facilities providing for watercraft access to both fresh and salt water areas within the County. These boat ramp facilities ability to launch different size vessels and provide parking vary from site to site.

It is the County's vision to encourage residents and tourists to visit and enjoy the resources within the County, as well as to promote County wide nature based destinations and activities. These boat ramp facilities generate significant local economic activity within Hernando County benefiting local businesses such as bait shops, marinas, fishing guides, fuel and grocery suppliers, restaurants, and hotels/motels. The County's boat launch facilities are a patchwork of ramps and parking areas constructed over the past fifty plus years. Operation and maintenance for these long-term infrastructure improvements have historically been done individually as funding became available and/or when issues were noted by user groups. The County has deemed it necessary to provide a master plan for the boat ramp facilities that will outline improvements and upgrades necessary to meet the needs of the community as well as address any deficiencies currently existing within the system. This master plan will serve as a proactive framework for comprehensively addressing standardization of facilities, developing a Hernando County brand for boat ramps, increasing accessibility and the quality of experiences at the ramps, improving waterway access for all user groups, decreasing maintenance costs and down time and budgeting for and prioritizing improvements and maintenance activities. This document builds on the previous Master Plan and provides additional Master Planning for Hernando County's active boat ramp facilities along the coast as follows:

1. Bayport Park Boat Ramp
2. Hernando Beach Boat Ramp
3. Jenkins Creek Park Boat Ramp/Linda Pedersen
4. Rogers Park Boat Ramp

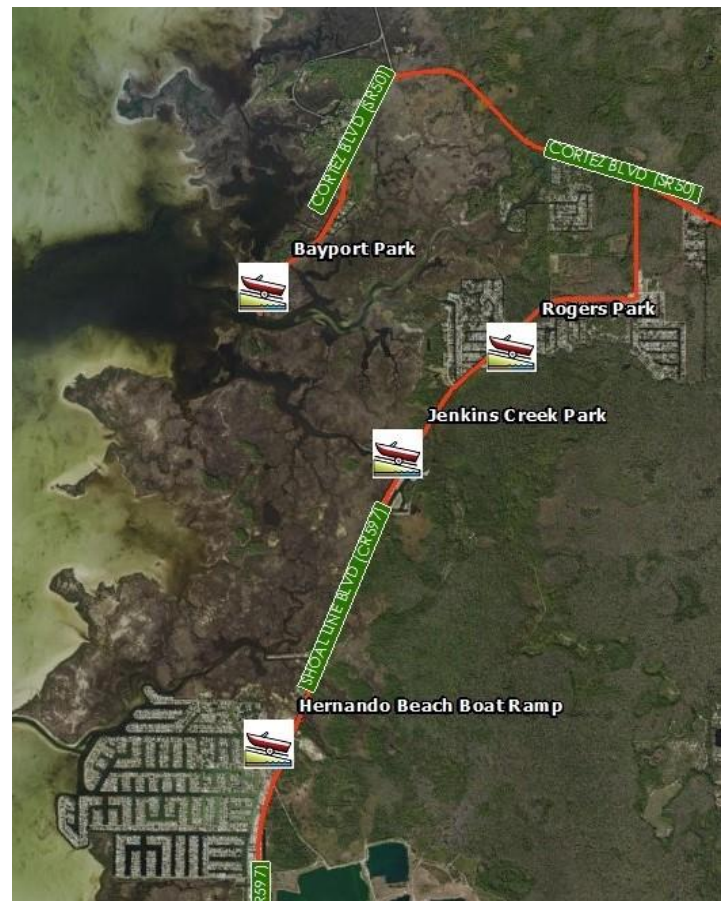


Figure 1. Coastal Boat Ramps

Future master plan documents will address the freshwater ramp facilities which includes the following sites:

1. Bystre Lake Boat Ramp
2. Hunter's Lake Boat Ramp
3. Lake Townsen Boat Ramp
4. Mountain Lake Boat Ramp
5. Nobleton Boat Ramp
6. Lake Lindsey Boat Ramp

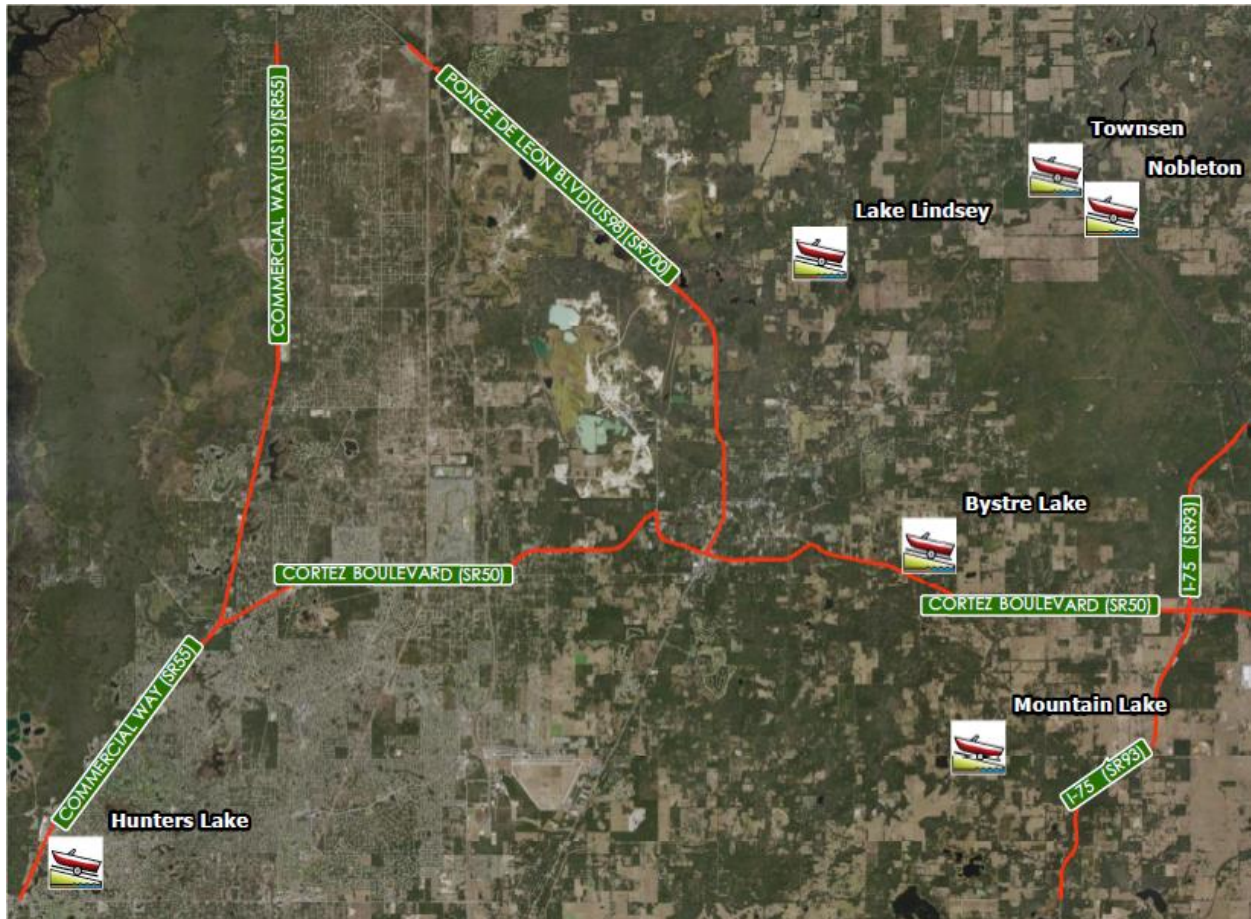


Figure 2. Freshwater Boat Ramps

The County has chosen to approach the master planning efforts in phases. The first phase focuses on existing deficiencies and designing conceptual plans for each site to address these items to improve level of service to existing residents and visitors. This effort also includes recommended improvements at each site and budgetary costs for each identified improvement. Finally, identification of potential funding mechanisms are discussed based on recently completed projects and associated funding sources. This first phase is being pursued independently for the coastal boat ramps first with this report. The freshwater boat ramps also need this first phase of master planning to be completed prior to moving into the second phase.

The second master plan phase will identify how to achieve the desired Level of Service for projected growth within the County. This may be accomplished through additional improvements at existing facilities or the creation of new boat ramp facilities.

1.2 Functional Goals


This master plan is being developed using direction from several guidance documents to support sustainable commercial and recreational use of the coastal waters of Hernando County. The Comprehensive Plan identifies how to manage growth within the County and outlines goals and objectives defining successful growth. Primary Objectives pertaining to this master plan are 7.01 – County Park Plan and 7.02C – Waterway Access.

Objective 7.01 states “Hernando County should evaluate the extent and operation of its current parks, establish standards for the provision of parks, and use citizen input to plan for parks infrastructure and facilities.

Strategy 7.01A(1): Hernando County will consider developing and maintaining a countywide master plan for parks, park facilities and open space that includes, at a minimum:

a. an evaluation of the parks system in conjunction with annual budgetary allocations, capital funding and adequate facilities;

b. development of a long-term strategy for parks and major facilities that will meet identified needs for both the permanent and visitor population;”



**HERNANDO COUNTY HAS BECOME
FLORIDA’S FIRST COUNTY TO ADD A LONG
TERM MANAGEMENT STRATEGY FOR ITS
ENTIRE MARINE AND COASTAL ZONE TO
THE COUNTY’S COMPREHENSIVE PLAN.**

Florida SeaGrant News, May 2018

Objective 7.02C states “Hernando County encourages access to and responsible enjoyment of its waterways resources including rivers, springs, bays and the Gulf of Mexico, including a system of waterway access into its parks system.

Strategy 7.02C(1): The County should expand, enhance and maintain boat ramps, kayak launches, public docks and other facilities where feasible at parks and other popular boating destinations such as Hernando Beach and the Withlacoochee River.

Strategy 7.02C(2): Water access facilities should be designed using low-impact development and Florida Department of Environmental Protection Clean Marina standards and should accommodate non-motorized craft such as canoes, kayaks and paddleboards in a safe manner, where possible and appropriate for the waterbody being accessed.

Strategy 7.02C(3): Hernando County should develop and implement a “blueways” water-access trail system for paddle-craft that seeks to enhance the user-experience in a manner that promotes tourism volume and length of stay. The blueways plan shall be consistent with and enhance the “Nature Coast” segment of the Florida circumnavigational Saltwater Paddling Trail.

Strategy 7.02C(4): The County should work to promote and market the Coast to Coast Connector multi-use trail as a major recreation and tourism asset and ensure the consistency of development initiatives with trail objectives and standards.”

The Marine Resource Plan focuses specifically on waterways and improving their use for the benefit of all. Goal 5 of the Plan is “to develop, maintain and enhance a resilient program of land-based and in-water maritime access infrastructure to support the sustainable commercial and recreational use of the marine and estuarine waters of Hernando County.” The four (4) objectives to meet this goal are maintaining and improving motorized, motor assisted, and non-motorized navigation; creation of education, financing, and compliance programs to ensure sustainable use of waterways; and maintain

and improve access infrastructure based upon expected growth through 2040 at adequate levels of service.

Consistent with the guiding principles outlined in the documents above, the County has determined the Functional Goals guiding this plan are as outlined in the following sections.

1.2.1 Increase Accessibility & Improve Safety

Access to the natural and aquatic environment is a primary reason many people choose to live, work, and visit Hernando County. As such, providing safe access for all in a responsible way is important to the County. The initial 2017 Boat Ramp Master Plan identified several maintenance, repair, and improvements to focus specifically on providing safe access to the water.

Additional items considered with this master plan takes this a step further; looking at ADA accessibility, options to allow water access by both motorized and non-motorized vessels, and how to best accommodate fluctuating water levels. By providing an improved level of service allows the County to provide access to more residents and visitors.

1.2.2 Reduce Congestion

One of the most common complaints received from the public during preparation of this document was the excessive wait times to launch a vessel and adequate queuing for those waiting to launch. Compounding this issue, several of the parks in this master plan have amenities that attract other users that may not be using the boat ramps. It was critical to determine traffic flow patterns and timing, pedestrian flow patterns and timing, and potential usage conflicts to improve parking availability and other opportunities to reduce launching and loading times, which will also improve safety.



1.2.3 Enhance Tourism, Economic Development, and Community Development

The connection to the water that Hernando County has fostered is a large draw for residents, businesses, and visitors alike. One of the goals of this master plan is to assist the County to improve on the state's "blueways" water trail system, which will provide a foundation for improving tourism duration and volume similar to what the Robert Trent Jones Golf Trail has done within Alabama.

Growth patterns in the region have primarily been located next to regional transportation and recreational trails. The blueways water trail system would likely see similar development patterns as other recreational trails. Lastly, improved water access continues to draw more businesses to the area that will enhance the Ecotourism, boat charter facilities and new businesses to support those who use the coastal waters of the County.

1.2.4 Improve Aesthetics

When looking to improve aesthetics, beauty is definitely in the eye of the beholder; however, many elements can go into increasing the aesthetics at a site. One of the key elements that increases aesthetics is keeping a site clean by providing adequate waste receptacles in the right locations, performing regular cleaning and maintenance activities, monitoring usage and enforcing hours of operation all of which can have a big impact on how the site is viewed. Other elements include cohesive wayfinding, regulatory, and informational signage for the site; adequate lighting; choosing materials and

colors to enhance the natural beauty of each site and endure regular use by the public; and choosing forms, shapes, and textures of facility elements to enhance the visual experience and improve safety.

1.2.5 Decrease Maintenance Costs

Hernando County has historically looked for ways to be efficient with park and ramp facility maintenance costs. One such way the County has been successful in decreasing facility costs includes taking these anticipated maintenance expenses into consideration in the decision making process for



Figure 3. Example of Maintenance Improvements at Rogers Park

capital projects. New materials and equipment designs become available every day that increase design life and reduce maintenance. Additionally, providing standardization for elements used at every facility (e.g. trash receptacles, benches, message boards, etc.) can help the County reduce costs allowing larger volume purchases of items and use of the replacement parts at any facility.

1.3 Scope of Work

Cardno was hired by the County to prepare an updated Boat Ramp Master Plan for the coastal access launch facilities and amenities. This Scope of Services focuses on identifying and prioritizing improvements to the existing boat ramps, docks, and parking facilities at the County's listed facilities and was organized into the following tasks:

- > Task 1 – Project Kick-off, Existing Conditions Inventory and Analysis
- > Task 2 – Review of Plans and Documents
- > Task 3 – Facilities Use Evaluation and Trends
- > Task 4 – Needs Assessment
- > Task 5 – Public Engagement
- > Task 6 – Master Plan Development

With the initial task, an Existing Conditions Inventory and Analysis began with site inspections and data gathering. Information received and reviewed with tasks 2 through 4 refined the Conditions Inventory report and included recommended improvements at each of the facilities. Upon completion of the initial Conceptual Master Plans for each site, a public meeting was held to get input on the recommended improvements and confirm deficiencies discovered during the Needs Assessment and Inventory portions

of the project. A second public meeting was held after incorporation of public and staff comments to review the recommended Master Plans.

The master plans shown in Chapter 2 include existing conditions at each site; property ownership in and around each site; and identified opportunities, recommended improvements and cost estimates for each site.

1.3.1 Existing Conditions Inventory/Analysis

In order to determine what improvements might be needed at each location, an existing conditions inventory was conducted for each of the four coastal boat ramps and associated park facilities. Cardno, with the assistance of County staff, built upon the County's existing ramp inventory (Aquatic Services 2017) to develop a comprehensive inventory of the County's boat ramp facilities to include the following, as applicable:

- > Facility type & purpose
- > Location
- > County land boundary, Easements, Utilities, and Acreage
- > Inventory of facilities and amenities
- > Boat ramp/launch description (material type, width, length)
- > Size/types of recreational boats permitted to launch
- > Maps illustrating the location of the facility, parcel boundaries, and easements
- > Planned parcel acquisitions or recently acquired parcels
- > Parking, docks, fishing pier, ramps, seawalls, signs, cleaning station, boat wash. Bathhouse facilities, if present, were not evaluated for building condition, function or capacity.

The existing facility inventory was based on coordinated site observations and data provided by the County including ownership documents containing surveys, deeds, easements, etc. and readily available published or public information. The parcel acquisitions data was provided by the County for inclusion in the inventory.

This assessment included a structural inspection of the boat ramps and docks, an inspection of the parking lot and park facilities for any visual deficiencies or deferred maintenance items, and inspection of the park facilities for existing ADA upgrades that might be needed at the facility.

1.3.1.1 Inspections & Observations

On May 3, 2018 and June 3, 2018, the docks and ramps at each of the parks included in this master plan were inspected to evaluate the structural integrity of the facilities. The results of the ramp inspections ranged from good to poor, while the dock inspections ranged from good to fair. The full inspection results are included in Appendix A.

Additionally, Cardno staff conducted visual observations of the boat ramp park facilities on opening day of the 2018 Grouper season and 2018 Scallop season. Many of the observations noted were similar for each of the park facilities and included:

- > Rutting outside of drive aisle limits
- > Limited trailer and passenger car parking
- > Excessive wait times for vessel launch
- > Inconsistent signage
- > Worn pavement and/or striping
- > Pay station functionality

- > Need for better launch staging/site circulation

Site specific observations for each park are included in the Conceptual Master Plans section that provides detailed information about each facility.

1.3.1.2 Existing Projects & Permits

Beyond routine operation and maintenance activities, the only active project at the time of this writing is the replacement of the pier at Bayport Park. Additional projects just beginning are roadway and drainage improvements on Calienta Street adjacent to the Hernando Beach ramp and parking facilities and park improvements at Linda Pederson Park. There are several recently completed projects at these facilities including the courtesy dock at Bayport Park and parking and drainage improvements at Rogers Park.

1.3.2 Needs Assessment

The needs assessment portion of the scope primarily involved gathering information from staff and the public about what was working well and what needed improvement at the facilities. A Needs Assessment is a process that is individual to the project at hand and typically involves data collection and analysis from several sources. The effort requires the use of Qualitative and Quantitative Analysis techniques. For this project, the information from the Existing Conditions Inventory, Staff Workshops, Peak Usage Surveys, and Online Survey comprised the Qualitative component of the effort, while the Level of Service requirements and design standards were the Quantitative Analysis. The collected data was used to analyze trends and ultimately determine desired and recommended improvements for each of the sites.

1.3.2.1 Staff Workshops

Prior to public workshops and on-line surveys, meetings were held with County representatives from Public Works; Aquatic Services and Waterways; Engineering; Park and Recreation; and Environmental to discuss the results of previous studies, recommendations within the previously issued Boat Ramp Master Plan (January 2017), ongoing projects, and overall objectives for the use of the boat ramps and the amenities at each facility.

During preparation of this master plan document, the County Commission was approached with an opportunity to purchase a parcel of land located near the Hernando Beach ramp and parking facilities.

Cardno was contracted to perform a due diligence review of this property as well as three (3) adjoin parcels to the north along Shoal Line Boulevard. The due diligence report prepared evaluating this potential land acquisition is attached as Appendix B.

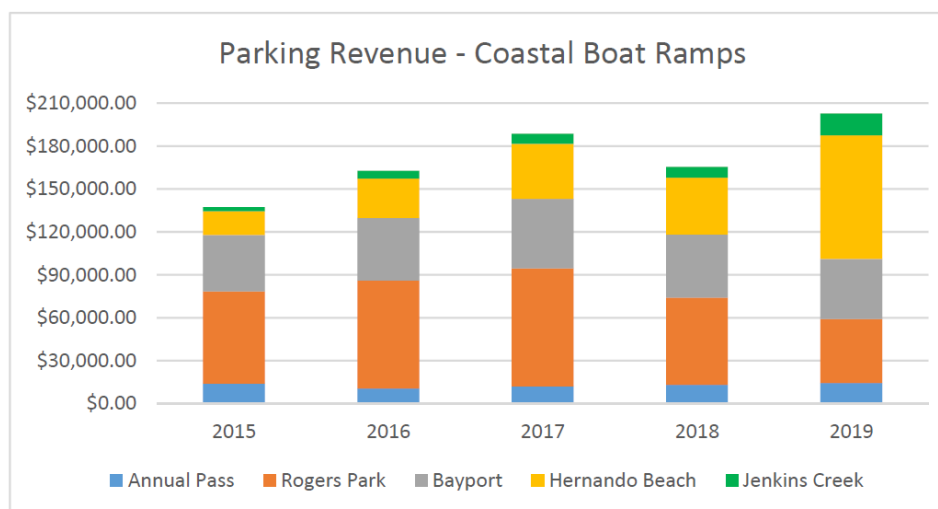


Figure 4. Parking Revenue Summary 2015-2019

Staff also provided parking revenue information for years 2015 - 2019 to review as part of the usage and trends analysis performed with this master plan effort. A summary of that data is shown in Figure 4 while the full data provided by the County is in Appendix C.

For the period of record shown in Figure 4 above, Rogers Park has collected more parking revenue than any of the other coastal facilities until calendar year 2019. That year, the Hernando Beach ramp about equaled the revenue collected from both Rogers Park and Bayport combined. Revenue from Jenkins Creek are the lowest due to limitations of the existing ramp and low clearance issues associated with the crossing under the pedestrian bridge. Annual pass sales have held consistent throughout the period.

1.3.2.2 Peak Usage

As part of the Needs Assessment, it was important to the County to evaluate the facilities during the two (2) peak usage days of the year: Opening Day of Gag Grouper season (June 1) and Opening Day of Scallop season (July 1). Cardno staff was present for each of these 2018 peak usage days at all four coastal ramp facilities.

A short, in person survey was conducted noting the type of tow vehicle, type of watercraft, number of passengers, and the county of residence. The survey was conducted between the hours of 6 am and 12 am, or until the park reached trailer parking capacity. Additionally, notes were made on any comments or suggested improvements the users would like to see at the facility.

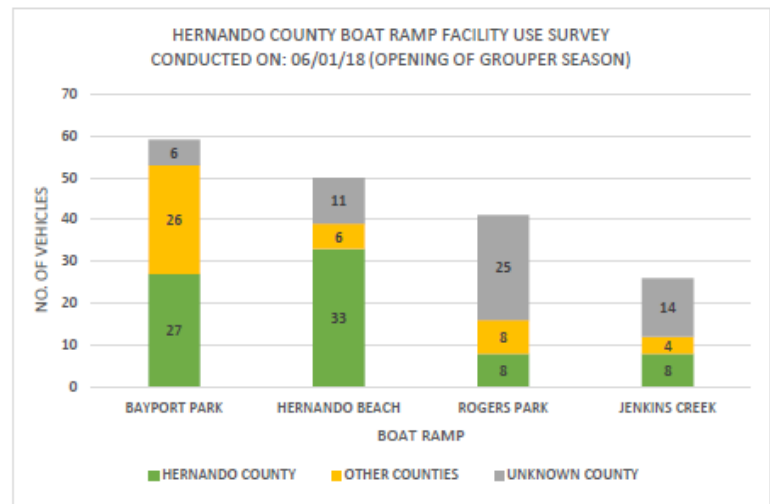


Figure 5. Peak Usage Summary: Opening Day - Grouper Season

1.3.2.2.1 Opening Day of Gag Grouper Season

As shown in Figure 5, a total of 176 boat launches occurred at these four County facilities. Bayport Park had the highest number of launches with 59, while Jenkins Creek had the lowest with 26. The Survey data collection forms and complete summary of results and analysis is included in Appendix D.

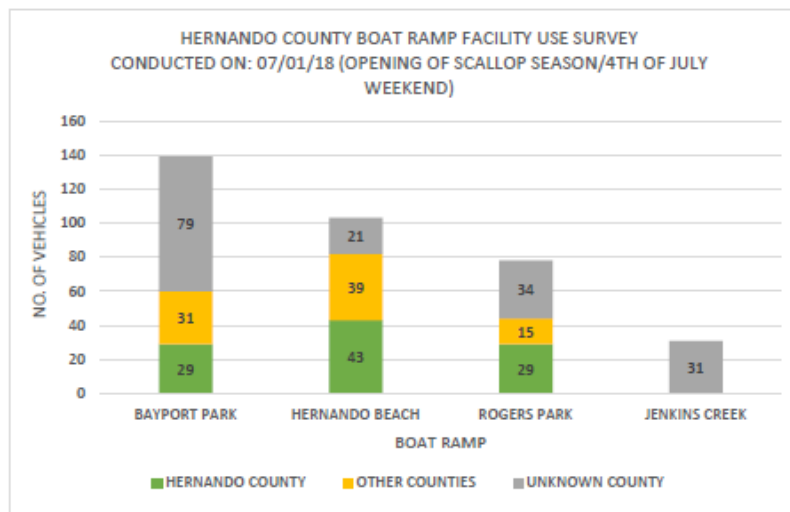


Figure 6. Peak Usage Summary: Opening Day - Scallop Season

1.3.2.2.2 Opening Day of Scallop Season

As shown in the Figure 6, a total of 351 boat launches occurred at these four County facilities. Bayport Park had the highest number of launches with 139, while

Jenkins Creek had the lowest with 31. The survey data collection forms and complete summary of results and analysis is included in Appendix E.

1.3.2.3 Public Engagement

Once the existing conditions inventory was complete, Cardno prepared an online survey for the public to provide their input on which facilities they use, what they like and dislike at each facility, why they avoid specific facilities, and suggestions to make each facility better. The comments and suggestions for each facility were incorporated into the recommended improvements as other site constraints allowed. Results of the online survey are included in Appendix F.

1.4 Qualitative Analysis

While it may be intuitive that the number and size of the boat ramp lanes dictate the capacity of the facility, it is the available parking at the site that typically establishes the baseline level of service. Addition of courtesy docks, make ready and tie down areas, and design of proper queuing areas and drive aisles/parking spaces also increase the facility level of service.

1.4.1 Facility Level of Service

1.4.1.1 Parking

To estimate the parking needs of the existing ramps, published boat launch rate data were reviewed to determine that number of parking spaces required to support the existing ramp configuration. The launch ramp use is usually concentrated during a three-hour launch period (morning) and a three-hour retrieval period (afternoon). A 5 to 10 minute per vessel time window for launching and parking has also been referenced as an optimum design rate. Based on this information and the following table, the recommended number of trailer parking spaces for up to five (5) ramp lanes ranges from 15 to 250 as shown in the following table.

Number of Lanes:	1	2	3	4	5
Minimum	15	45	75	125	175
Preferred	30	60	100	150	200
Maximum	45	75	125	175	250

Table 1. Recommended Trailer Parking

The number of parking spaces at each facility and their deviation from these standards appears on each of the Existing Conditions Inventory and Conceptual Master Plan figures for the studied sites in Chapter 2.

The size of parking spaces provided varies for each facility. Published design guidelines for Boating Facilities recommend a minimum parking space of 11 ft. wide x 40 ft. long for vehicles with boat trailers. The preferred space is 12 ft. wide, at a 60 degree angle, and is 40 ft. long as measured perpendicular to the drive aisle to provide approximately 2 ft. of overhang area. It is also preferred that the parking be designed to pull through as opposed to pulling in, then backing out.

In addition, an increasing number of patrons not towing boats are using boat launch facilities. It is recommended that car only spaces should be approximately 10-20% of the total spaces provided for the boat ramp facility.

1.4.1.2 Boat Ramps & Temporary Mooring Facilities

The inclusion of mooring facilities, including a boat launch dock and courtesy dock areas, allows for more efficient launches and a higher level of service for the site by reducing the launch times for each boat. It does this by allowing boaters to safely enter and exit the boat without blocking the boat launch area of the ramp. The preferred water depth at these docks is 4' below the low water elevation with a 3' minimum depth. The length of the courtesy docks should be designed to relate to the number of ramp lanes and parking spaces. Table 2 below shows the design guidelines for one (1) and two (2) lane ramp facilities.

One Ramp		Two Ramps	
Number of Parking Spaces	Mooring Facility Length, ft	Number of Parking Spaces	Mooring Facility Length, ft
10-20	50	30-40	50
21-30	70	41-60	70
31-40	90	61-80	90
41-50	110	81-100	110

Table 2. Mooring Facility Recommended Lengths

1.4.1.3 Queuing Area/Size/Length & Wait times

An ideal facility will provide space adjacent to the queuing area for a 12 ft. wide x 60 ft. long “make ready” area to allow boaters to fully prepare their boats for launch at the ramp without holding up the queue line. Similarly, a 12 ft. x 60 ft. area for tie down adjacent to the drive aisle leaving the ramp is also preferred. This area allows boaters to prepare their boat for safe travel on public roads without taking up a parking space or blocking drive aisles.

1.4.2 Design Standards

In addition to the recommended design standards listed above, consistency at each facility allows a better use experience by the public. One way to accomplish that is through the development and implementation of a Design Standards Manual that describes the typical design elements and standards for the County's parks and boat ramp facilities. The manual's intent would be to assist project designers and maintenance personnel in creating the necessary detailing to ensure appropriate design and consistent quality. The manual would not be intended to limit design possibilities, but rather to focus attention to those specific areas that would ensure safety, minimize maintenance, ensure sensitivity to natural features, and enhance the enjoyment of the facility users. Many of the boat ramps have entrance and informational signage; however, it is not consistent in presentation from site to site.

Another option is to make sure that there is adequate directional signage along the public roadways leading to the site. Directional sign placement outside of the facility should be based on the design speed of the public access road. Wayfinding signage for park patrons and boat ramp users should also be well placed and consistent from site to site.

The use of the same or similar type of pay station at each facility provides the users of multiple parks and associated ramps a familiarity with the system; thereby, reducing wait times and allows boats to move away from the launch ramps and courtesy docks more quickly.

Recent changes to the building code have impacted existing restroom facilities throughout the County park system. Restroom facilities must now meet finished floor elevations (FFE) that are 1.0' above the

FEMA Base Flood Elevation, which will require the bathrooms to be on piles and ADA ramp systems added at these facilities adding substantial cost to the projects. As new restroom facilities are constructed, facility size and ability to expand must be considered in the new design, as required by code.

All of the sites include picnic facilities. Some of these areas have pavilions with picnic tables, while others have picnic tables only. Standardizing these across the County parks based on usage needs will help keep maintenance costs down and allow for quicker replacement of broken items.

As all of the boat ramps and associated parks include or are adjacent to environmentally sensitive lands, proposed improvements should utilize best management practices for conservation lands when possible. Examples include wildlife friendly lighting, invasive species removal/control, and Low Impact Development (LID) design.

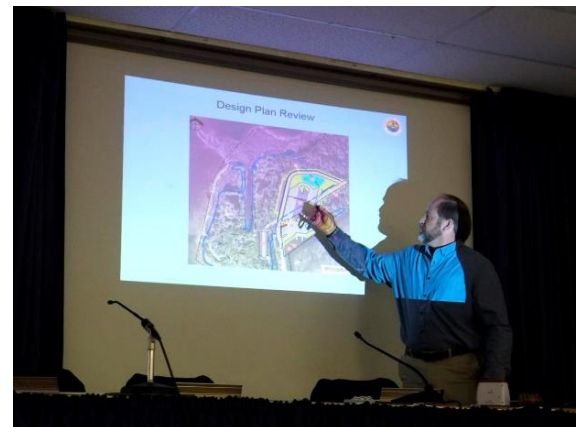
1.5 Master Plan Development

1.5.1 Public Workshops

Upon completion of the Needs Assessment for each facility, and the online survey closed, preliminary concept plans were prepared and presented at the first of two public workshops. The first workshop to share potential master plan options with the general public was held at the Coast Guard Auxiliary Building located in Hernando Beach on December 5, 2018 at 6pm. Approximately 50 residents, living in the vicinity of each facility were present. Aside from residents, County staff, and Cardno representatives, representatives from the Hernando County Port Authority and Fish & Wildlife Conservation Commission were also present. A brief introduction on each facility was provided by the Hernando County Aquatic Services and Waterways Manager prior to providing a summary of the data obtained from the online survey. In addition, a summary of the field surveys during Grouper and Scallop Season opening days was also provided. Those present were invited to review the concept plans, ask questions, and provide feedback. The exhibits used at this workshop are included as Appendix G, while the comment cards received at this meeting are included as Appendix H.

Once the comments had been received and reviewed, changes to the recommendations at each site were incorporated into the draft master plan concepts. On January 15, 2020 at 5pm, the second of two public workshops was held at the Coast Guard Auxiliary Building in Hernando Beach. County staff presented an overview of the project status which included a short question and answer period prior to inviting the attendees to review and comment on the updated concept plans. Consultant and county staff were available to answer questions during the workshop which included existing and concept plans for each of the four facilities included in the master plan study. Approximately 35 residents were in attendance where 37 comment cards were submitted for further consideration. For the second workshop, the original comment card was revised to include a checkbox with the following statement "I am generally satisfied with the improvements identified in this concept." Of the 37 cards submitted, twelve (12), or approximately 32 percent included the box checked.

In general, similar comments from the first workshop were again recorded at the second workshop with a few notable differences. Two notable comments received during the second workshop included Rogers Park and Bayport Park. For Rogers Park, the proposed T-configured gangway and floating dock for the canoe/kayak ramp was suggested to be a U-configuration with two gangways leading to the floating dock similar to the existing boat ramp dock. At Bayport Park, there was a suggestion to convert several of the



vehicular parking spaces into a staging area for preparing the boat for launching. The exhibits used at this workshop are included as Appendix I, while the comment cards received at this meeting are included as Appendix J.

Public comments received from both workshop meetings were reviewed, incorporated or will be evaluated again during future design phases as improvements are considered.

1.5.2 Requirements

For each of the proposed site master plans, a list of requirements to fully implement the plan was also identified. These requirements included needed permits, costs to implement, and needs priority as identified in Chapter 3.

2 Conceptual Master Plans

2.1 Bayport Park Boat Ramp

The historic Bayport Park is located at 4140 Cortez Boulevard, Spring Hill, FL 34607. The Park was originally developed in the 1950s with boat launch facilities and a fishing pier. Today, Bayport Park is one of the largest and most used boat ramp facilities operated by Hernando County. The park totals approximately 17.0 acres of which 1.50 acres is owned by Hernando County with the balance owned by the Southwest Florida Water Management District (SWFWMD). An existing land management agreement is maintained between the SWFWMD and Hernando County for county access and operation of Bayport Park, which is included in Appendix L. There is an additional 107.2 acres of land adjacent to the subject property which is also owned by the SWFWMD. Located at the confluence of the Weeki Wachee River and Gulf of Mexico, the park's three (3) boat ramp lanes and a single canoe / kayak ramp provides direct access to the Gulf, Weeki Wachee River and Mud River via the Bayport Channel.



Figure 7. Bayport Park Pier

As part of a cooperative effort, the park was expanded in 1999 to include 10 acres of SWFWMD owned land. Following expansion, the entire park underwent renovations including an elevated scenic boardwalk along the coastline, nature trails, fishing pier, shelters, a pavilion, new restrooms, an upgraded boat ramp and additional parking for boat trailers. The park is situated on the western section of the Great Florida Birding and Wildlife Trail and also includes markers describing the prehistoric and Civil War significance of the area.

Along with providing additional parking, the goal of the expansion was to create more areas for park patrons to experience the natural coastline and to protect the property's historical and cultural aspects. A fee is collected for use of the boat ramps and associated trailer parking areas while other uses of the park are exempt from the fee.

As shown on Figure 8, the facilities at this park include the following:

- Entrance and informational signage
- Electronic Fee (\$5) collector with credit card only payment option
- Parking for 46 vehicles with boat trailers (including 1 handicap)
- Parking for 53 passenger vehicles (including 4 handicap)
- Single lane concrete boat ramp (16 ft. wide by 60 ft. long)
- Double lane concrete boat ramp (32 ft. wide by 62 ft. long)
- Double canoe / Kayak concrete launch ramp (Width varies 9 – 21 ft. by 20 ft. long)
- Two (2) floating concrete mooring docks (8 ft. wide by 21 ft. long)
- One (1) timber platform (8 ft. by 16 ft.)

Insert Figure 8 Bayport Ex Cond map into PDF here

- Lighted fishing pier
- Covered picnic tables with grills
- Large pavilions with grills
- Restroom facilities
- Benches and trash receptacles
- Boardwalk

During site evaluations, field surveys and meetings with County staff several site constraints were identified that could limit what improvements might be pursued at the Bayport Park facility. The first constraint is that the majority of the property is owned by SWFWMD and not the County. Any

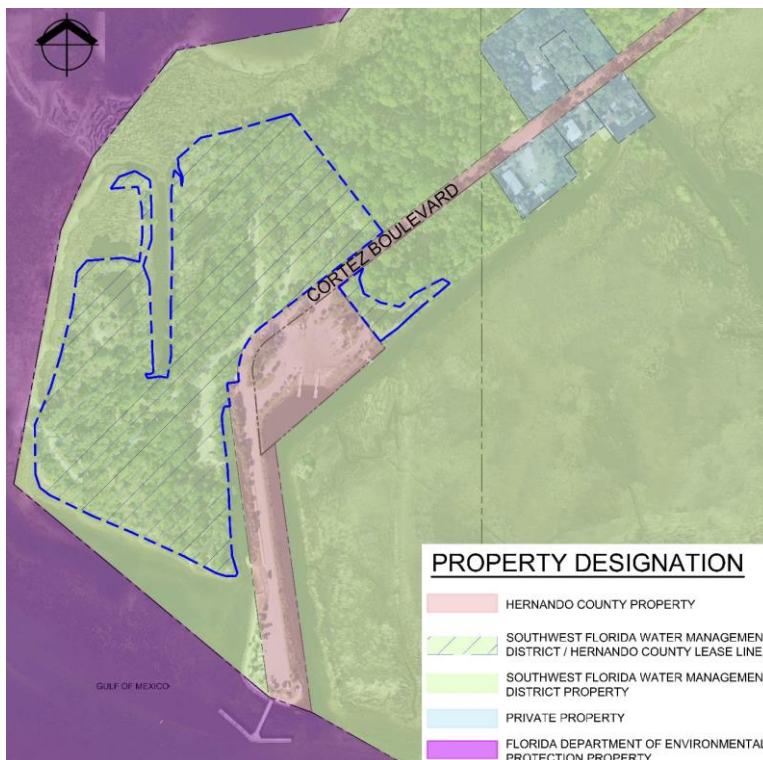


Figure 9. Ownership Inventory Map – Bayport Park

improvements or change in uses will need to be approved by SWFWMD and included in updated lease agreements.

The second constraint is the number of trees within the parking lot and ramp area while the third constraint is that the park is located within and adjacent to historical significant lands as well as environmentally sensitive areas (i.e., wetlands). A balance must be maintained to preserve the natural lands while still meeting the needs of the park and boat ramp users.

The last constraint is shown on Figure 9 which illustrates the close proximity of the park to single family residential and privately owned properties. A balance is required between operation of the park and quality of living environment for the adjacent residence.

2.1.1 Facility Maintenance

Existing infrastructure level of service deficiencies include a trailer parking shortage of 29 to 79 spaces and a mooring facility shortage of about 80 ft. based on available trailer parking spaces.

Hernando County operates and maintains the facilities at this park and ramp. Daily maintenance includes general site review and pickup, restroom servicing, solid waste and recyclable collection, minor site and infrastructure repairs and preparation of work orders for larger maintenance tasks.

On-going maintenance associated with the ramp includes lateral and corner bumper repair/replacement due to high ramp usage. Ramps are pressure cleaned during the winter low tides to improve launch/retrieval vehicle traction and reduce slippery ramp conditions for users. Based on the results of the structural evaluation, both of the boat ramps are in poor condition with excessive toe exposure and significant concrete cracking. The canoe/kayak ramp is reported in good condition with minimal contact

damage at the time of this report. The pre-fabricated aluminum docks are reported in satisfactory conditions with only minor damage to the dock itself, mooring piles and gangway. The timber dock is reported in fair condition with weathered and decayed timber elements and rotten and warped gangway components.

As published in the Hernando County Boat Ramp Master Plan prepared by the County in 2017, the existing courtesy dock was in need of replacement. The County replaced this dock in 2019 and continues to maintain this amenity for both commercial fishing charters as well as other personal watercraft users.

2.1.2 Conceptual Master Plan

A comprehensive web-based survey was developed and launched on multiple County websites to collect additional information about the users and their experience using this facility. Based on the survey results for Bayport Park, the public's overall experience with this facility is positive with the main criticism being the availability of trailer parking at or near the ramp (65.9 percent). The following responses were also noted by respondents of the web-based survey.
























Public Likes	Public Dislikes
 Quick access to Gulf of Mexico	 Not enough parking (65.9%)
 Nice boat ramp	 Excessive wait times (49.4%)
 Proximity to residential homes	 Inadequate boarding docks (21.3%)
 Easy parking for paddle boards & kayaks (separate launch area)	 Water depth too shallow for boats (20.1%)
 Spacious	 Too difficult to maneuver trailer (18.3%)
	 Trailer spaces too short/narrow (12.8%)
	 Damaged ramp pavement (11.0%)
	 Too remote/too far to drive (9.1%)
	 Narrow ramp lanes (8.5%)
	 Poor access roads (7.9%)
	 Pay station does not accept cash (4.9%)
	 Poor restroom facilities (4.9%)
	 No picnic/recreation (0.6%)
	 Too much trash (0.6%)

Table 3. Public Likes and Dislikes - Bayport Park

For master planning purposes, information collected from field observations, patron comments, public workshops and the web-based survey were compiled with the following elements identified as providing opportunities for improving the existing facilities at Bayport Park and boat ramp facility:

-  Opportunity 1 – Modify park entrance to improve access to the park
-  Opportunity 2 – Improve internal roadway circulation and ramp access
-  Opportunity 3 – Maximize trailer parking in accordance with lease agreement conditions
-  Opportunity 4 – Increase passenger vehicle parking in the Pavilion area

- ☺ Opportunity 5 – Provide ramp designation (signage or attendant) during peak hour use
- ☺ Opportunity 6 – Relocate existing pay station to decrease launch times during peak use hours
- ☺ Opportunity 7 – Repair ramp and dock deficiencies as listed in structural inspection report
- ☺ Opportunity 8 – Provide stormwater management facilities and Best Management Practices to improve water quality runoff from existing and proposed improvements
- ☺ Opportunity 9 – Add site lighting throughout facility to improvement security and safety
- ☺ Opportunity 10 – Maintenance the Bayport Channel including removal of obstructions from channel
- ☺ Opportunity 11 – Add additional dock capacity at the ramp and courtesy dock areas to increase ramp capacity and decrease launch/retrieval times.
- ☺ Opportunity 12 – Negotiate expanding the facility during the lease agreement renewal period.

The conceptual master plan in Figure 10 shows recommended improvements addressing these opportunities.

2.1.3 Opinion of Probable Cost

The following table summarizes the opinion of probable construction costs for the opportunities identified above. These estimates are based on 2020 published unit costs and are intended to represent an order of magnitude cost level for planning purposes only. Actual costs will be realized during design and implementation of the facility improvements. The costs analysis table used to prepare the summary table is provided in Appendix K.

IMPROVEMENT	COST ESTIMATE (2020 DOLLARS)	DESCRIPTION
Reconfiguration of Parking Spaces and Drive Aisles	\$500,000	Relocate the Park entrance and reconfigure all trailer and passenger parking spaces with new drive aisle layout.
Floating Dock and Gangway	\$27,000	Install gangway and floating mooring dock near the existing boat ramp.
Designated Tie-Down Area	\$5,000	Install sidewalk and water service to hose bibs.
Earthwork and Stormwater Areas	\$208,000	Construct stormwater pond(s) and overall site grading.
Restrooms and Pay Station	\$70,000	Relocate the restrooms and pay station.
Bank Stabilization and Sodding	\$110,000	Stabilize the bank and shoreline along the reconfigured drive aisles and sod internal areas.
On-Site Signage and Pavement Marking Improvements	\$10,000	Install standard entrance and informational signage at strategic locations.
Miscellaneous Site Improvements	\$54,000	Install pedestrian sidewalks and site lighting.

Subtotal	\$984,000	
Design & Permitting Fee	\$392,000	Taken as percentages of improvements subtotal. This includes design (20%) and permitting (20%).
Improvements, Design & Permitting Fee Subtotal	\$1,376,000	
General Conditions & Contingency	\$508,000	Taken as percentages of improvements subtotal. This includes general conditions (7%) and contingency (30%).
Total Improvements Cost	\$1,884,000	

Table 4. Total Opinion of Probable Cost - Bayport Park

Insert Figure 10 Bayport Concept MP into PDF here

2.2 Rogers Park Boat Ramp

Rogers Park and Boat Ramp facility is located at 7240 Shoal Line Boulevard, Weeki Wachee, FL 34607. The 3.80 acre subject property is accessed from Patterson Road and is owned and operated by Hernando County. Located on the Weeki Wachee River, this ramp provides access to the Weeki Wachee Springs and the Gulf of Mexico. Although the Weeki Wachee this is a fresh water river at Rogers Park, it is tidally influenced and brackish during extreme tides from the Gulf of Mexico.

This facility offers a variety of uses including boating, kayaking, a playground, sand volleyball, picnicking, part-time concessions, swimming and a beach. Significant facility updates were completed in 2017 through a cooperative Low Impact Development (LID) project with the Southwest Florida Water Management District to improve parking, circulation and drainage at the park. The facility has significant importance among the community as well as to seasonal users who visit Hernando County just for the ramps and waterways.

Existing facilities include the following:

- Entrance sign located approximately 100 feet into the property
- Multiple signs occur on multiple post throughout the facility
- Electronic Fee (\$5) collector with credit card only payment option
- Parking for 16 boat trailers (including 1 handicap)
- Parking for 62 passenger vehicles (including 3 handicap)
- Double canoe / kayak concrete launch ramp (10 ft. wide by 20 ft. long) with rubber matting and railing
- Single lane concrete boat ramp (19 ft. wide by 23 ft. long)
- Floating aluminum mooring dock (50 ft.)
- Swimming area with water access ramp
- Playground and sand volleyball court
- Beach picnic areas including shelters and grills
- Restroom and recycling
- Part-time concession
- Benches and trash receptacles

During site evaluations, field surveys and meetings with County staff several site constraints were identified that could limit what improvements might be pursued at the Rogers Park facility. The biggest constraint is that the site is completely built out which offers limited opportunities for expansion. As shown on Figure 12, the site is surrounded by roads, water, or private property. Within the park site, the launch channel is narrow and shallow further limiting options at this location. A mixture of motorboat, canoe and kayak launches occur within close proximity along this channel. The existing facility just meets the minimum number of trailer parking spaces; however, the site is under parked by 14 and 29 spaces, respectively as compared to the preferred and maximum recommended spaces. The park meets the minimum mooring length of 50 ft. for the provided 16 trailer parking spaces. A narrow exit drive isle results in trailer runoff and contact with wooden bollards located on the exit shoulder.

Insert Figure 11 – Rogers Park ex cond plan here in PDF

2.2.1 Facility Maintenance

Hernando County operates and maintains the facilities at this park and ramp. Daily maintenance includes general site review and pickup, restroom servicing, solid waste and recyclable collection, beach raking, minor site and infrastructure repairs and preparation of work orders for larger maintenance issues.



Figure 12. Ownership Inventory Map – Rogers Park

On-going maintenance associated with the ramp includes lateral and corner bumper repair/replacement due to high ramp usage. Based on the results of the structure evaluation, the ramps and docks at this facility are in good condition with only minimal contact damage. However, the handrail at the canoe/kayak ramp were noted as being loose at the time of inspection.

Inspection and cleaning of the recently installed trench drains and pervious pavement should also be conducted in accordance with permit requirements to ensure proper operation of the stormwater management system.

2.2.2 Conceptual Master Plan

Based on the online survey results for this site, the public liked the facility and it is heavily used; however, the overwhelming criticism (75.6 percent) is that the wait time experienced during launching at the boat ramp was much too long. The following responses were also noted by respondents of the web-based survey.



























Public Likes	Public Dislikes
 Access to fresh water for flushing engines	 Excessive wait times (75.6%)
 Easy access to the Gulf and Weeki Wachee	 Not enough parking (55.7%)
 Clean	 Too difficult to maneuver trailer (36.2%)
 Proximity to restaurants	 Trailer spaces too short/narrow (18.7%)
 Proximity to residential homes	 Inadequate boarding docks (17.5%)
	 Water depth too shallow for boats (16.3%)
	 Too much trash (14.6%)
	 Narrow ramp lanes (14.6%)
	 Poor access roads (13.4%)
	 Poor restroom facilities (5.3%)
	 Pay station does not accept cash (2.8%)
	 Too remote/too far to drive (2.4%)
	 Damaged ramp pavement (1.6%)
	 No picnic/recreation (0.4%)

Table 5. Public Likes and Dislikes - Rogers Park

Based on field observations, patron comments, public workshop and web-based survey the following elements were identified as opportunities to improving the existing facilities at Roger Park and Boat Ramp.

-  Opportunity 1 – Improve the maintenance of traffic between the canoe / kayak and motor boats both at the ramps and within the parking lot. This is accomplished with directional signs and canoe / kayak ramp and mooring improvements
-  Opportunity 2 – Improve the canoe / kayak ramp including adding a floating mooring dock and easy launch ramp.
-  Opportunity 3 – Repair or replace the handrail at the canoe / kayak ramp to correct stability at the connection point with the ramp.
-  Opportunity 4 – Stabilize the bank and shoreline between the kayak and boat ramps. Possible options include slope matting, armour, rip-rap or gabion material.
-  Opportunity 5 – Increase the width of the exit lane and/or relocate existing wood bollards to eliminate contact with trailers.
-  Opportunity 6 – Modify the width and angle of trailer parking to improve access to the stalls.
-  Opportunity 7 – Implement standard signage including entry and internal public informational and usage signs.

The recommended improvements to address these items are shown on Figure 13.

Insert Figure 13 – Rogers Park Conceptual MP in PDF here

2.2.3 Opinion of Probable Cost

The following table summarizes the opinion of probable construction costs for the opportunities identified above. These estimates are based on 2020 published unit costs and are intended to represent an order of magnitude cost level for planning purposes only. Actual costs will be realized during design and implementation of the facility improvements. The costs analysis table used to prepare the summary table is provided in Appendix K.

IMPROVEMENT	COST ESTIMATE (2020 DOLLARS)	DESCRIPTION
Gangway and Floating Mooring Dock	\$38,000	Install gangway and floating mooring dock (6' wide by 100' long) at the canoe / kayak launch.
Handrail Improvements at Canoe / Kayak ramp	\$1,000	Repair as necessary or replace the handrail at the canoe / kayak launch area.
Bank Stabilization	\$7,500	Stabilize the bank and shoreline between the canoe / kayak launch and the boat ramp dock.
Parking Improvements	\$7,000	Modify the angle of trailer parking spaces to improve stall access. Relocate wheel stops and sod areas of asphalt removal.
On-Site Signage and Pavement Marking Improvements	\$5,000	Install standard entrance and informational signage at strategic locations. Implement directional signage designating canoe / kayak use areas. Install pavement markings for parking spaces and traffic flow.
Miscellaneous Site Improvements	\$32,500	Relocate the existing bollards nearest to the exit that interfere with boat trailers exiting the park. Install site lighting.
Subtotal	\$93,500	
Design & Permitting Fee	\$37,500	Taken as percentages of improvements subtotal. This includes design (20%) and permitting (20%).
Improvements, Design & Permitting Fee Subtotal	\$131,000	
General Conditions & Contingency	\$48,000	Taken as percentages of improvements subtotal. This includes general conditions (7%) and contingency (30%).
Total Improvements Cost	\$179,000	

Table 6. Total Opinion of Probable Cost – Rogers Park

2.3 Jenkins Creek Park Boat Ramp

Jenkins Creek Park and Boat Ramp is located at 6401 Shoal Line Boulevard, Weeki Wachee, FL 34607. This 27.9 acre site is accessed from Shoal Line Boulevard and is owned and operated by Hernando County. The facility is located between Rogers Park and Hernando Beach Park Boat Ramps, directly across Shoal Line Boulevard from Linda Pedersen Park. Jenkins Creek offers a one lane boat ramp to launch and receive boats and watercraft. This location is intended to provide access to the Gulf of Mexico from Jenkins Creek.

As shown in Figure 15, the facilities at this park include the following:

- Small Park Entrance sign placed approximately 50 feet into the property
- Regulatory signage in the median entry to the park
- Multiple signs occur on multiple post throughout the facility
- Electronic Fee (\$5) collector with credit card only payment option
- Parking for 11 boats trailers (including 2 handicap)
- Parking for 81 passenger vehicles (including 3 handicap)
- One (1) single lane concrete boat ramp (16 ft. wide by 43 ft. long)
- One (1) wood floating dock for mooring (6 ft. wide by 20 ft. long)
- Timber boardwalk/fishing pier
- Pedestrian and equestrian bridge access to the Equestrian Walk and Living Shoreline
- Restroom facility
- Covered picnic tables
- Trash receptacles



Figure 14. Jenkins Creek Park Ramp at Low Tide

shallow and will need to be dredged for use by larger vessels.

During site evaluations, field surveys and meetings with County staff several site constraints were identified that limit what improvements might be pursued at the Jenkins Creek Park facility. The two biggest constraints stem from the current location of the boat ramp on the site: the ramp is unusable at low tide and the lack of clearance under the pedestrian bridge during high tide. As shown in Figure 14, only shallow draft boats, canoes, kayaks, and paddleboards can use the ramp during low tide. The lack of clearance during high tide allows larger boats to be launched; however the vessels cannot pass under the pedestrian bridge to access to the Gulf during the higher tides. Additionally, Jenkins Creek in this area is extremely

Insert Fig 15 – Jenkins Ck Park Existing cond in PDF here

As with many of the sites, the park includes environmentally sensitive lands that require a balance of preservation of the natural lands while still meeting the needs of the park and boat ramp users. The reconfiguration of the site is limited by an existing wetlands and stormwater box culvert immediately south of the park entrance under Shoal Line Boulevard. The existing facility is under parked from 4 to 34 trailer parking spaces as compared to recommended minimum to preferred criteria. The park also is underserved as the existing mooring length of 20 ft. does not meet the minimum 50 feet criteria for a single ramp.

Ownership in and around the park is shown in Figure 16.

2.3.1 Facility Maintenance

Hernando County operates and maintains the facilities at this park and ramp. Daily maintenance includes general site review and pickup, restroom servicing, solid waste collection, minor site and infrastructure repairs and preparation of work orders for larger maintenance issues.

On-going maintenance associated with the ramp includes lateral and corner bumper repair/replacement on an as-needed basis. No major repairs are needed to the ramp; however, the base of the ramp should be extended to improve launch access during low tide periods. Propeller washout at the base of the ramp was noted in the Master Plan as needing repaired. The threads or decking on the fishing pier and river access bridge need to be replaced according to the 2017 Master Plan.

The structural evaluation rated the ramp in satisfactory condition with toe exposure and concrete as the only noted deficiencies. The timber dock was in good condition with minimal damage or decay to the dock or timber piles.



Figure 16 Ownership Inventory Map – Jenkins Creek Park

2.3.2 Conceptual Master Plan

Based on the survey results for this site, the public overall opinion of the park was good with the main criticisms including water depth was too shallow to adequately launch boats (57.5%), not enough parking (27.5%) and inadequate boarding docks (26.1%). Another major concern reported during the field surveys was the issue with tides and associated clearance under the pedestrian/equestrian bridge. The following is a list of responses provided by the respondents of the web-based survey.


























Public Likes	Public Dislikes
 Quick access to Gulf of Mexico	 Water depth too shallow for boats (57.5%)
 Easy parking for paddle boards & kayaks (separate launch area in Linda Pedersen Park)	 Not enough parking (27.5%)
 Ease of parking	 Inadequate boarding docks (26.1%)
 Spacious	 Narrow ramp lanes (20.3%)
	 Too difficult to maneuver trailer (17%)
	 Trailer spaces too short/narrow (16.3%)
	 Excessive wait times (12.4%)
	 Poor restroom facilities (11.8%)
	 Damaged ramp pavement (9.2%)
	 Poor access roads (8.5%)
	 Too remote/too far to drive (5.9%)
	 Pay station does not accept cash (4.6%)
	 No picnic/recreation (3.9%)
	 Too much trash (3.3%)

Table 7. Public Likes and Dislikes - Jenkins Creek Park

Based on field observations, patron comments, public workshop and web-based survey the following elements were identified as opportunities to improving the existing facilities at Jenkins Creek Park.

-  Opportunity 1 – Repair ramp and dock deficiencies as listed in the structural evaluation report. In its current location, the future use of this ramp will be primarily for canoe, kayak and small motorized vessels due to water depth and overhead clearance issues.
-  Opportunity 2 – Construct a new ramp and mooring facilities south of the pedestrian bridge and into deeper channel waters.
-  Opportunity 3 – Convert passenger vehicle parking stalls into trailer stalls where the site can accommodate.
-  Opportunity 3 – Re-stripe the existing parking lot to accommodate the proposed ramp and additional trailer parking.
-  Opportunity 4 – Provide pedestrian trail connection to neighboring Linda Pedersen Park
-  Opportunity 5 – Provide unified signage consistent with Parks Master Plan and Boat Ramp Master Plan design standards including entry and internal public informational and usage signs. Place park signage for this facility within the entry median and move regulatory signage.
-  Opportunity 6 – Provide offsite informational signage along Shoal Line Boulevard (northbound and southbound) regarding the park entries (needed for both Jenkins Creek and Linda Pedersen)

These proposed improvements are shown on the Conceptual Master Plan in Figure 17.

Some additional long term opportunities to be evaluated during the Phase 2 Master Planning effort include improvements to the waterway crossing under Shoal Line Blvd to allow non-motorized vessel

Insert Figure 17 – Jenkins Concept MP in PDF here

access to Linda Pedersen Park, allowing motorized launches to primarily occur at Jenkins Creek while non-motorized launch access would occur at Linda Pedersen. This would require reconfiguration of access to the Jenkins Creek site. Another option would be to identify sensitive habitat and wetland limits for further expansion of the parking area to provide additional boat trailer parking onsite, improving level of service.

2.3.3 Opinion of Probable Cost

The following table summarizes the opinion of probable construction costs for the opportunities identified above. These estimates are based on 2020 published unit costs and are intended to represent an order of magnitude cost level for planning purposes only. Actual costs will be realized during design and implementation of the facility improvements. The costs analysis used to prepare the summary tables are provided in Appendix K.

PHASE I IMPROVEMENTS

IMPROVEMENT	COST ESTIMATE (2020 DOLLARS)	DESCRIPTION
Existing Ramp and Dock Improvements	\$20,000	Repair existing ramp and dock per the structural evaluation report.
New Boat Ramp	\$127,000	Remove section of the fixed dock and install new concrete boat ramp.
Gangway, Floating Mooring Docks & Easy Dock	\$65,000	Install gangway and floating mooring dock at the new boat ramp. Install easy dock for kayak use near existing ramp.
Bank Stabilization	\$6,500	Stabilize the bank and shoreline on both sides of the new boat ramp.
Parking Improvements	\$17,500	Relocate handicap parking space, install additional trailer stalls and landscape islands.
On-Site Signage and Pavement Marking Improvements	\$7,500	Install standard entrance and informational signage at strategic locations. Install pavement markings for parking spaces and traffic flow
Miscellaneous On-Site Improvements	\$11,000	Install pedestrian sidewalks and site lighting.
Off-Site Sidewalk and Bridge	\$44,000	Install sidewalk and boardwalk bridge connecting Jenkins Creek Park and Linda Pedersen Preserve.
Off-Site Signage Improvements	\$1,500	Install informational signage along Shoal Line Boulevard regarding park entries for Jenkins Creek Park and Linda Pedersen Preserve.
Subtotal	\$300,000	

Design & Permitting Fee	\$120,000	Taken as percentages of improvements subtotal. This includes design (20%) and permitting (20%).
Improvements, Design & Permitting Fee Subtotal	\$420,000	
General Conditions & Contingency	\$155,000	Taken as percentages of improvements subtotal. This includes general conditions (7%) and contingency (30%).
Total Improvements Cost	\$575,000	

Table 8. Total Opinion of Probable Cost – Jenkins Creek Park Phase I Improvements

PHASE II IMPROVEMENTS

IMPROVEMENT	COST ESTIMATE (2020 DOLLARS)	DESCRIPTION
Asphalt Parking Area	\$28,000	Construct an additional passenger vehicle parking area.
Subtotal	\$28,000	
Design & Permitting Fee	\$11,000	Taken as percentages of improvements subtotal. This includes design (20%) and permitting (20%).
Improvements, Design & Permitting Fee Subtotal	\$39,000	
General Conditions & Contingency	\$14,000	Taken as percentages of improvements subtotal. This includes general conditions (7%) and contingency (30%).
Total Improvements Cost	\$53,000	

Table 9. Total Opinion of Probable Cost - Jenkins Creek Park Phase II Improvements

2.4 Hernando Beach Boat Ramp

The Hernando Beach Boat Ramp is located at 4483 Calienta Street, Hernando Beach, Florida 34607. Parking for boat trailers and passenger vehicles is provided across from the ramp facility on the east side of Calienta Street. Combined, the ramp and parking facilities total approximately 4.4 acres and are owned and operated by Hernando County. Located on the Hernando Beach Channel, this ramp provides direct access to the Gulf of Mexico. While offering uses primarily focused on nearshore and deep water fishing and recreational boating activities, the ramp has significant importance to the local community as well as to seasonal users who visit the County.

As part of the 2012 Hernando Beach Channel Dredge Project, seagrass protection zones and mitigation were established. In addition, construction of the overflow lot resulted in wetland impacts that were mitigated by the creation of habitat adjacent to the parking facilities. Passenger parking was also added in 2016 with the construction of a pervious parking lot that doubles as a stormwater management and treatment facility.

As shown on Figure 18, facilities at the ramp and parking lots include the following:

- Entrance signage for ramp and parking areas
- Electronic fee (\$5 collector with credit card only payment option)
- Parking for 91 boat trailers located in the Main and Overflow lots (including 4 handicap)
- Parking for 26 passenger vehicles located in a “Friends of Boaters” lot (including 1 handicap)
- Two (2) single lane concrete boat ramps (18 ft. wide by 43 ft. long)
- One (1) double lane concrete boat ramp (30 ft. wide by 43 ft. long)
- Two (2) floating pre-fabricated aluminum mooring docks (8 ft. wide by 24 ft. long)
- Restroom facility
- Pedestrian crosswalks from parking area to boat ramps
- Informational signage
- Trash receptacles
- Stormwater management & wetland mitigation facilities

During site evaluations, field surveys and meetings with County staff several site constraints were identified that limit what improvements might be pursued at the Jenkins Creek Park facility. The two biggest constraints limiting an improved level of service is the number of ramps and the layout of the boat ramp. Four (4) ramps are available which limits the number of vessels launched during peak use periods.

The site geometry is limiting in several ways. First, the launch and retrieval area is limited which results in backing maneuvers into Calienta Street right-of-way. As there is no dedicated queing area, during times of peak use, users stack within Calienta Street waiting to launch their vessels. The parking area is located on the east side of Calienta Street, while the ramps are located on the west side. This causes increased wait times between launches due to the distance from the ramp to parking. It also creates additional hazards for boaters walking back to the ramp and docks after parking their vehicle.

Insert Figure 18 Ex Cond – Hernando Beach in PDF here

Additionally, the site limitations don't allow for a boat tie-down area to be provided at the ramp. Lastly, the width of the channel and number of ramps limit the length of the mooring docks, which ultimately affects the number of vessels launched, especially during peak periods.

The other main constraint deals with the availability of land surrounding the existing parking area. As shown in Figure 19, expansion opportunities are not available along the commercially developed Calienta Street corridor. Roadway and drainage improvements are under design at this time. Expansion into adjacent parcels to the east that front Shoal Line Boulevard may have wetland and mitigation impacts. Vehicle and pedestrian travel time from these parcels also increases due to the increasing distance from the ramp. Opportunities to expand into potentially available parcels in the vicinity of the Hernando Beach ramp facility would require property acquisitions and future master planning during future phases of development.

2.4.1 Facility Maintenance

Hernando County operates and maintains the facilities at this park and ramp. Daily maintenance includes general site review and pickup, restroom servicing, solid waste and recyclable collection, minor site and infrastructure repairs and preparation of work orders for larger maintenance issues.

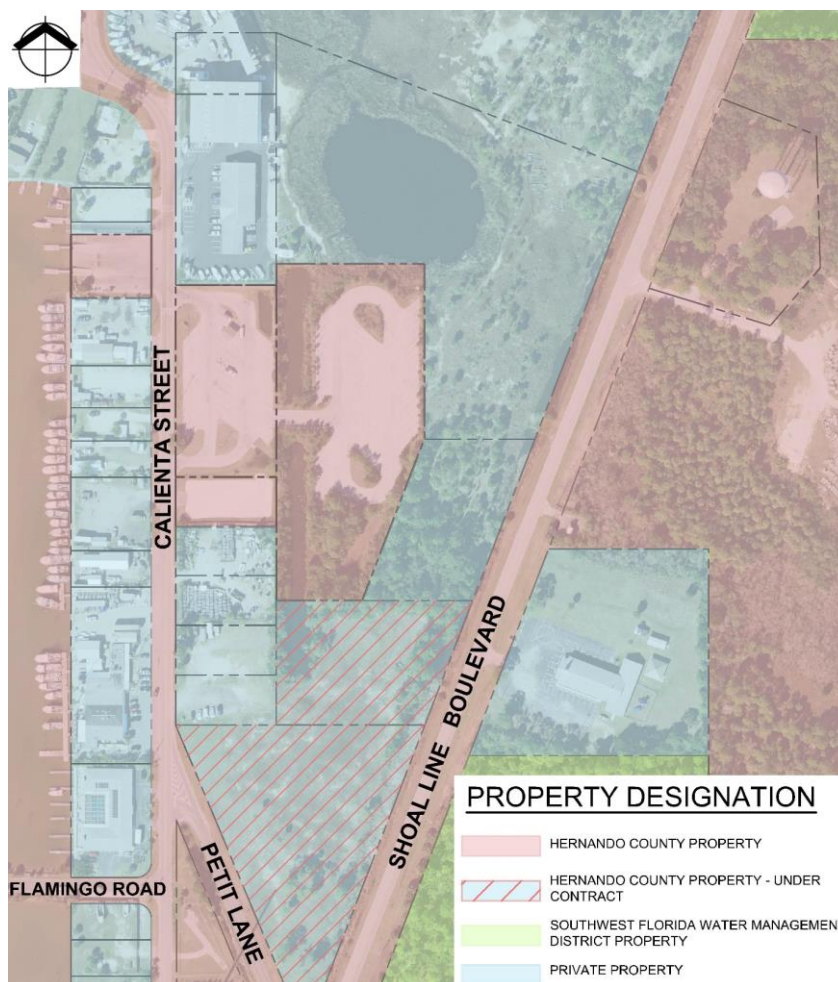


Figure 19. Ownership Inventory Map - Hernando Beach Boat Ramp

On-going maintenance associated with the ramp includes lateral and corner bumper repair/replacement due to high ramp usage. Oyster growth removal from the sidewall of the ramps and floating docks is performed on a regular basis to eliminate user contact. Ramps are cleaned during winter low tides to improve vehicle traction and reduce the slip and fall hazard to users. Floating debris cleanup is another ongoing maintenance activity at the boat ramp site. Due to its location, significant floating debris from the canal can be deposited on the ramps, especially when the winds are prevailing from the west or northwest.

It was noted in the Hernando County Boat Ramp Master Plan that the waterward base of the ramps are in need of resurfacing or structural repairs to correct cracking and drop-offs.

Similar conditions were noted in the structural evaluation, the ramps are in fair condition with the noted toe exposure (up to 12-inches);

cracks and spalled concrete on the ramps, and slippery and uneven surfaces. The docks were noted in satisfactory condition with minor contact damage to the docks, mooring piles and gangways.

The existing facility is under parked from 84 to 159 trailer parking spaces as compared to recommended minimum to preferred criteria. The park also is underserved as the existing mooring length of 96 ft. does not meet the minimum 110 feet criteria for the four existing ramps.

2.4.2 Conceptual Master Plan

Based on the web survey results for this facility, the public liked the facility which provides quick access to the Gulf; however, its main criticism focused on not enough parking (42.4 percent) and excessive wait time to launch (64.8 percent). The following is a list of responses provided by the respondents of the web-based survey.







Public Likes	Public Dislikes
 Quick access to Gulf of Mexico	 Excessive wait times (64.8%)
 Nice boat ramp	 Not enough parking (42.4%)
 Proximity residential homes	 Poor access roads (12.8%)
 Ease of parking	 Too difficult to maneuver trailer (12.0%)
 Spacious	 Too remote/too far to drive (12.0%)
	 Poor restroom facilities (9.6%)
	 Inadequate boarding docks (9.6%)
	 Pay station does not accept cash (5.6%)
	 No picnic/recreation (5.6%)
	 Trailer spaces too short/narrow (5.6%)
	 Too much trash (4.8%)
	 Narrow ramp lanes (4.0%)
	 Water depth too shallow for boats (3.2%)
	 Damaged ramp pavement (2.4%)

Table 10. Public Likes and Dislikes - Hernando Beach Boat Ramp

Information collected from field observations, patron comments, public workshop and web-based survey were compiled with the following elements as opportunities to improving the existing facilities at Hernando Beach Boat Ramp.

-  Opportunity 1 – Re-configure the existing ramp to include a fifth lane.
-  Opportunity 2 – Standard entrance and information signage at the ramp

Future Phase 2 improvement opportunities may include the following for consideration:

-  Future Option 1 - Provide an additional access to the parking facilities from Shoal Line Boulevard.
-  Future Option 2 – Re-design the internal circulation of the Main Parking Lot to accommodate

Insert Figure 20 Concept MP – Hernando into PDF here

vehicle stacking prior to launching. This is needed to remove queuing of vehicles in Calienta Street right-of-way.

- ☺ Future Option 3 – Provide maintenance of traffic through ramp attendants during period use periods. This may include ramp lane designations and variable message signs.
- ☺ Future Option 4 – Repair deficiencies as listed in structural inspection report
- ☺ Future Option 5 – Update pedestrian crosswalk to current standards including a pedestrian activated LED signage.
- ☺ Future Option 6 – Standardize informational /directional signs for the County's boat ramp facilities.

These proposed improvements are shown on the Conceptual Master Plan for the facility in Figure 20.

2.4.3 Opinion of Probable Cost

The following table summarizes the opinion of probable construction costs for the opportunities identified above. These estimates are based on 2020 published unit costs and are intended to represent an order of magnitude cost level for planning purposes only. Actual costs will be realized during design and implementation of the facility improvements. The costs analysis table used to prepare the summary table is provided in Appendix K.

IMPROVEMENT	COST ESTIMATE (2020 DOLLARS)	DESCRIPTION
Boat Ramp Improvements	\$228,000	Widen existing boat ramp to include a fifth lane and extend the existing docks.
Floating Dock and Gangway	\$27,000	Install gangway and floating mooring dock to service a fifth lane at the existing boat ramp.
On-Site Signage Improvements	\$3,500	Install standard entrance and informational signage at strategic locations.
Miscellaneous Site Improvements	\$8,000	Install site lighting.
Subtotal	\$266,500	
Design & Permitting Fee	\$106,500	Taken as percentages of improvements subtotal. This includes design (20%) and permitting (20%).
Improvements, Design & Permitting Fee Subtotal	\$373,000	
General Conditions & Contingency	\$138,000	Taken as percentages of improvements subtotal. This includes general conditions (7%) and contingency (30%).
Total Improvements Cost	\$511,000	

Table 11. Total Opinion of Probable Cost – Hernando Beach Boat Ramp

3 Implementation & Funding Sources

3.1 Funding Sources

3.1.1 Historic Funding

The County has performed many improvements to the coastal boat ramp facilities since their construction. Funding sources have varied based on the cost of the improvements, the function and reason for the improvements and in which facility the improvements were made. Sources of funds for previous projects to improve the level of service at the facilities include the following:

- Hernando County Port Authority
- Hernando County Action 76 committee
- Hernando County Capital Improvement Program (CIP) & Annual Budget Maintenance Funds
- Impact Fees
- Florida Boating Improvement Program (FBIP)
- Southwest Florida Water Management District (SWFWMD)
- Environmentally Sensitive Lands (ESL) Program
- Florida Recreational Development Assistance Program
- Federal Emergency Management Agency (FEMA)

Port Authority funding has been used to purchase land and expand parking lots, repair boat ramps, and construct boat ramps. FEMA funds were used to repair the pedestrian bridge at Jenkins Creek Park after it was damaged during the 1993 No Named Storm. Cooperative Funding with SWFWMD has been used for parking lot and driveway improvements at both Bayport and Rogers Parks. Some of these projects included stormwater retrofits to begin addressing the need for stormwater treatment at the facilities. The Florida Boating Improvement Program has helped fund construction of expanded parking facilities and new ramps, while the CIP has replaced boat ramps and repaired parking lots.

3.1.2 Future Funding

Many of the historic funding options are still available to the County to help fund the proposed improvements at each of the facilities. Additionally, the Resources and Ecosystems Sustainability, Tourist Opportunities, and Revived Economies of the Gulf Coast Act of 2012 (RESTORE Act) has allocated 80% of the penalties resulting from the Deepwater Horizon oil spill to the Gulf Coast Restoration Trust Fund.

The RESTORE funds are available to coastal communities to fund economic and ecological recovery of the Gulf Coast. Projects within Florida are formally outlined the State Expenditure Plan. Application for the funds are available online using a joint application for Natural Resource Damage Assessment, RESTORE, National Fish and Wildlife Foundation's Gulf Environmental Benefit Funds.

The FBIP provides funding to eligible projects by governmental agencies by providing competitive grants to improve boating access and other boating related activities on coastal and inland Florida waters. As defined by the program, eligible uses for the funds include:

- Boat ramps; lifts and hoists; marine railways; and other public launching facilities
- Piers, docks and other mooring facilities
- Recreational channel marking and other uniform waterway markers

- Derelict vessel removal
- Boating education
- Economic development initiatives that promote boating
- Other local boating-related activities that enhance boating access for recreational boaters

The preparation of this master plan will allow for better project planning to occur to allow both Public Works (Port Authority and Waterways) better use of CIP funds, as proper programming can occur for phasing of the recommended improvements. In addition to funds from Public Works, many of these site are located within County Parks. The most cost effective use of funds would include funding and improvements by the Parks Department in conjunction with the improvements at each site. For example, master signage, parking lot improvements including additional spaces and better flow, improve the level of service for all patrons, not just those using the boat ramps. Impact fees for use within the parks will also help fund needed improvements. Also, as the Sensitive Lands Department maintains the environmentally sensitive lands at Bayport Park, maintenance funding for expanding the park will also need to be considered.

Lastly, annual budgets for both the Port Authority and Waterways need to budget for maintenance of additional facilities as they are constructed. This would include use of the Transportation Trust Fund for maintenance of ramps and docs only, parking and user fees, and boat registration fees. Also, as new projects are planned, designed and constructed, evaluating the life cycle cost of the improvement will help to find the most cost effective solution for the County.

3.2 Phasing

Each of the above funding sources require creation of projects and planning on when the proposed project funding may be available. Many of the recommendations in this report are shown to be planned and constructed in one phase, while others propose a multi-phased approach.

For each site, the recommended improvements will need to be approved by various permitting agencies. In addition, as shown on the master plans, improvements at the site will need to meet current stormwater, floodplain, site, and building codes. Permits for the improvements will include an ERP through either FDEP or SWFWMD, a site development permit through Hernando County as well as building permits for the relocated/renovated restroom facilities. Due to the environmentally sensitive lands and work proposed below the mean high water line (MHWL), permits from ACOE and FWC will likely be necessary. Finally, FDEP water and sewer permits will be needed for the relocated/renovated restrooms.

Additional site specific needs include:

- An amendment to the land management agreement for Bayport Park
- Continue the evaluation of additional land acquisition for Hernando Beach Boat ramp site

Once project budgets and funding has been identified, each project will proceed in five (5) basic steps: Schematic Design, Design Development, Construction Documents, Construction, Operations and Maintenance. Typically, a project would have a step preceding those listed above: Programming. This master plan document takes the place of the programming step.

3.3 Next Steps

The County has taken a key step forward in improving the level of service for the coastal boat ramps within Hernando County through the preparation of this Master Plan. Additional actions will be needed to address the needs identified here and look to future needs. The following items are those needed to keep moving forward:

- Prioritize improvements
- Identify and Apply for funding project funding & grants
- Coordinate wayfinding and signage improvements with the Parks Department
- Coordinate parking and site improvements with scheduled Parks improvements
- Schedule all maintenance activities
- Prepare Freshwater Boat Ramp Master Plan
- Update the Coastal and Freshwater Boat Ramp Master Plans for future growth through 2040

By performing the above tasks, updating the Master Plans regularly, working with other departments to make the best use of County funds, and incorporating feedback from regular users for ongoing maintenance and future improvement, Hernando County will continue to be on the forefront of improved water access for its residents and visitors.

About Cardno

Cardno is an ASX-200 professional infrastructure and environmental services company, with expertise in the development and improvement of physical and social infrastructure for communities around the world. Cardno's team includes leading professionals who plan, design, manage, and deliver sustainable projects and community programs. Cardno is an international company listed on the Australian Securities Exchange [ASX:CDD].

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