Josiah Cephas Weaver Park Shoreline Improvements Public Meeting

Presented by:

CPH Consulting, LLC

March 24, 2026 | City of Dunedin

City of DUNEDIN Florida

Introductions

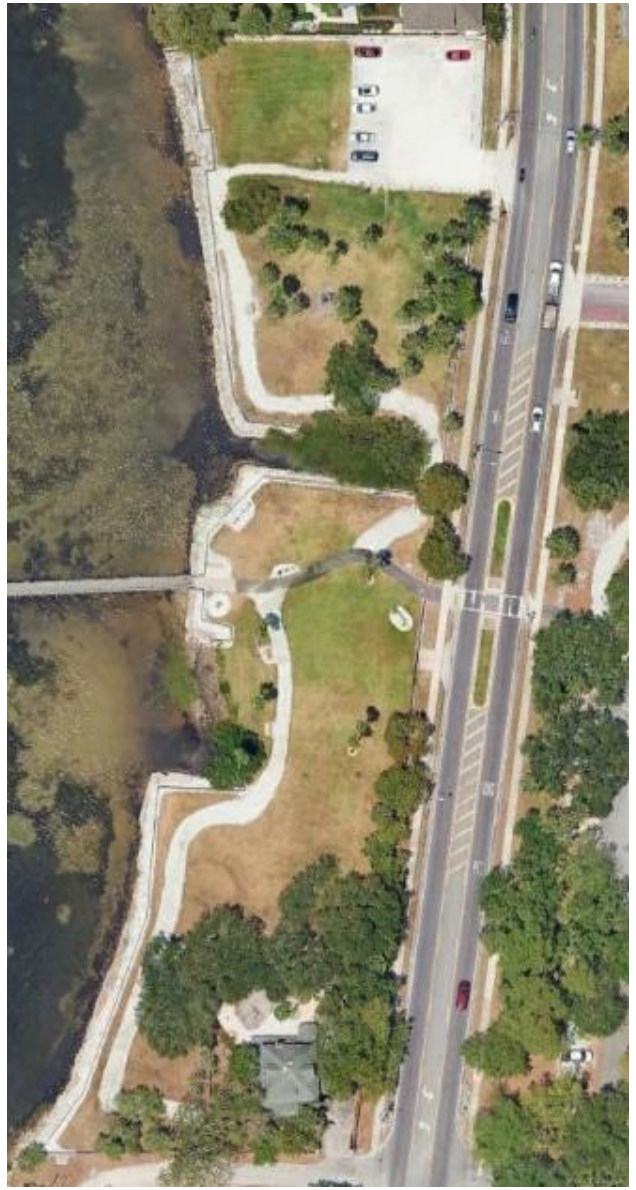
- **City of Dunedin**
  - Natalie Gass (Project Manager)
- **CPH Consulting, LLC.**
  - Kyle Bechtelheimer, P.E. (EOR)
  - Amanda Martin, E.I. (Project Engineer)

Green Turtle Hammock Nature Preserve | Islamorada, FL

Founders Park Breakwater | Islamorada, FL

Agenda

- **Introduction**
  - Investigation
  - What is a Living Shoreline?
  - Florida Gulf Coast Hope Spot
- **Josiah Cephas Weaver Park Shoreline Improvements Project**
  - Background and Purpose
  - Existing Conditions
  - Proposed Phasing Plan Approach
    - Phase 1
    - Phase 2
  - Schedule
  - Contact Information
- **Q&A on JCW Park Shoreline Improvements Project**



WEAVER PARK

cph

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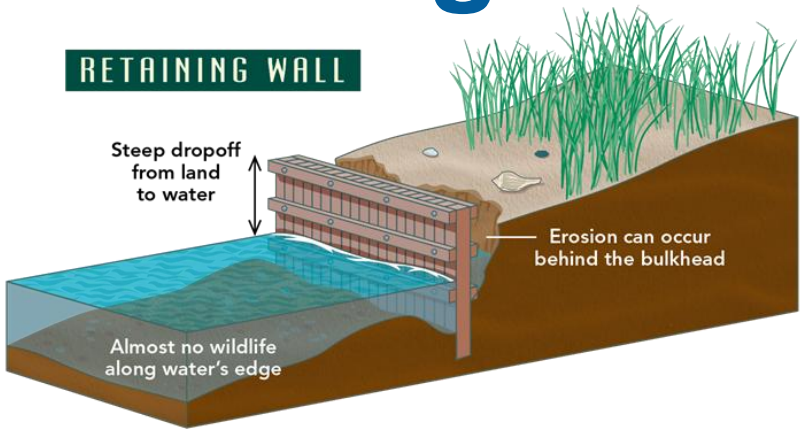
Weaver Park Living Shoreline Project

Shoreline Status

Site assessments clearly indicate the continuation and worsening unstable shoreline with erosion present throughout the park's property.



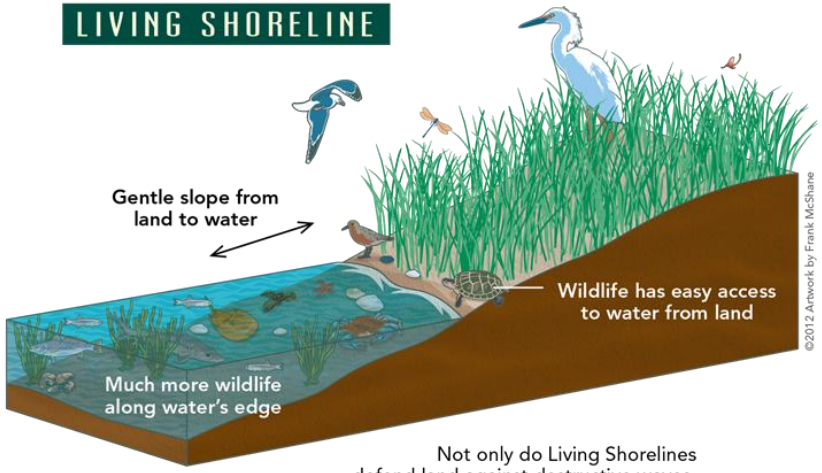

Investigation: Seawall vs Living Shoreline



'Hard' infrastructure like retaining walls abruptly severs the ecological connection between the coast and water.

Seawalls

- Hard, rigid, concrete, steel or wood structures that offer direct protection from erosion and flooding but can worsen erosion and habitat loss in adjacent areas
- Forms of "traditional" or gray infrastructure
- Strongest on installation day, weaken over time



Not only do Living Shorelines defend land against destructive waves, but they also provide crucial habitat for fish and wildlife.

Living shorelines

- Natural use of materials like plants, sand, and oysters, and sometimes combined with gray infrastructure, to provide erosion control, enhance habitats, increase resiliency, and improve water quality
- Forms of green infrastructure, nature-based solution
- Weakest on installation day, strengthen over time

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Living Shoreline
Partial Living Shoreline
No Living Shoreline

Investigation

Goal: determine methods of shoreline stabilization; seawall or living shoreline through means of surveys and designs.

Pinellas County Water and Navigation informed City that project is not eligible for a seawall, per Pinellas County Code Chapter 58, Article XV, Section 58-573(3), unless the seawall was to be:

- *Less than 100 feet in length*
- *Adjoined by two existing seawalls on each side*

Budget: $150,000
Actual: $0

Investigation consensus: seawall will not be permitted; funds can be used for living shoreline design.

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Project Funding

Details	Funding
FY25	$150,000
FY26	$100,000
TOTAL PROJECT BUDGET TO DATE	**$250,000**
CPH Design Fees	$150,000
Grant Application to be submitted to FDEP Coastal Partnership Initiative by October 31, 2025, for design services	*$30,000 (requesting)*
Exploration of funding through Resilient Florida and other grant options for implementation phase	*To be determined*

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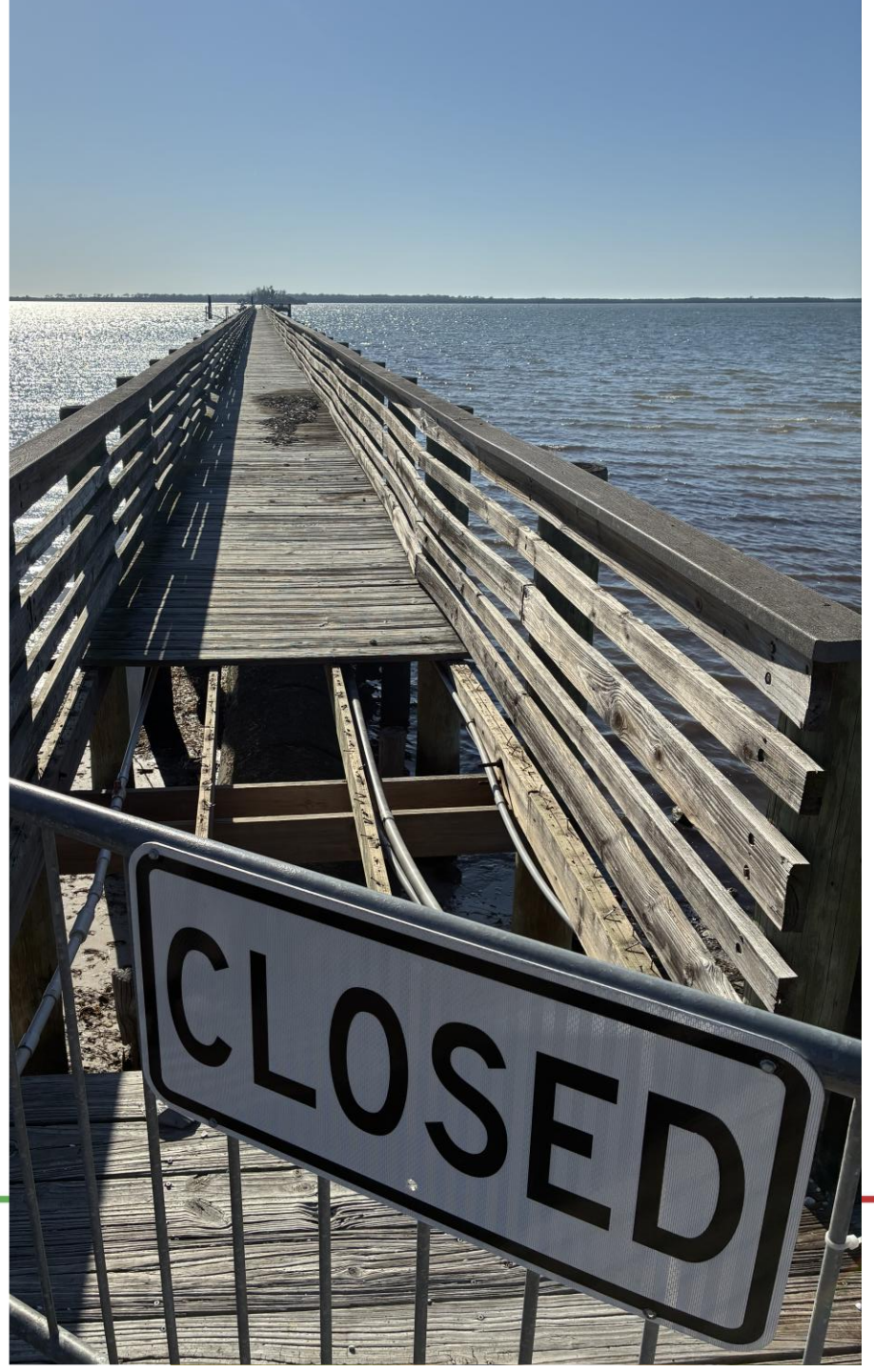
CPH Consulting, LLC

- One of the City's General Engineering Consultants (GECs)
- Discussed and reviewed by our City's Environmental Staff Meeting group including Public Works, Parks and Recreation, Engineering & Utilities, Strategy & Sustainability
- Proposal and Scope of Work:
  - **Task 1: Due Diligence (6 weeks)**
  - **Task 2: Conceptual Plan and Public Meeting (8 weeks)**
  - **Task 3: Design Development (60%) (12 weeks)**
  - **Task 4: Permitting Services (18 weeks)**
  - **Task 5: Construction Documents (100%) (8 weeks)**
  - **Task 6: Bid Phase Services (6 weeks)**

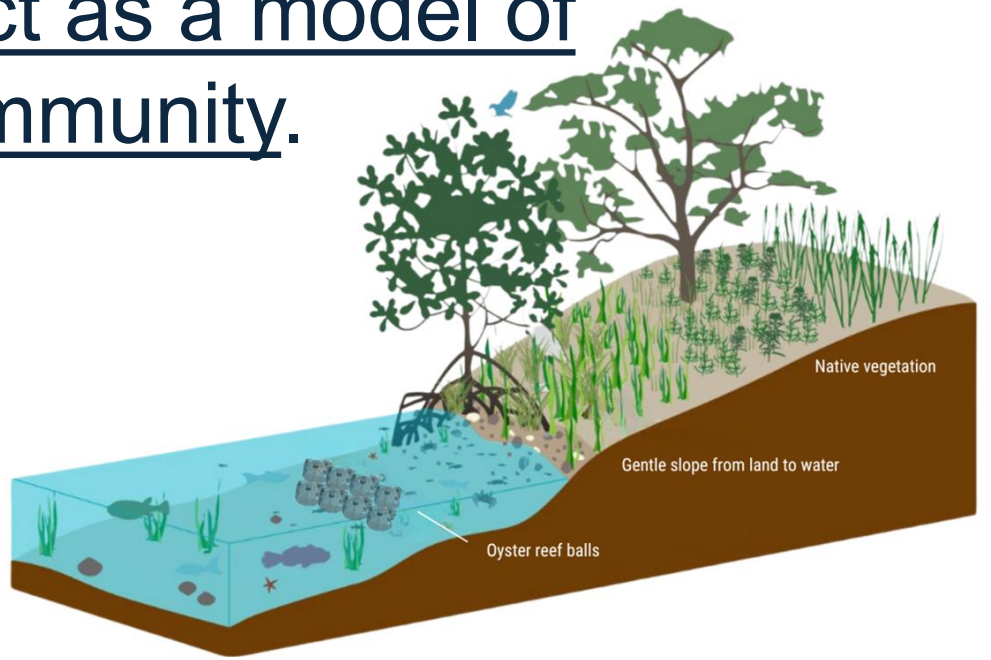
Pier

- Engineering assessment completed.
- Findings: *pier is not safe for use until significant remediation is performed.*
- Currently in process of navigating permitting requirements through all agencies (local, State, and Federal levels).
- Once firm timeline on permits is developed, repairs will be initiated through existing contracts if feasible or the work will go out to bid.



Living Shoreline Purpose

A living shoreline project at Weaver Park will help stabilize the shoreline, increase habitat, and act as a model of sustainability and resilience in our community.



Fits into larger initiatives:

- Vulnerability Assessment & Adaption Plan
- Florida Gulf Coast Hope Spot

Vulnerability Assessment & Adaption Plan

Purpose: to assess and mitigate future climate impacts on critical public assets.

Tool for tailored adaption strategies and policies aimed at mitigating risks and enhancing resilience.

Recommendation: living shorelines

Critical public infrastructure includes, roads, marinas, emergency facilities, stormwater, wastewater, etc.

FDEP grant award: $380,950

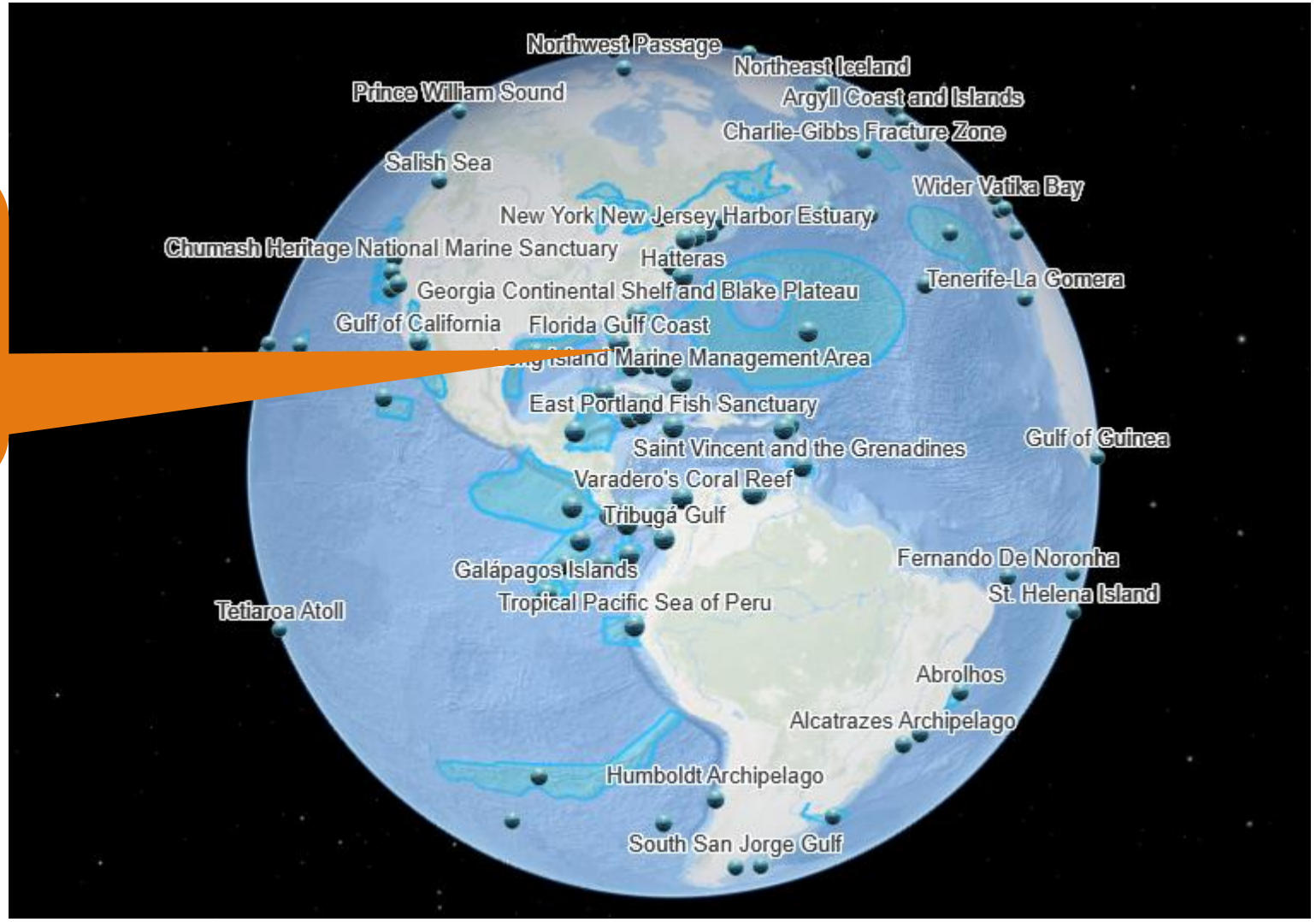
Photo by City of Dunedin. Flooding in various areas in the City

Florida Gulf Coast Hope Spot

Dunedin is the “Home City” of the Florida Gulf Coast Hope Spot part of Dr. Sylvia Earle’s Mission Blue international program, which is focused marine protection and making the connection between land and water.

Mission Blue Hope Spots®

Florida Gulf Coast Hope Spot is one of 165 global Mission Blue Hope Spots®



MISSION BLUE™

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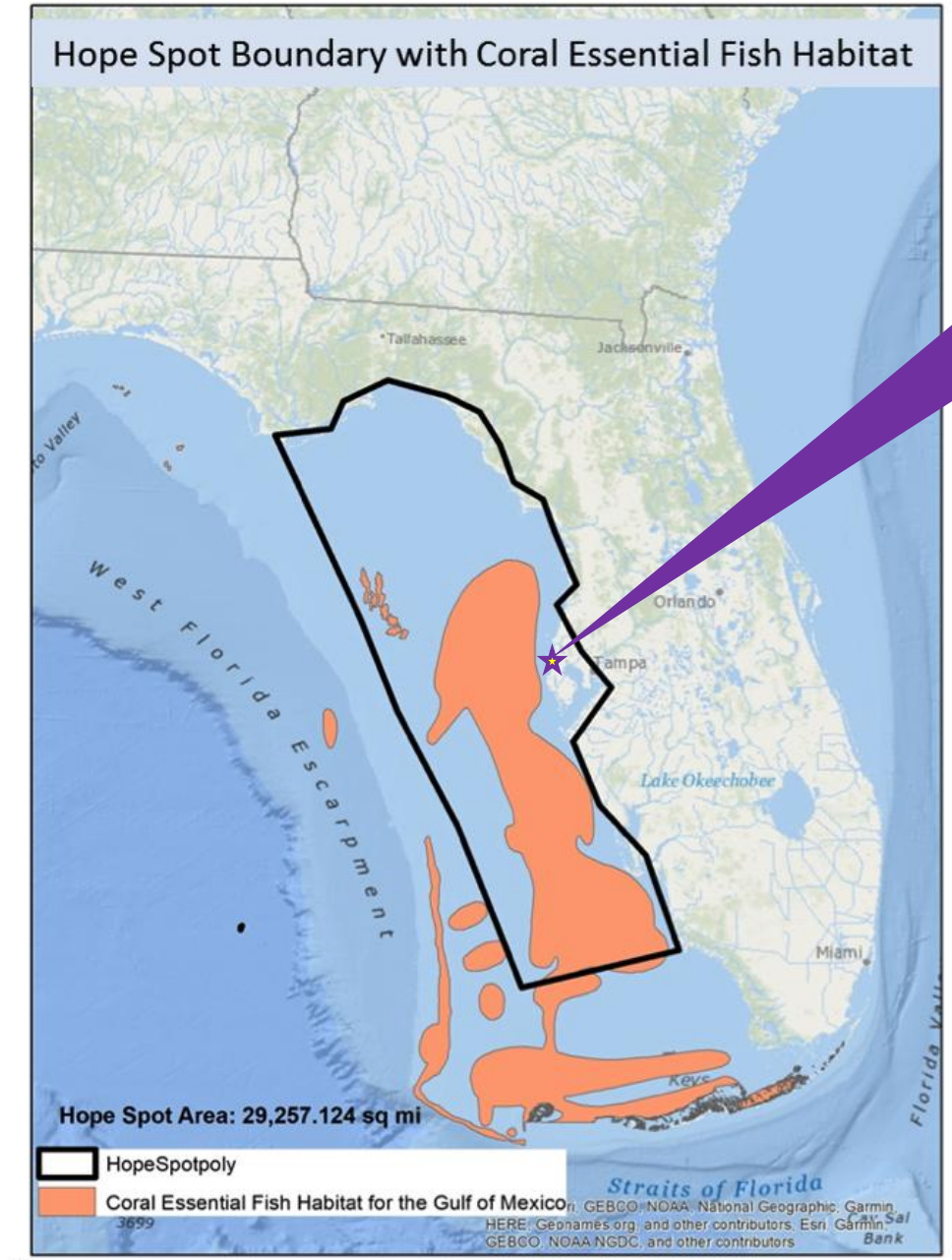


Dunedin is the 'Home City' of the Florida Gulf Coast Hope Spot

City of DUNEDIN Florida


Blue
Holes


Oyster
Habitats


Hard Rocky
Bottoms


Coral Essential
Fish Habitat


Kemp Ridley Sea Turtle


Scalloped Hammerhead


Goliath Grouper


Grey Sea Star


Rice's Whale
Credit: NOAA Fisheries/Ocean Alliance (Permit #21938)


Dr. Sylvia Earle
“No water, no life. No blue, no green.”


“Sylvia”

FL Gulf Coast Hope Spot Designation

Gulf Coast Fest

Celebrating our Florida Hope Spot

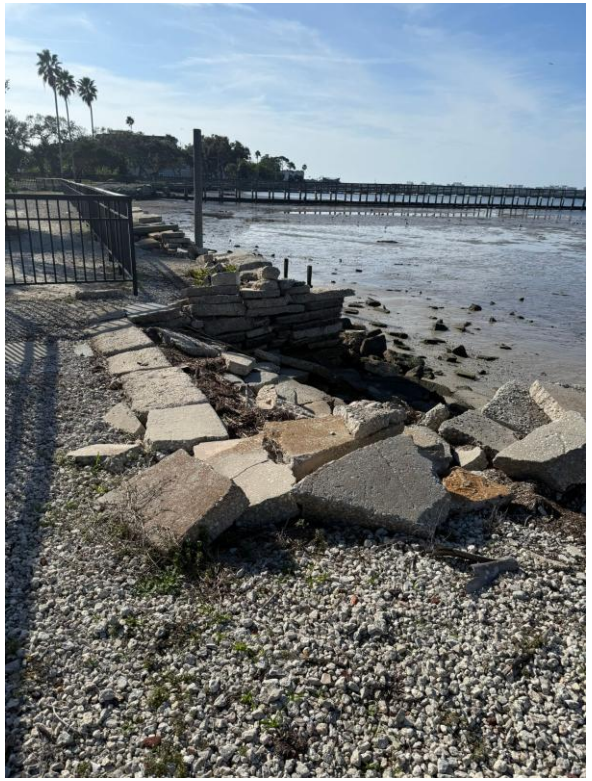
Weaver Park Living Shoreline Project

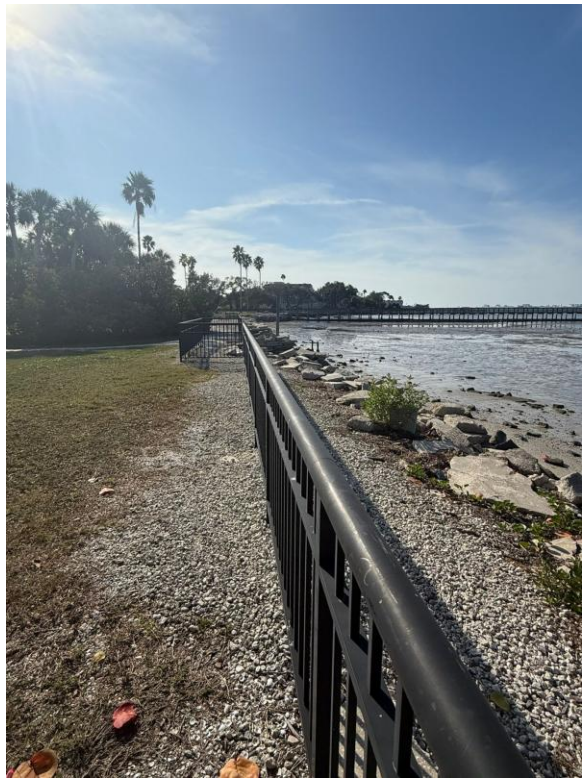
Background and Purpose

- 12-acre waterfront park in Dunedin, FL providing public shoreline access
- Existing features: fishing pier, rock seawall, picnic pavilions, trail access, playground, ADA amenities, & more
- Recent hurricane storm surge (6–9+ ft) combined with wave runup increases flooding, overtopping, & shoreline stress
- Accelerated erosion & toe scour are contributing to degradation of the existing seawall
- Project Purpose: Address erosion, wave action, and storm surge impacts by implementing a living shoreline

Existing Conditions

- Loss of material and void formation, allowing wave energy to erode the shoreline
- Localized washout areas from wave action and overtopping
- Displaced and undersized stone contributing to shoreline instability





Proposed Phasing Plan Approach

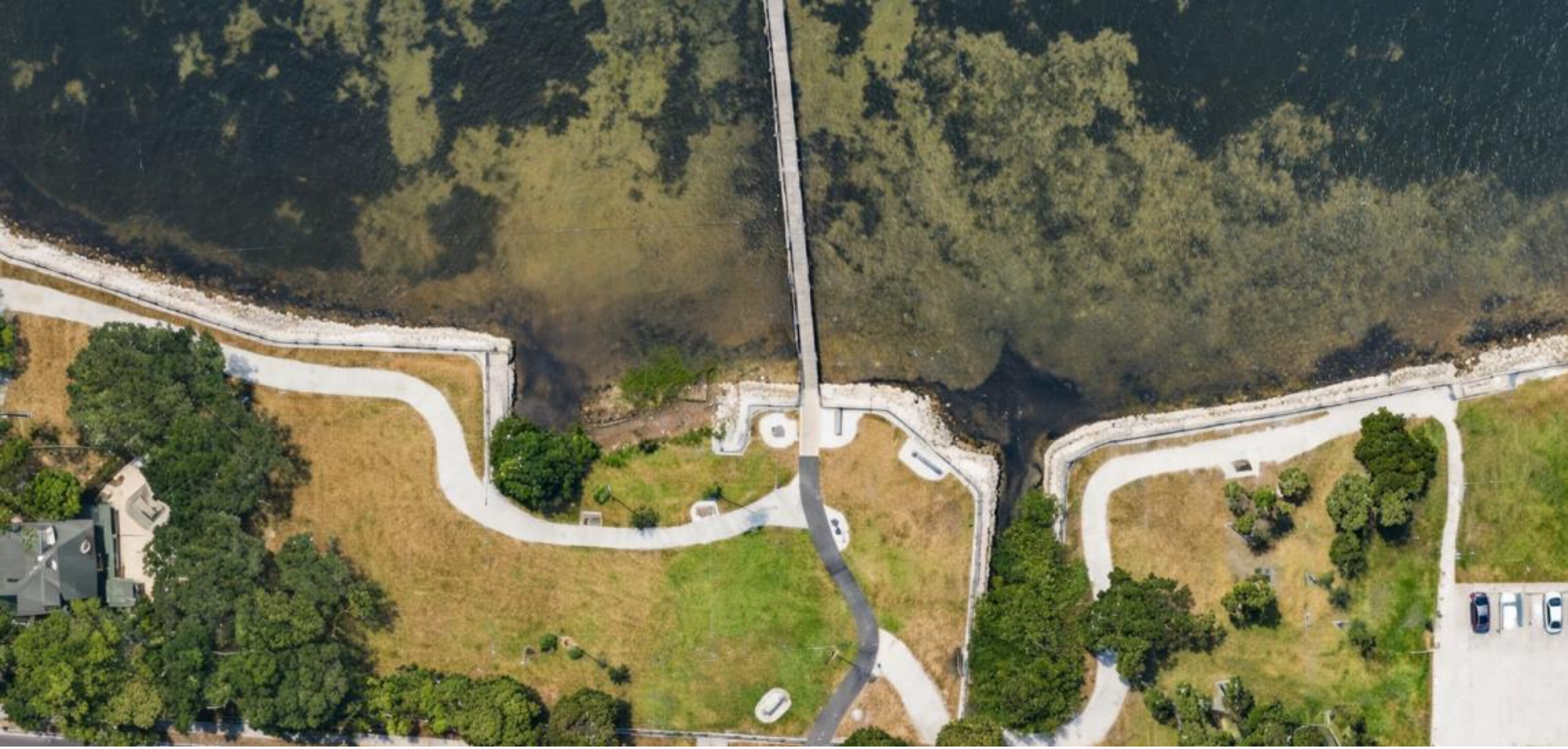
Phase 1
Living Shoreline Stabilization

- Prioritize this phase of this project to improve resistance to **wave action, erosion, and storm impacts**
- Evaluate re-using components of existing seawall to reduce construction costs
- Install continuous **riprap revetment (~11 ft waterward)** for long-term protection
- Opportunity for **planting strategies**:
  - Mangroves at revetment toe

    AND/OR
  - Upland native vegetation landward
- Enhances **habitat, aesthetics, and resilience** while maintaining public access

Phase 2
Resilience + Water Access Enhancements

- Install **oyster domes at intertidal zone** to create an additional wave buffer
- Integrate green infrastructure with more shoreline protection methods
- Increases resiliency and promote **natural habitat development**
- Improve public access and connectivity between upland areas and the water
- Add ADA compliant **floating kayak launch (north side)** to ensure safe access and support passive recreation



Existing Conditions

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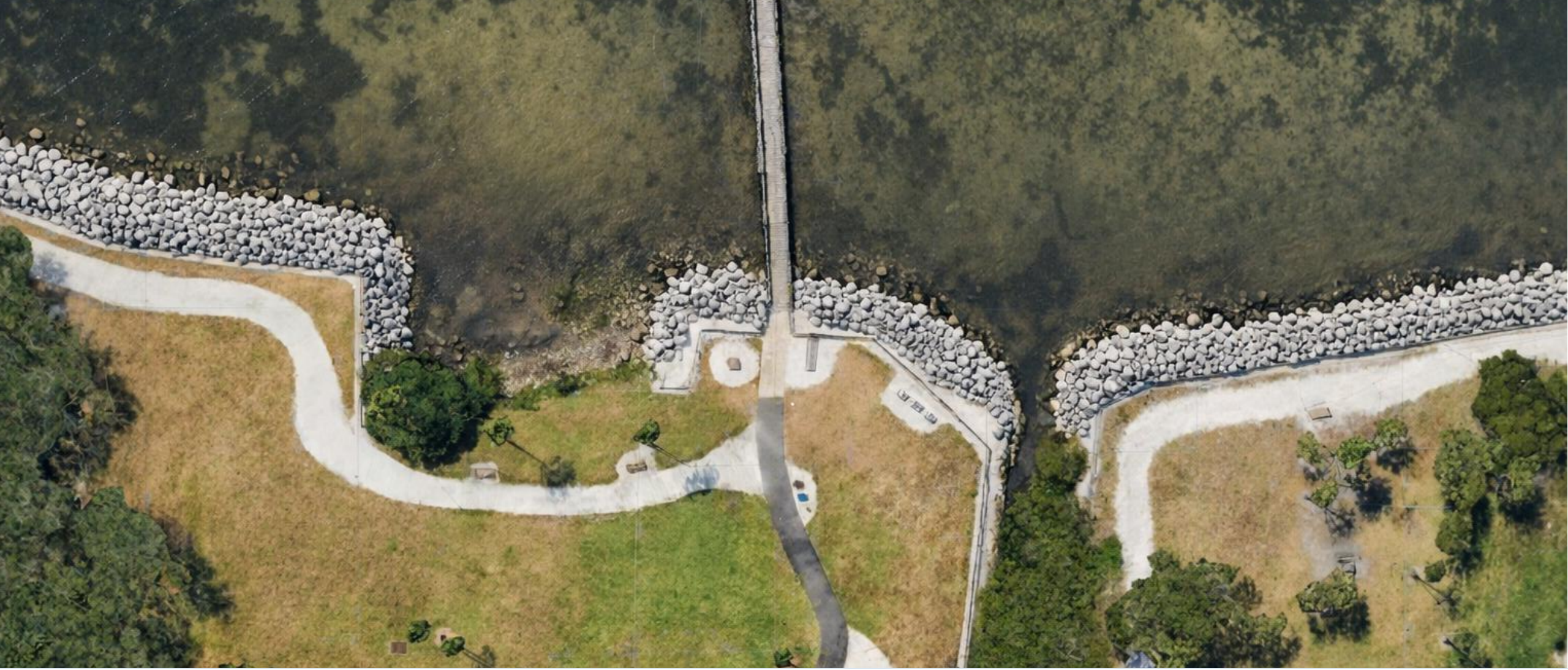
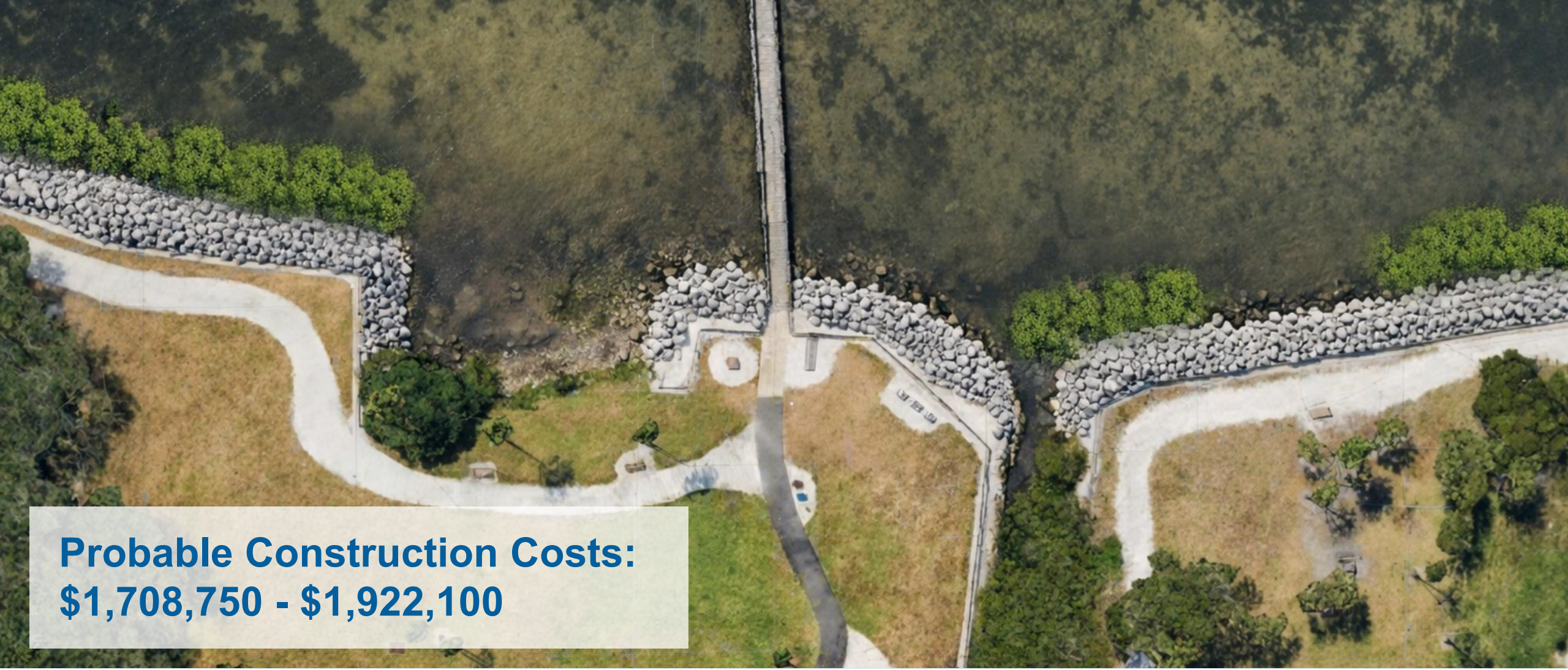


01 Phase 1: Riprap Revetment

Targeted riprap revetment is proposed along select shoreline segments to reduce erosion and improve resilience to wave action. The riprap extends approximately 11 feet into the water while maintaining existing park features, access points, and the pier.



Probable Construction Costs:
$1,708,750 - $1,922,100

01 Option 1: Mangrove Plantings

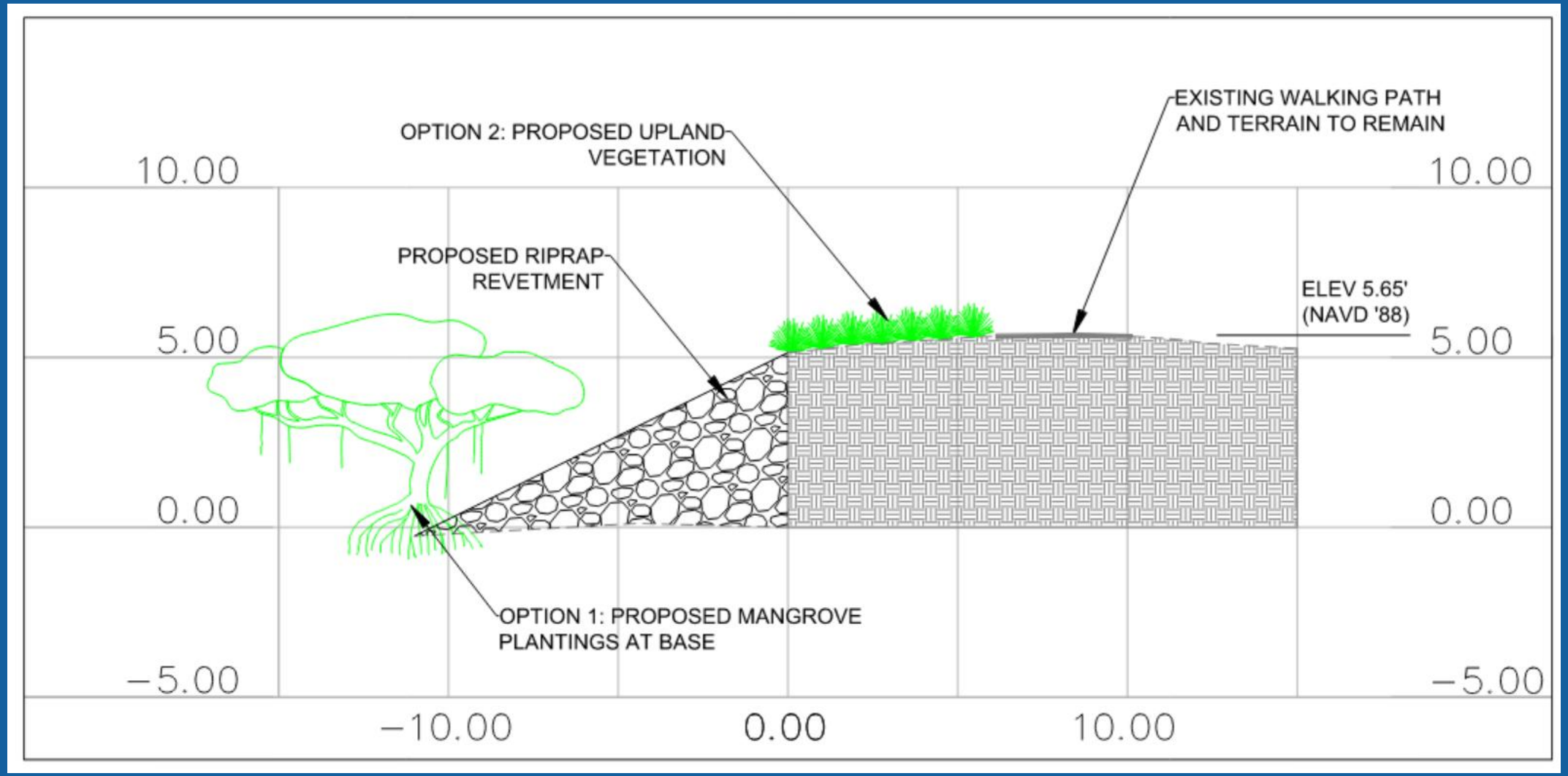
Mangroves would be installed at the base of the revetment to enhance shoreline protection, provide habitat, and improve resilience. Water vistas would be maintained within designated gathering and seating areas.

Probable Construction Costs:
$1,683,750 - $1,893,900

01

Option 2: Upland Plantings

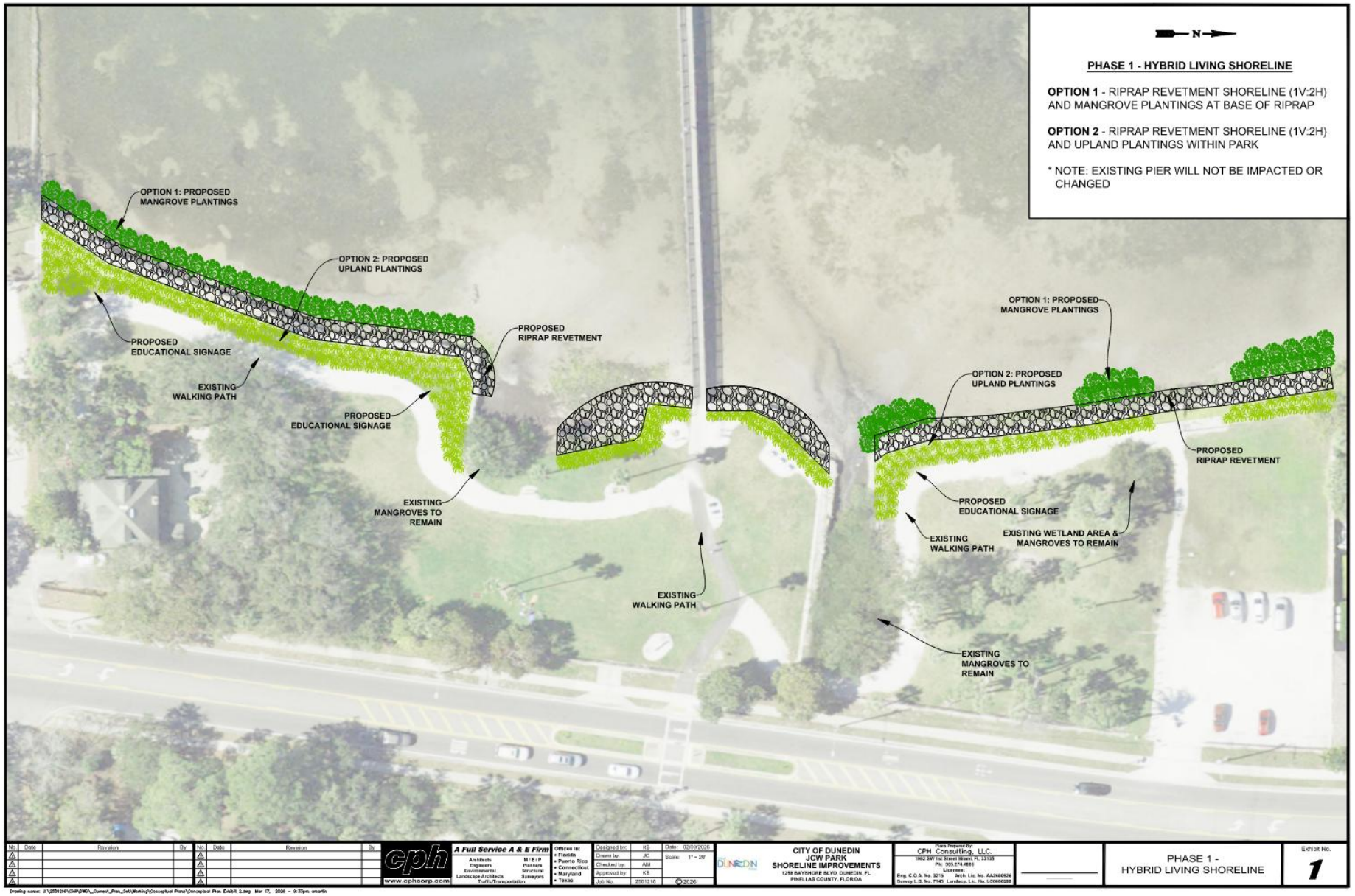
Upland areas landward of the seawall would be enhanced with low-profile, Florida-native vegetation to improve stability and habitat while maintaining usability of the trail. These plantings help reduce erosion and support long-term shoreline resilience.



01 Phase 1: Cross Section of Proposed Improvements

01 Phase 1: Educational Signage

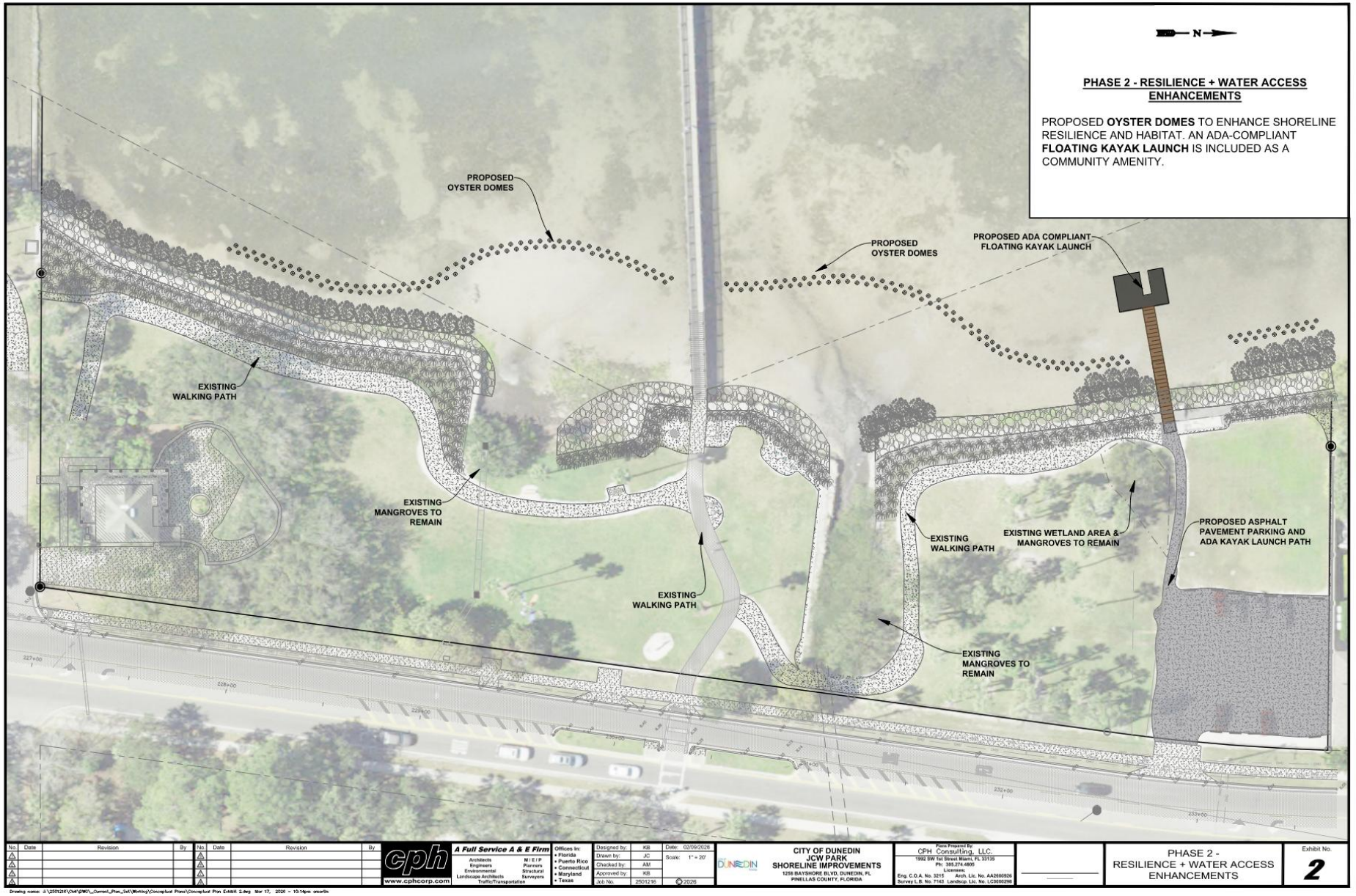
Proposed Phase 1 - Preliminary Design



02 Phase 2: Oyster Reef Domes and Kayak Launch

Proposed oyster reef domes provide critical habitat while acting as a secondary wave buffer to enhance shoreline resilience. The design also incorporates a water access amenity, improving connectivity to the shoreline and expanding recreational opportunities within the park.

Proposed Phase 2 - Preliminary Design



Probable Construction Costs:
$2,571,250

COST COMPARISON: SEAWALL

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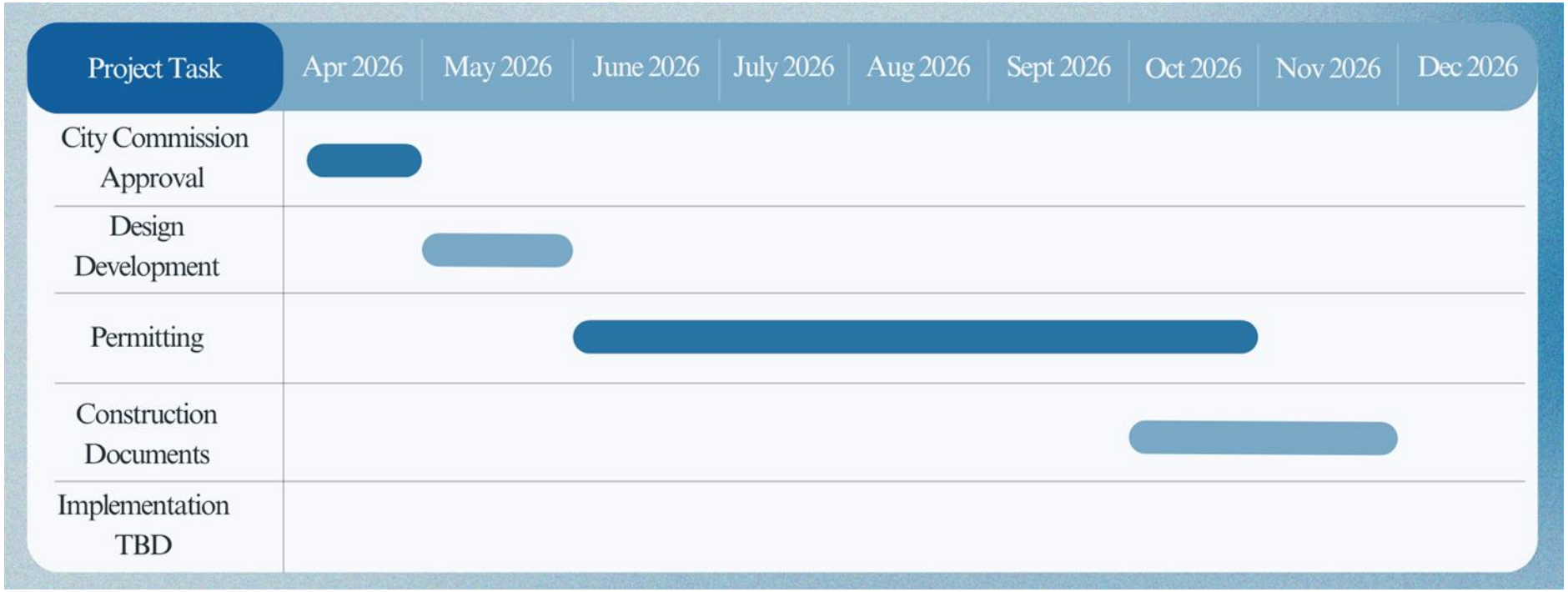
Schedule


Project Task
Apr 2026
May 2026
June 2026
July 2026
Aug 2026
Sept 2026
Oct 2026
Nov 2026
Dec 2026
City Commission Approval
Design Development
Permitting
Construction Documents
Implementation TBD

Next Steps

- City Commission Review and Approval
- Permitting
- Continued Grants Exploration
- Construction Documents
- Budgeting
- Construction & Implementation
    - Volunteer opportunities!

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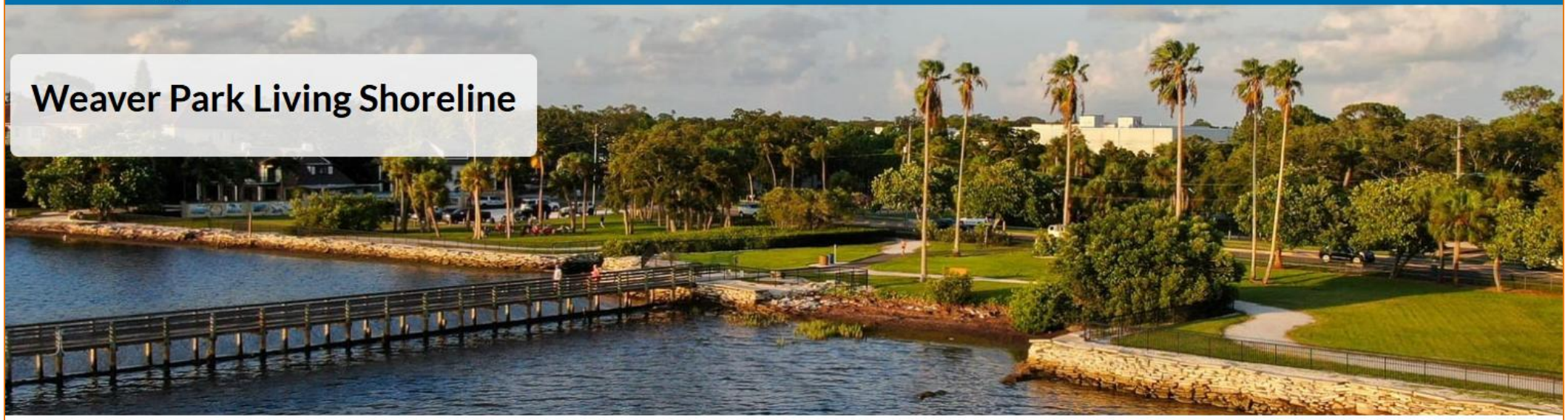
Sign up to volunteer!

DUNEDIN Florida

Weaver Park Living Shoreline



This project's goal is to achieve a stable shoreline that is more resilient and increases habitat. This is a benefit to the community as the project increases safety at Weaver Park along the shoreline, improves our natural ecology, provides education and engagement, and enhances the aesthetic beauty of the park. The purpose of developing a living shoreline at Weaver Park is to stabilize the shoreline for safety, increase habitat, and act as a model of sustainability and resiliency in our community and region. This fits into the City's Strategic Theme D for Environmental Resiliency and Sustainability.

Project Overview and Background

- Capital project to improve the shoreline at Josiah Cephas Weaver Park
- Per Pinellas County code, a seawall is not permitted for shoreline stabilization
- Nature-based solution of a living shoreline project is being explored for this shoreline

Key Project Elements

"The most compelling feature of a living shoreline is how it strengthens over time, which is opposite of a seawall - it's a testament of how nature-based solutions are sustainable and resilient; meeting our needs while improving the environment. It's nature doing what nature does best."

Natalie Gass
Project Manager

Stay in the Know

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GET IN TOUCH

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QUESTIONS?

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Join us in the lobby

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