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Webinar ID: 864 8836 2645



**CITY OF BEAUFORT**  
1911 BOUNDARY STREET  
BEAUFORT MUNICIPAL COMPLEX  
BEAUFORT, SOUTH CAROLINA 29902  
(843) 525-7070  
**CITY COUNCIL WORKSESSION AGENDA**  
**March 14, 2023**  
**STATEMENT OF MEDIA NOTIFICATION**

"In accordance with South Carolina Code of Laws, 1976, Section 30-4-80(d), as amended, all local media was duly notified of the time, date, place and agenda of this meeting."

**WORKSESSION - City Hall, Planning Conference Room, 1st Floor - 5:00 PM**

**Please note, this meeting will be broadcasted via zoom and live streamed on Facebook. You can view the meeting at the City's page; City Beaufort SC**

**I. CALL TO ORDER**

A. Stephen D. Murray III, Mayor

**II. EMPLOYEE NEW HIRE RECOGNITION**

A. Fire Department - William Crosby, Brandon Filicsky, and Zack Gardner

**III. PRESENTATION**

A. Military Installation Resilience Project

**IV. EXECUTIVE SESSION**

A. Pursuant to Title 30, Chapter 4, Section (70) (a) (2) of the South Carolina Code of Law: Receipt of Legal Advice - regarding pending contracts

B. Pursuant to Title 30, Chapter 4, Section (70) (a) (2) of the South Carolina Code of Law: Discussion regarding the purchase and sale of property

**V. ADJOURN**



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## CITY OF BEAUFORT

### DEPARTMENT REQUEST FOR CITY COUNCIL AGENDA ITEM

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**TO:** CITY COUNCIL **DATE:** 3/8/2023  
**FROM:** Scott Marshall, City Manager  
**AGENDA ITEM**  
**TITLE:** Military Installation Resilience Project  
**MEETING**  
**DATE:** 3/14/2023  
**DEPARTMENT:** City Managers Office

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***BACKGROUND INFORMATION:***

Stephanie Rossi, Planning Director with Lowcountry Council of Governments will be here to speak about the Military Installation Resilience Project.

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***PLACED ON AGENDA FOR:*** Discussion

***REMARKS:***

**ATTACHMENTS:**

Description	Type	Upload Date
Presentation	Backup Material	3/8/2023
Letter from LOCOG	Backup Material	3/8/2023



**SERPPAS Climate Resilience Summit**  
**January 31<sup>st</sup>, 2023**

**Lowcountry Military Installation Resilience Review**



# Why MIRR?



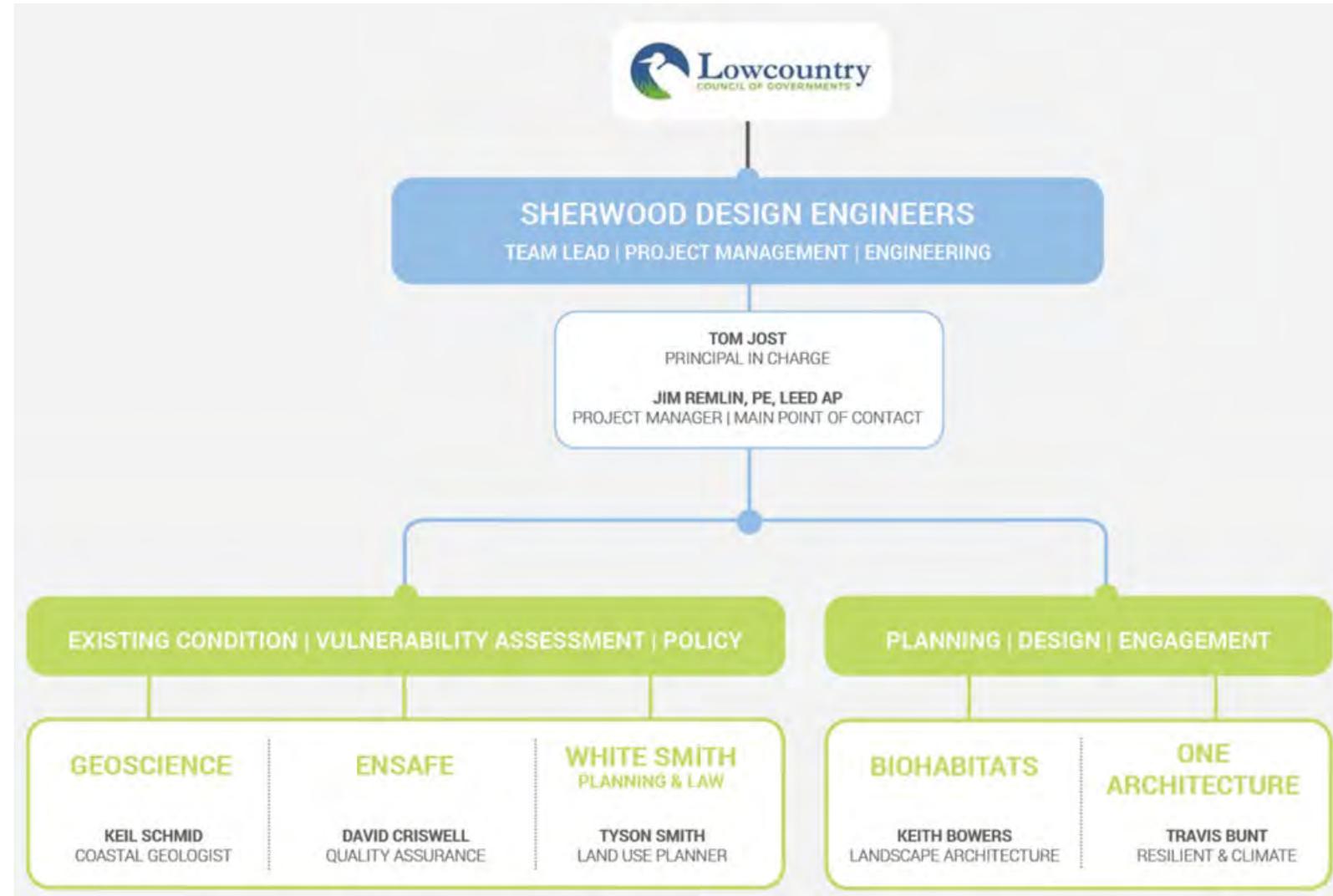
Military installation resilience is defined as the capability of a military installation to avoid, prepare for, minimize the effect of, adapt to, and recover from extreme weather events, or from anticipated or unanticipated changes in environmental conditions, that do, or have the potential to, adversely affect the military installation or essential transportation, logistical, or other necessary resources outside of the military installation that are necessary in order to maintain, improve, or rapidly reestablish installation mission assurance and mission-essential functions.

This **MIRR** is designed to help communities make informed decisions and to partner with local commands to respond to, address, and mitigate activities that are either impairing or likely to impair the use of the installation. When done successfully, it increases military value of the installation by preserving the military mission.



## Background

- Grant award in 2020 from Office of Local Defense Community Cooperation (OLDCC)
- Project Kicked off in March 2021
- Worked through a Technical Committee and Policy Committee
- Stakeholder engagements took place in July & November 2021



# What to Expect

## What the Lowcountry MIRR Covers

- Focus on infrastructure and vulnerabilities related to most LIKELY hazards causing the greatest disturbances.
- The MIRR highlights the benefits and cumulative impacts of multi-layered resilience planning.
- Solution Toolkit based on vulnerability and infrastructure types
- Structural and nonstructural recommendations

## What is Not Covered

- Not review of the installation itself.
- Does not comprehensively cover all possible hazards/threats/vulnerabilities but rather covers the most LIKELY scenarios.
- Does not go into project design and engineering



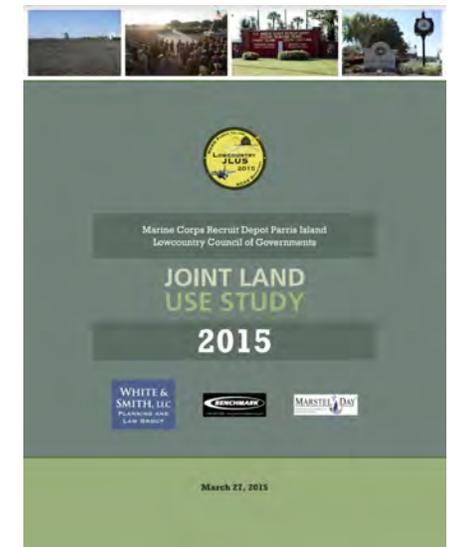
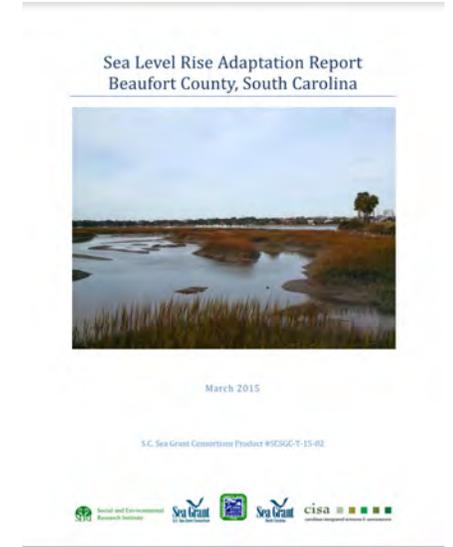
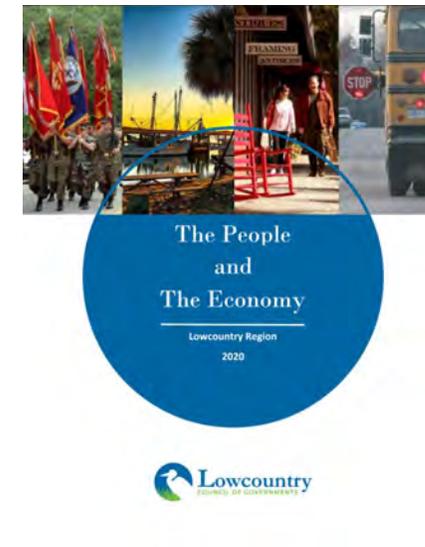
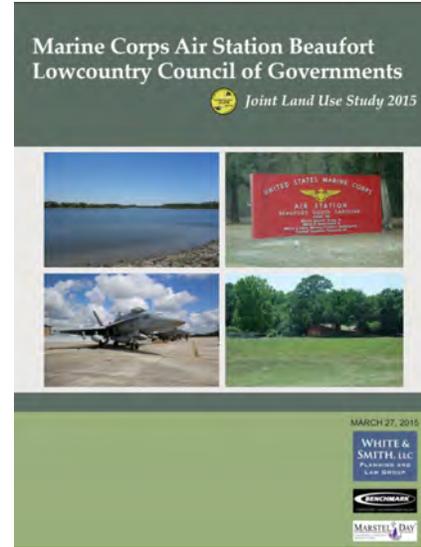


# Stakeholders

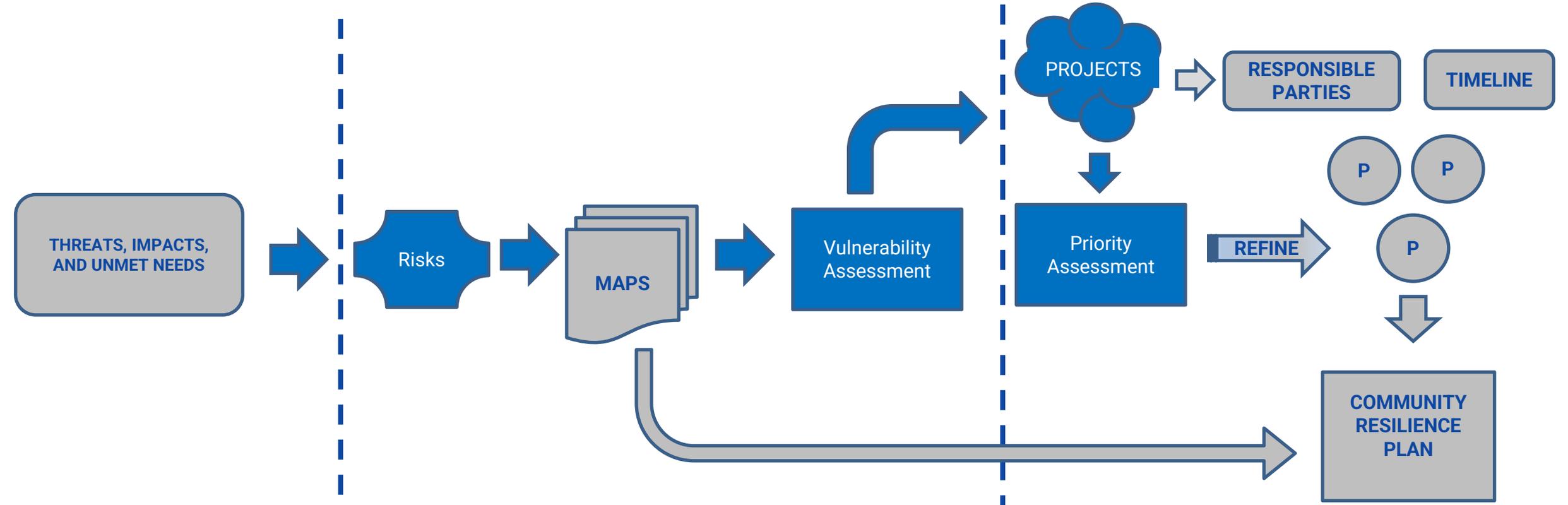
- Water Sewer Authority
- Community Foundations
- Land Trust
- Coastal Conservation league
- Human Services
- Local Hospital
- Regional Economic Development Alliance
- Local Government planners and engineers
- Local Elected Officials
- School Board
- SCDOT
- Regional Chamber
- County Transportation Commission
- Planning Commission
- Soil and Water Conservation District
- Local Farmers
- Gullah/Geechee Nation
- SCDNR
- Military Installations
- The Pew
- The Nature Conservancy

# Building off Previous Local Work

- Joint Land Use Study (JLUS) 2004 and 2015
- Sea Level Rise Task Force
- Sea Level Rise and Infrastructure Report
- Envision Beaufort County
- Green Print Plan
- 2020 Lowcountry Hazard Mitigation Plan
- People and the Economy



# Approach Framework



- 1 Identify & Define**
- Data Collection
  - Threat Analysis
    - Community Readiness
    - Emergency Response
    - Critical assets
    - Vital resources
    - Extreme Weather
    - Man-made hazards
  - Infrastructure needs

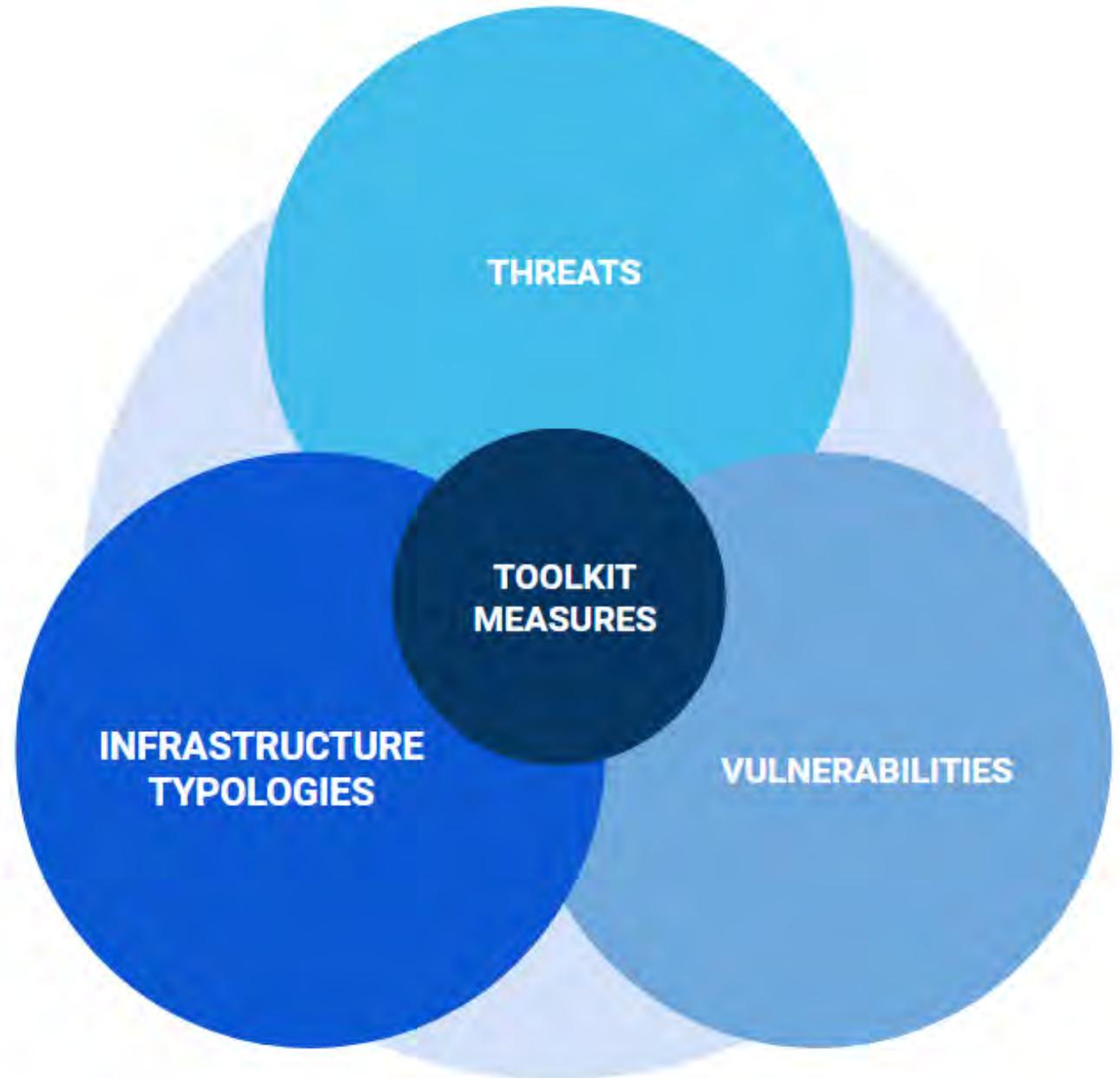
- 2 Assess Vulnerability & Risk**
- Current and Future Development Patterns
  - Prepare - Response - Recovery
    - Vulnerabilities to Hazards
  - Timescales of vulnerabilities and risk
    - Short Term (1-3 years)
    - Medium-Term (4-10 years)
    - Long-Term (11-20 years)

- 3 Refine + Prioritize**
- Projects and Policies
    - Opportunity costs
    - Responsible parties
    - Timelines
  - Estimated costs
    - appropriate financing mechanisms
    - Monitoring plan
    - Organizational structure



# Vulnerability Analysis

- **Classify key infrastructure** in the area, including natural, physical, economic, and social infrastructure
- **Model the prioritized threats** projected to affect the area, considering probabilities of negative impact based on frequency, intensity, and spatial extents
- Conduct **assessment of probable consequences** of these threats using a combination of literature review, analysis of available data, and personal interviews with stakeholders
- Based on the established effects, analyze and **highlight points of vulnerability in each infrastructure group**



# Focus of Vulnerability Analysis

## Hazard

- Hurricanes
- Tidal inundation
- Coastal Flood inundation
- Coastal Geomorphology
- Sea Level Rise
- Rain Bomb

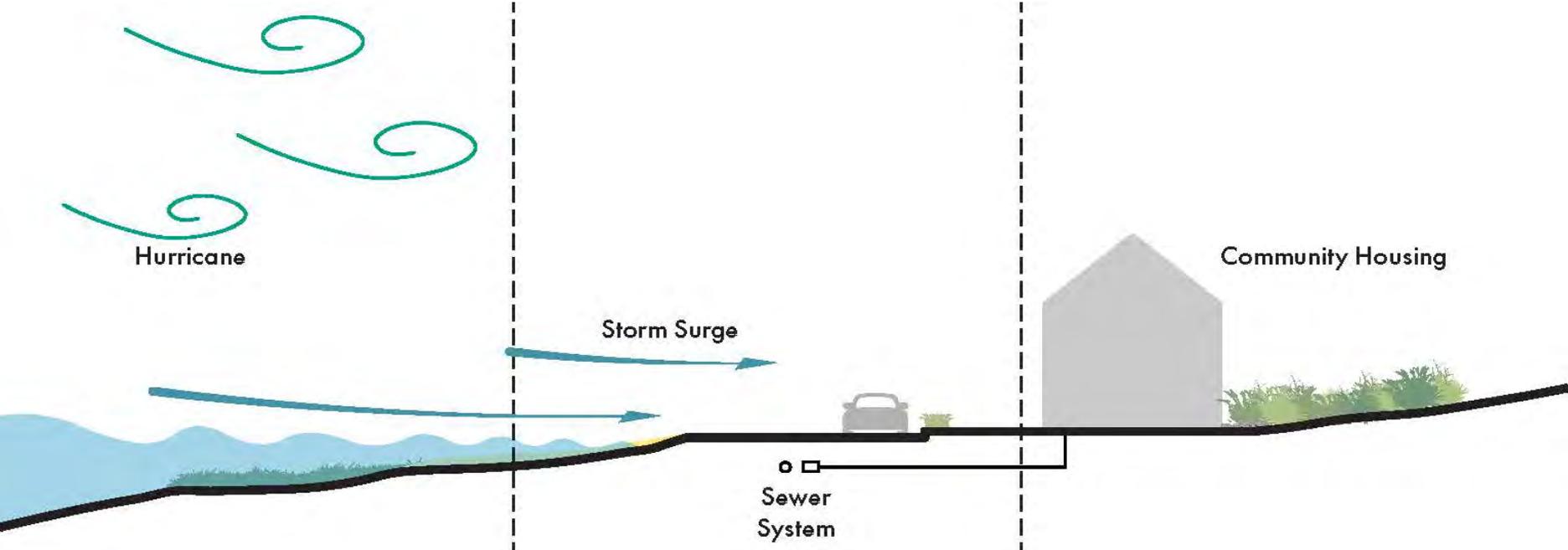
## Threats

- Climate Threats:
- Shallow Coastal Flooding
  - Storm Surge
  - Pluvial Flooding
  - Compound Flooding
- Environment Threats:
- Coastal Erosion
- Community Threats:
- Water & Sewer Systems

## Infrastructure Type

- Natural: Geology and ecology
- Physical: Utilities and transportation
- Economic: Military, industry, development
- Social: Livability, culture

## Toolkit & Recommendations



# Tool Kits

- Organized by Typologies
- Applied by land use type (transect from local comprehensive Plan)
- Applied to pilot locations



# Tool Kits

Includes Structural and Non-Structural solutions

- Shoreline stabilization
- Shoreline establishment
- Protected Transportation Measures
- Adapted Utility infrastructure
- Resilient Military Operations
- Preserved Industry
- Intelligent Development
- Adapted Livability
- Preserved Culture

## Physical Infrastructure

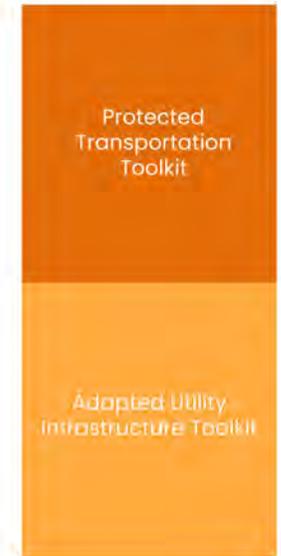
### Typology



### Vulnerabilities



### Management Toolkit



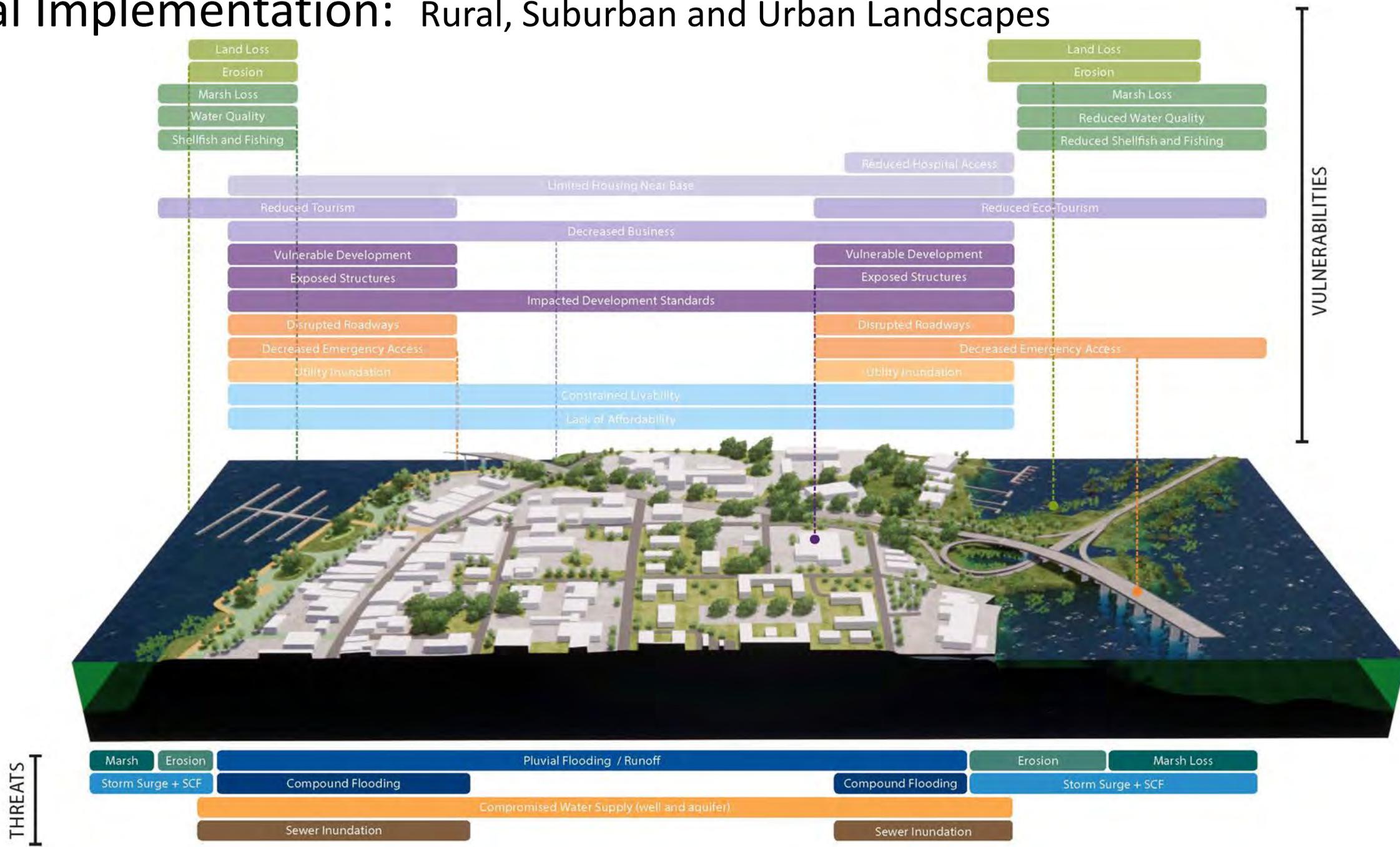
**Protected Transportation Measures: Guidelines and measures associated with roadway networks to preserve safe ingress/egress and evacuation routes between the military bases and the surrounding communities during times of disturbance.**

#### SHORT TERM



#### LONG TERM

# Regional Implementation: Rural, Suburban and Urban Landscapes



# Regional Implementation: Rural, Suburban and Urban Landscapes



Elevate Buildings Above DFE



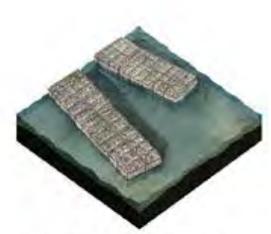
Wetproof Buildings to DFE



Improved Block Building



Stormwater Conveyance Improvements



Oyster Reef Facilitation



Floodwall / Revetments



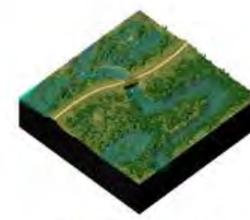
Green Infrastructure



Increase Tree Cover



Elevated Causeways



Tidal Flow Control



Breakwaters



# Prioritized Projects

## RESILIENCE THREATS

<b>CLIMATE THREATS</b>	 Flooding	Coastal Flooding <input type="checkbox"/>
		Pluvial Flooding <input type="checkbox"/>
		Storm Surge <input type="checkbox"/>
		Compound Flooding <input type="checkbox"/>
<b>ENVIRONMENTAL THREATS</b>	 Coastal Erosion	Marsh Loss <input type="checkbox"/>
		Coastal Erosion <input type="checkbox"/>
<b>COMMUNITY THREATS</b>	 Water & Sewer	Pollutants <input type="checkbox"/>
		Water Supply <input type="checkbox"/>
		Sewer Capacity <input type="checkbox"/>
		Saltwater Intrusion <input type="checkbox"/>

TOTAL

+

## TYPOLGY ASSET VULNERABILITY

<b>NATURAL INFRASTRUCTURE</b>	 Geology	Land Loss <input type="checkbox"/>
		Topography <input type="checkbox"/>
	 Ecology	Marsh Loss <input type="checkbox"/>
		Water Quality <input type="checkbox"/>
Shellfish and Fishing <input type="checkbox"/>		

<b>ECONOMIC INFRASTRUCTURE</b>	 Military	Housing <input type="checkbox"/>
		Utilities <input type="checkbox"/>
		Hospitals <input type="checkbox"/>
 Industry	Tourism <input type="checkbox"/>	
	Commercial <input type="checkbox"/>	
	Agriculture <input type="checkbox"/>	
	Fishing <input type="checkbox"/>	
 Development	Historic Districts <input type="checkbox"/>	
	Cultural Protection Overlay <input type="checkbox"/>	
	Planned Unit Development <input type="checkbox"/>	

<b>PHYSICAL INFRASTRUCTURE</b>	 Transportation	Day-to-day Access <input type="checkbox"/>
		Emergency Access <input type="checkbox"/>
	 Utilities	Sewer <input type="checkbox"/>
		Water <input type="checkbox"/>
Electrical <input type="checkbox"/>		

<b>COMMUNITY INFRASTRUCTURE</b>	 Livability	Affordable Housing <input type="checkbox"/>
		Economic Opportunity <input type="checkbox"/>
		Social Vulnerability <input type="checkbox"/>
 Culture	Historic Preservation <input type="checkbox"/>	
	Rural and Critical Lands <input type="checkbox"/>	
	Community Spaces <input type="checkbox"/>	

TOTAL

+

## AMPLIFYING FACTORS

 MILITARY RELEVANCE	Military Personnel Residences <input type="checkbox"/>
	Access to Base <input type="checkbox"/>
	Evacuation Routes <input type="checkbox"/>
	Base Utilities (Water & Sewers) <input type="checkbox"/>

TOTAL

+

 SENSITIVITY TIMELINE	1-3 Short Term <input type="checkbox"/>
	4-10 Medium Term <input type="checkbox"/>
	11-20 Long Term <input type="checkbox"/>

TOTAL

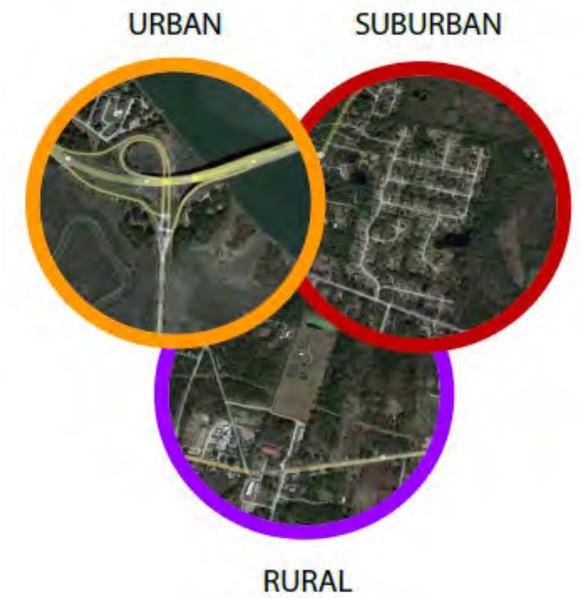
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TOTAL SCORE

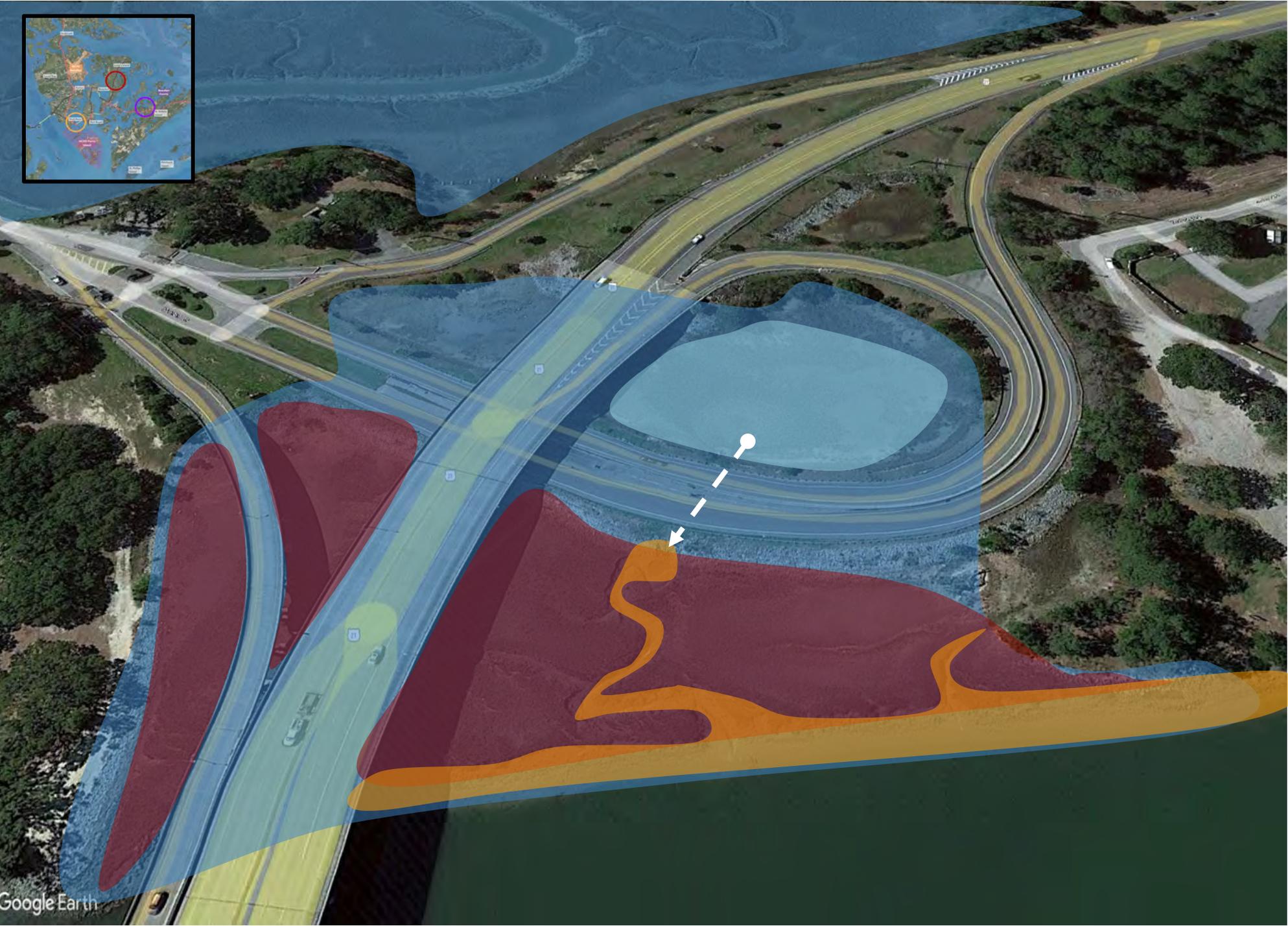
# Prioritized Projects

Using the prioritization process three pilot projects were identified aligned with land use typologies of rural, suburban, urban.

For each location, the vulnerabilities are identified along with recommendations, potential funding and partnerships.



Land Use	Pilot Project	Military Asset or Service of Pilot Project	Community Asset or Service of Pilot Project	Threats Affecting Area						
				Coastal Flooding	Pluvial Flooding	Storm Surge	Compound Flooding	Marsh Loss	Coastal Erosion	Water & Sewer
Rural	St. Helena's Island Wastewater Treatment Plant (WWTP)	Evacuation Route and access to MCRD Parris Island	Evacuation Route	●	●	●	●			●
Suburban	Star Magnolia Subdivision on Lady's Island	Military Housing	Sewer Lift Station	●	●	●	●		●	●
Urban	US 21 Interchange at Shell Point	Potable Water Withdrawals	Wastewater Treatment and Non-Potable Irrigation	●	●	●	●	●	●	



# Pilot Project 1

Urban Typology:  
Shellpoint US 21 Interchange

- Stabilize Shoreline
- Mitigate Tidal Impacts
- Improve Stormwater Storage
- Improve Emergency and Day to day access

**Legend**

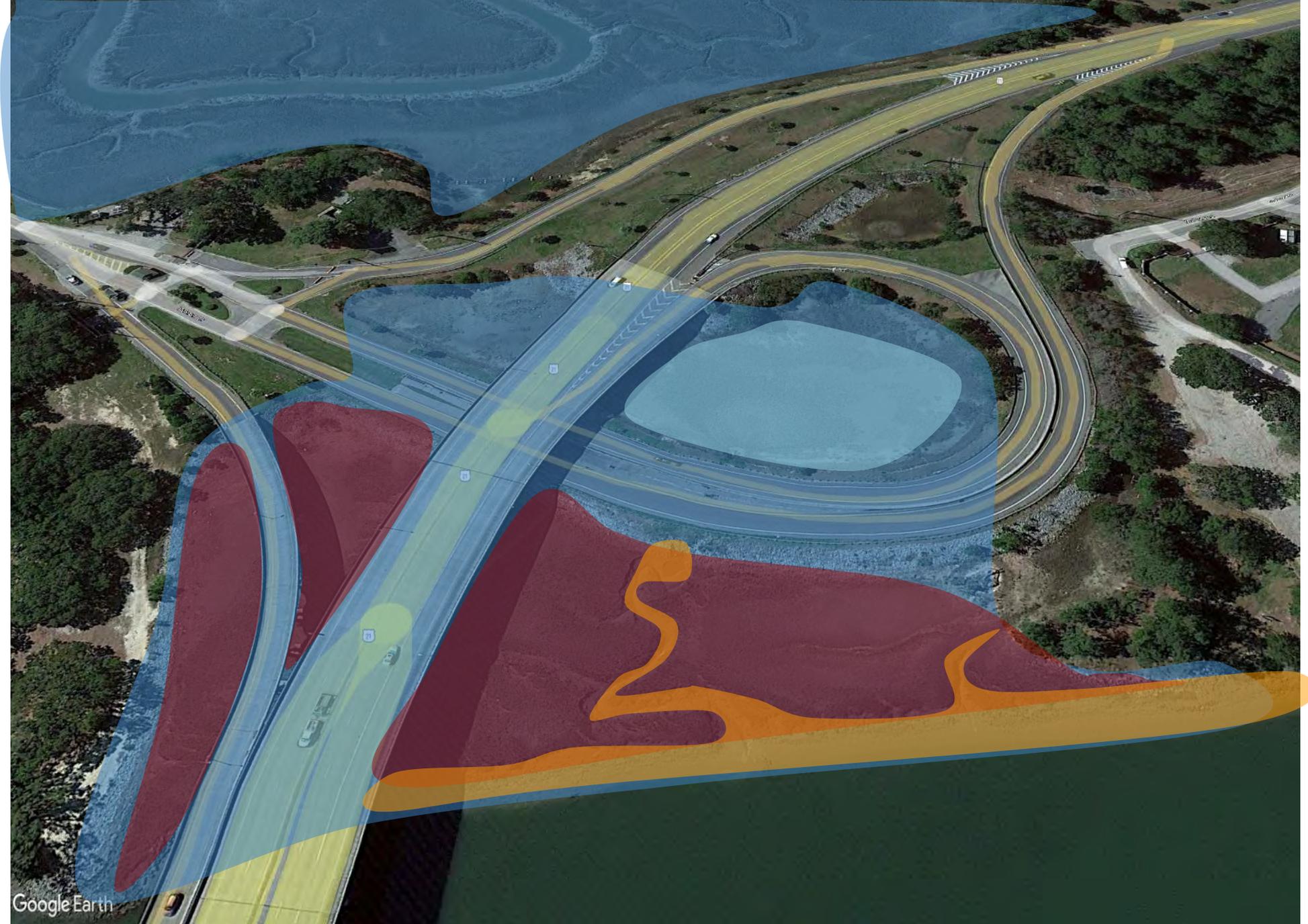
	Coastal Erosion
	Marsh Loss
	Compound Coastal Flood
	Pluvial Flood
	Stormwater Piping



# Objectives

## Typology: Eroding Marsh Adjacent to Low Lying Infrastructure with Stormwater Inputs

- **Shoreline Stabilization:** Mitigate eroding edge of marsh and promote natural resilience of marsh to risks associated with tides, storms, and sea level rise.
- **Flood Management:** Reduce impacts of pluvial flooding by capturing and storing stormwater. Balance stormwater storage with tidal fluxes and future scenarios of sea level rise.
- **Water Quality:** Address water quality issues by 1) treating stormwater runoff before it mixes with tidal waters and 2) improving this ecosystem service of the estuarine system.
- **Habitat Restoration:** Preserve, enhance, and restore coastal habitat that will be resilient to future stressors associated with storms and sea level rise.



# Options for Implementation by Objectives Including Design, Construction, and Contingency Costs

Total Estimated Costs for All Practices:  
Installation: ~\$7.8 million  
Annual Maintenance: ~\$148k

## Shoreline Stabilization:

- Stabilize shoreline with vegetation and coir logs
  - ~\$818k installation, \$40k annual maintenance
- Restore marsh and add coastal breakwater to absorb wave energy
  - ~\$1.9 million installation, \$10-30k annual maintenance

## Flood Management:

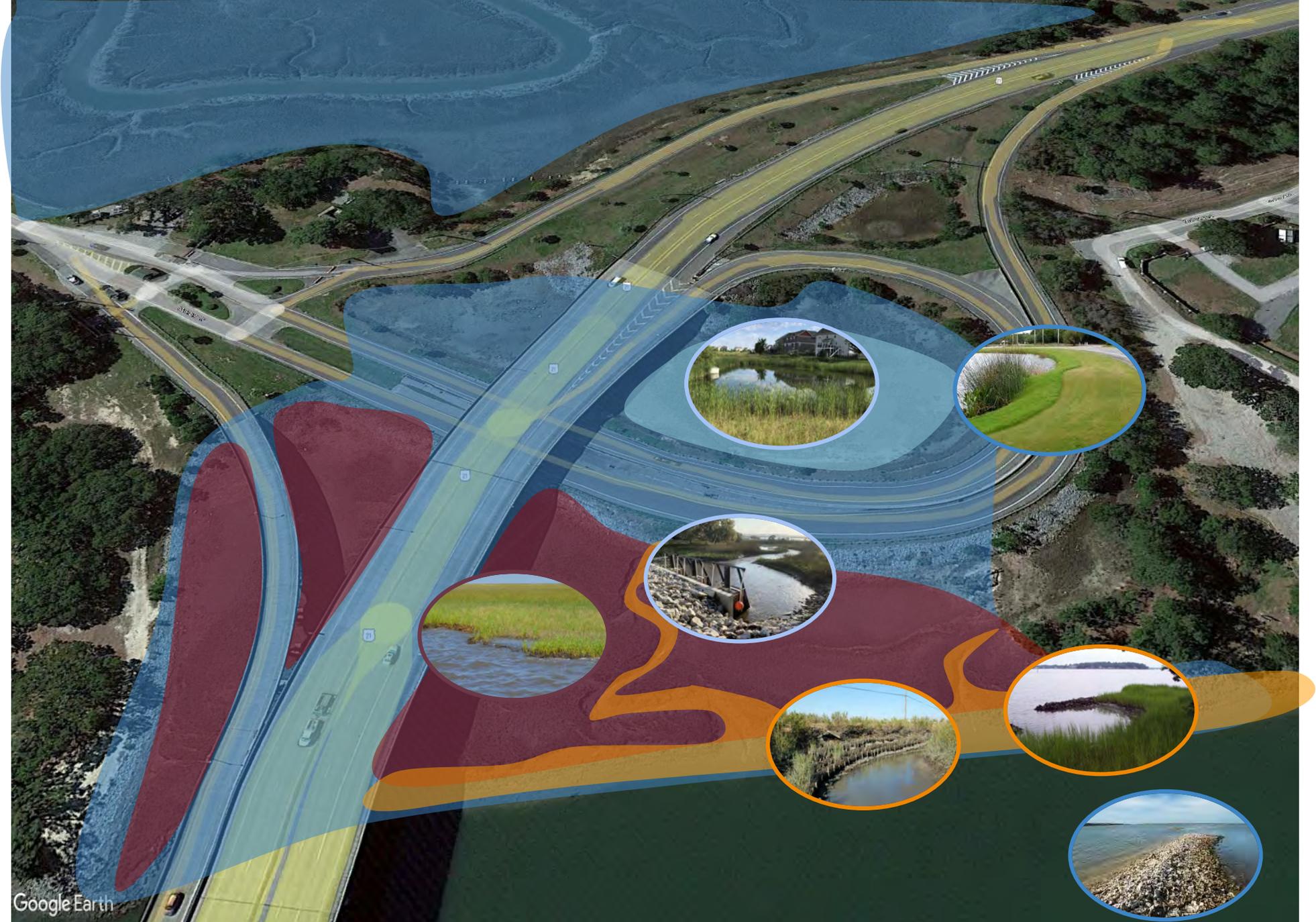
- Restore inland marsh as stormwater marsh to temporarily store pluvial flooding stormwater
  - ~\$165k installation, \$8k annual maintenance
- Install tidal flap gate to connect stormwater marsh to river
  - ~\$3.55 million installation, \$60k annual maintenance
- Design modeling to size stormwater marsh and tidal gate
  - ~\$375k installation, no maintenance

## Water Quality:

- Implement vegetated filter strip surrounding inland marsh to trap runoff pollutants from entering marsh
  - ~\$160k installation, \$8k annual maintenance
- Restore oyster reefs to filter tidal water
  - ~\$380k installation, no maintenance

## Habitat Restoration:

- Restore salt marsh in tidal areas on both sides of river to restore coastal ecosystems
  - ~\$460k installation, no maintenance



Estimated costs based off unit cost estimates given by [NOAA Nature Based Solutions Cost Guidance](#) and [Tidal Flap Gate Structure Cost Estimates from NJ Dept. of Environmental Protection](#), and spatial extents of recommendations at interchange. Contingencies assumed for construction, design, and contractor/owner overhead



# Questions/Contact

Stephanie Rossi  
Planning Director  
Lowcountry Council of Governments

[srossi@lowcountrycog.org](mailto:srossi@lowcountrycog.org)

843-473-3958

Final Report Available

[www.lowcountrycog.org](http://www.lowcountrycog.org)



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February 13, 2023

Mr. Scott Marshall  
City Manager  
City of Beaufort  
1911 Boundary Street  
Beaufort, SC 29902

RE: Military Installation Resilience Project Local Match

Dear Mr. Marshall:

The Lowcountry Council of Governments has been invited to apply for a noncompetitive grant from the Department of Defense as a continuation of the Military Installation Resilience Review (MIRR) completed last year.

The primary goal of the MIRR was to determine what improvements to the area's infrastructure are needed and how to implement those recommendations to ensure that MCAS Beaufort and MCRD Parris Island can continue their operations successfully. Although it may not be possible to contain natural disasters and long-term conditions such as sea level rise, it is possible to plan and make changes in physical structures and in procedures to safely accommodate and prevent damage, and even potential loss of mission, which could ultimately result in closure.

The new grant is an opportunity to begin the implementation of one of the high priority projects identified in the Lowcountry MIRR. The project will focus on the scoping and design of the environmental improvements at the interchange of US 21 at Parris Island Gateway/Ribaut Road and Malecon Drive hereby referred to as the *Shell Point Interchange*. The Shell Point Interchange serves nearby neighborhoods and is the only land entrance to Parris Island. The interchange also serves as a major US highway, designated critical evacuation, and access route for both the installation and the Beaufort County communities north of the Broad River.

This project will be coordinated with ongoing efforts such as the Shell Point drainage project as well as other natural shoreline projects that are adjacent to the project location. The scoping and design will include improvements for shoreline stabilization, flood management, water quality and habitat restoration. Completing the scoping and the design will make this a shovel ready project eligible for additional funding.

**Lowcountry Council of Governments**

PO Box 98 | 634 Campground Road  
Yemassee, South Carolina 29945  
Main: 843.473.3990 Aging: 843.473.3991 Fax: 843.726.5165  
[www.lowcountrycog.org](http://www.lowcountrycog.org)



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The total cost of this project will be \$429,082 of which the Defense Department's Office of Local Defense Community Cooperation (OLDCC) will provide 90 percent. A local match of 10 percent, or \$42,909 is required. We are asking Beaufort County to contribute 50 percent of the local match and the City and Town each 25 percent, the amounts would be \$21,455 and \$10,727 respectively. Because the project is budgeted for 18 months (March 2023 - August 2024), these amounts can be spread over two fiscal years.

You will also be providing active guidance to the project as members of the Steering and Technical Committees.

Thank you for your consideration of this request. We look forward to working with you on this timely and necessary project. If you have any questions, or to provide a response please contact Stephanie Rossi, Planning Director at 843-473-3958 or me at 843-473-3974.

Sincerely,

Sabrena P. Graham  
Executive Director

**Lowcountry Council of Governments**

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