

**AGENDA
TOWN OF JUPITER ISLAND
TOWN COMMISSION MEETING
WEDNESDAY, JANUARY 14, 2026, 10:00 AM
ISLAND ROOM – TOWN HALL – 2 BRIDGE ROAD**

COMMENTS AND INTRODUCTION

1. Town-Wide Vulnerability Assessment Presentation (Cummins Cederberg)*
2. Questions and Discussion*

** No advanced materials provided*

TOWN COMMISSION

Penny Townsend, Mayor
Anne Scott, Vice Mayor
Marshall Field VI, Commissioner
Patricia Warner, Commissioner
Joseph Taddeo, Commissioner

ADMINISTRATIVE STAFF

Town Manager, Robert Garlo
Town Attorney, Kyle B. Teal
Town Clerk, Kimberly Kogos

TOWN VISION

The Town of Jupiter Island is a barrier island community, between the Indian River Lagoon and the Atlantic Ocean, where the beauty of nature will always dominate the presence of man. Our vision for the future is illustrated by the traditions of the past, formed by a community of caring individuals who, with imagination and heart, have combined the island's beautiful gifts of nature with those of tradition and family. Inherent in the character of the Town are tranquility, seclusion and safety. The residents of Jupiter Island will faithfully endeavor to preserve and nurture their unique community for all future generations

STATE MANDATED STATEMENT

If a person decides to appeal any decision made by the board, agency, or commission with respect to any matter considered at such meeting or hearing, he will need a record of the proceedings, and that, for such purpose, he may need to ensure that a verbatim record of the proceedings is made, which record includes the testimony and evidence upon which the appeal is to be based. Any person requiring a special accommodation at this meeting because of a disability or physical impairment should contact the Town prior to the meeting. Please contact the Town Hall, 2 Bridge Road, Hobe Sound, FL 33455, telephone (772) 545-0103.



Town of Jupiter Island Vulnerability Assessment Public Outreach Meeting #2



This work was funded in part through a grant agreement from the Florida Department of Environmental Protection's Office of Resilience and Coastal Protection Resilient Florida Program. The views, statements, findings, conclusions, and recommendations expressed herein are those of the author(s) and do not necessarily reflect the views of the State of Florida or any of its subagencies.



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Coastal & Marine Engineering

January 2026



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Senior Project Manager
Project Manager
 Cummins Cederberg



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Associate Principal
QA/QC Lead
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Town of Jupiter Island Commissioners

Penelope D. Townsend
 Mayor

Anne Scott
 Vice Mayor

Marshall Field VI
 Commissioner

Patsy Warner
 Commissioner

Joe Taddeo
 Commissioner



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Project Scope of Work

Task 1: Identify VA Data Standards

Task 2: Kick Off Meeting

Task 3: Steering Committee

Task 4: Public Outreach Meeting #1

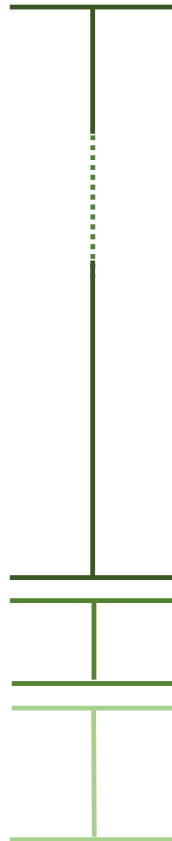
Task 5: Acquire Background Data

Task 6: Exposure Analysis

Task 7: Sensitivity Analysis

Task 8: Public Outreach Meeting #2

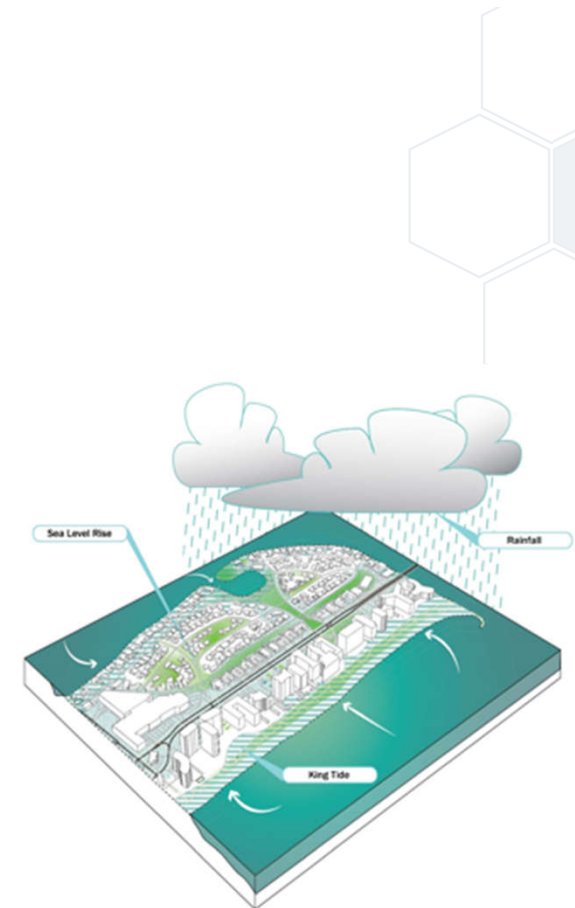
Task 9: Final VA Report, Maps, and Tables



Completed Work

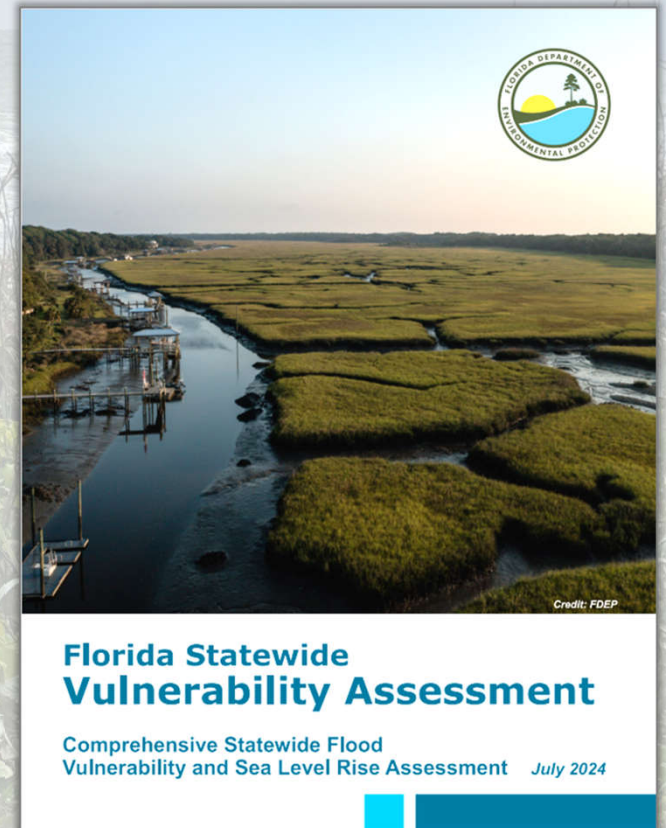
Ongoing

Next Step



Resilient Florida Grant Program and Statute

- Resilient Florida Program established in **2021** under Senate Bill 1954 – Florida Statute (F.S.) 380.093
- **Florida is particularly vulnerable** to increasing severity and frequency of rainfall events, storm surge, tidal flooding, and sea level rise
- Created opportunities to **support local governments** to improve resilience to flooding and sea level rise
 - Incentive: grant funding eligibility
 - Minimum standards to evaluate flood risk



What is a Vulnerability Assessment?

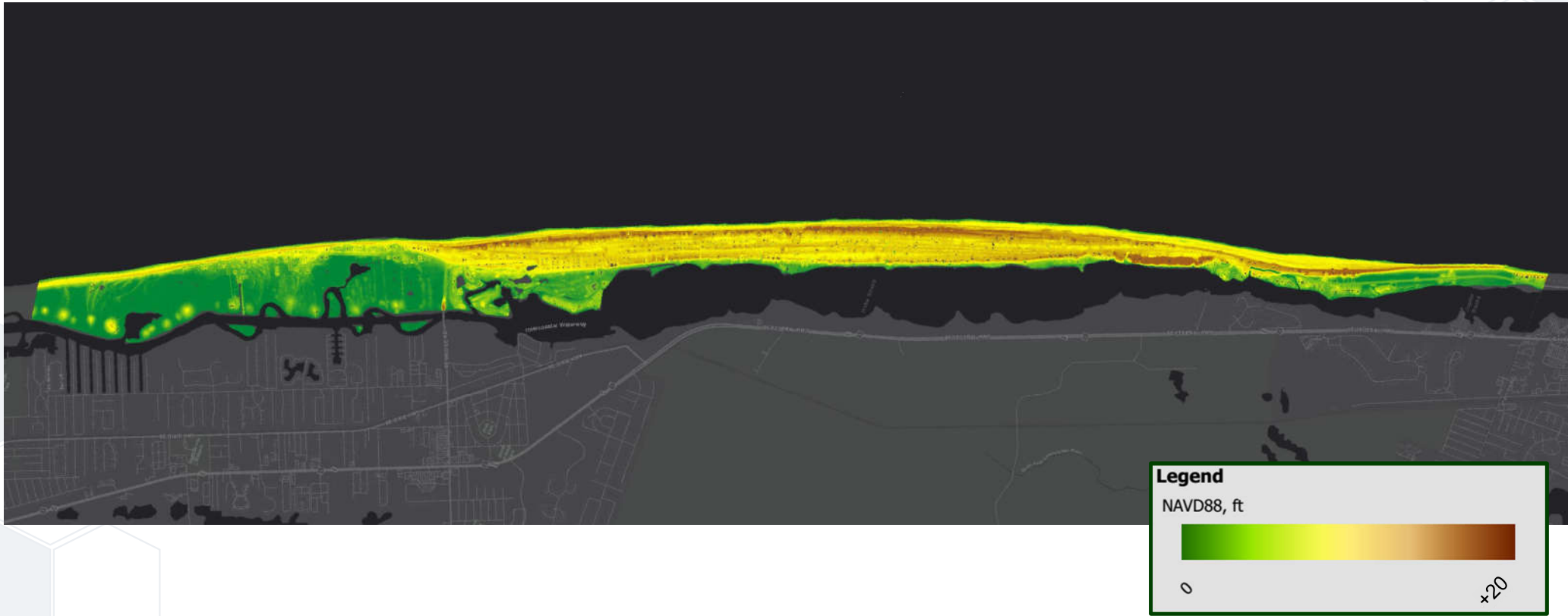
- The **Vulnerability Assessment** :
 - Identify grantee's critical and regionally significant assets
 - Evaluate flood risks associated with SLR, tides, storm surge, rainfall, and compound flooding
 - Prioritize the assets by criticality and flood risk
- The Town will use this information to identify projects, develop adaption strategies, and implement resiliency measures **short-, intermediate- and long-term**
- The Town can submit projects to the Statewide Flooding and Sea Level Rise Resilience Plan for potential award of **legislative funding**

Task 1: Identify VA Data Standards

Goal: Identify data standards to include **sea level rise scenarios** and **planning horizons** needed to perform the Vulnerability Assessment

- **Categories of Data:**
 - Topographical Data
 - Flood Scenario Data
 - Critical Asset Inventory
- **Flood Scenario Data:**
 - Sea Level Rise
 - Mean Higher High Water
 - High Tide Flooding
 - Storm Surge
 - Rainfall
 - Compound Flooding
- **Data Sources:**
 - Town of Jupiter Island Data
 - Martin County Data
 - Florida Flood Hub
 - NOAA
 - FEMA
 - LiDAR
 - FDEM

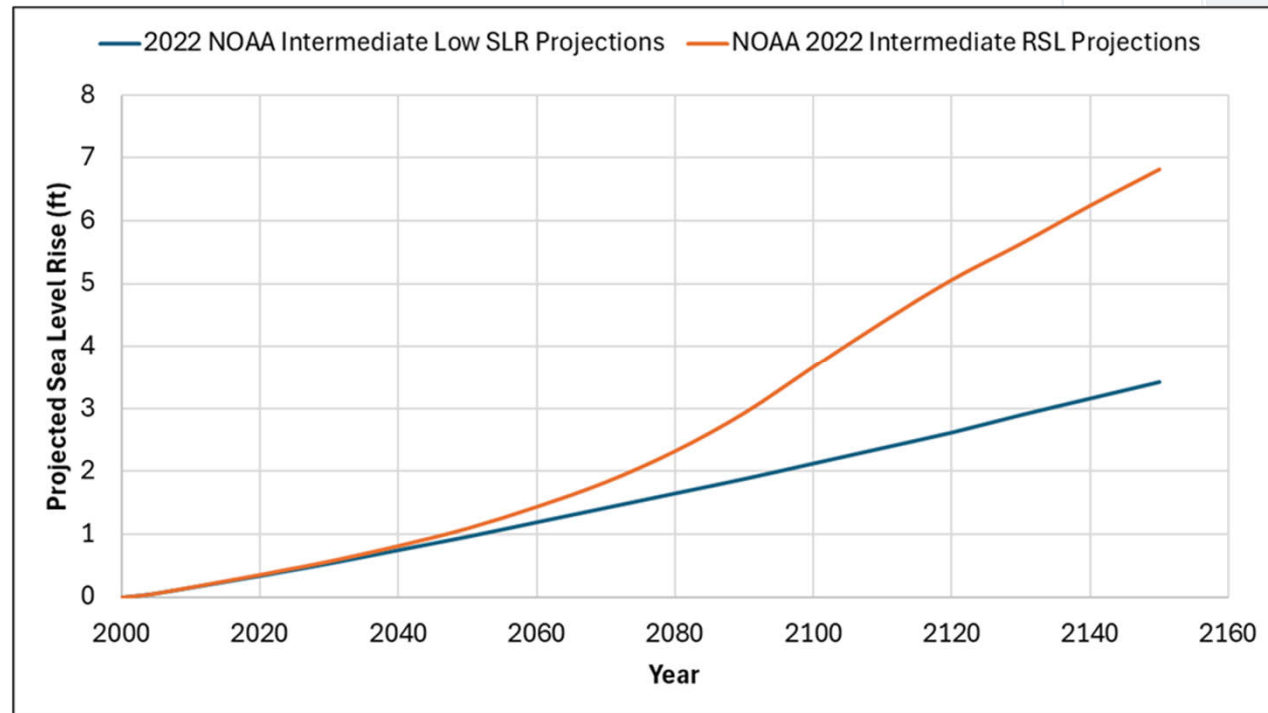
Digital Elevation Model



Sea Level Rise

Florida Statute Minimum Requirements:

- **2022 NOAA Sea Level Rise projections**
(Intermediate Low & Intermediate)
- **2050 & 2080 Planning Horizons**
- High tide flooding
- 100-yr Storm Surge
- 100-yr Rainfall
- 500-yr Rainfall
- Compound flooding

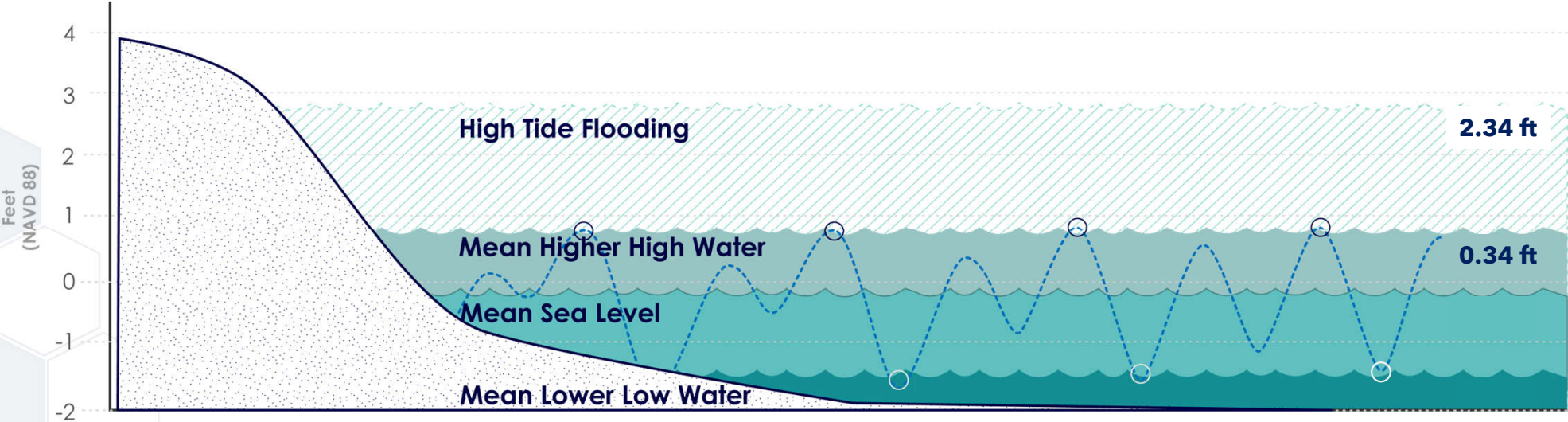


Tidal Flooding

High Tide Flooding is 2 ft above Mean Higher High Water; defined by FDEP.

NOAA defines a datum as a *base elevation used as a reference to set heights and depths.*

- Common datums:**
- Mean Higher High Water (MHHW)
 - Mean Lower Low Water (MLLW)
 - Mean Sea Level (MSL)
 - North American Vertical Datum of 1988 (NAVD88)



High Tide Flooding

- High tide flooding, king tide, nuisance flooding, or sunny day flooding
- Typically occur from **September to November** in Martin County



How is a 100-Year Flood Determined?

An **Annual Exceedance Probability (AEP)** is the **statistical likelihood that an event will occur each year.**

- 1% AEP was selected by the National Flood Insurance Program as a fair balance between protecting the public and overly stringent regulations.
- **Ten or more years** of data are used to perform a frequency analysis (USGS).
- The 100-year flood **can change** as more data is collected.

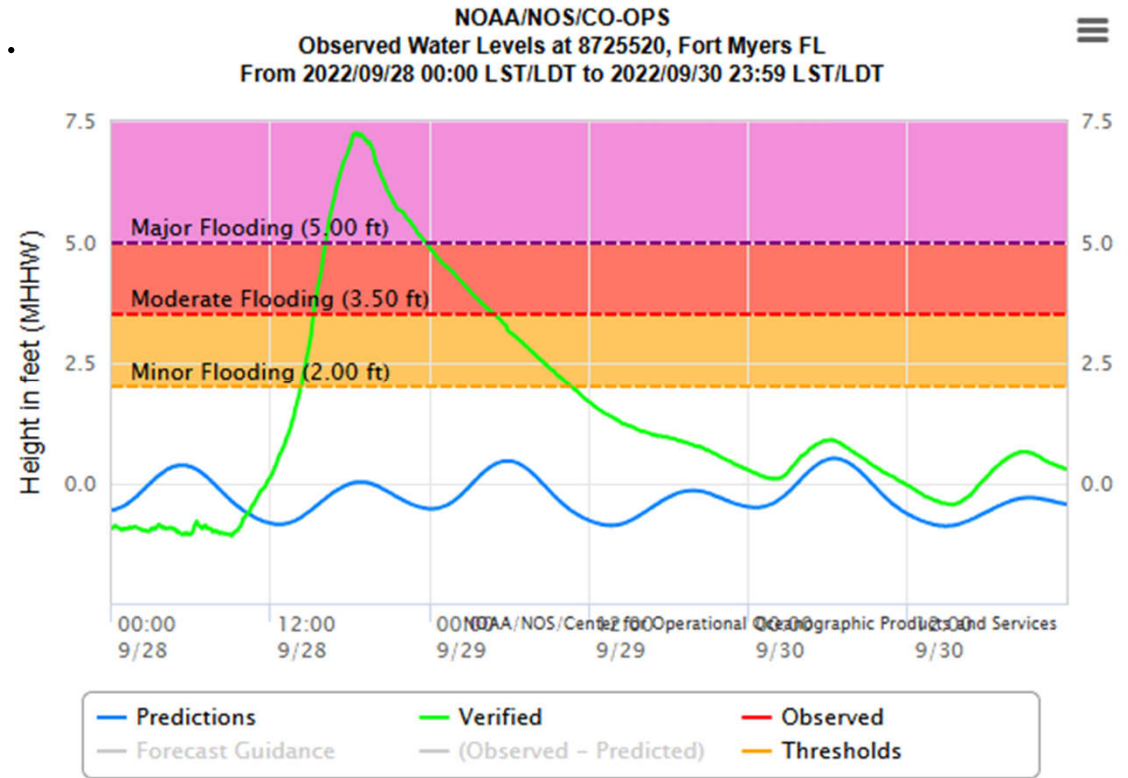


Satellite imagery of Hurricane Ian (2022), estimated as 100-yr storm surge at Fort Myers

Storm Surge Flooding

Storm Surge is the abnormal rise in water levels generated by a storm.

- **100-year Storm Surge** specified storm surge level that has a **1% probability of being reached in any given year**.
- Can occur multiple times in one year
- Varies for different regions



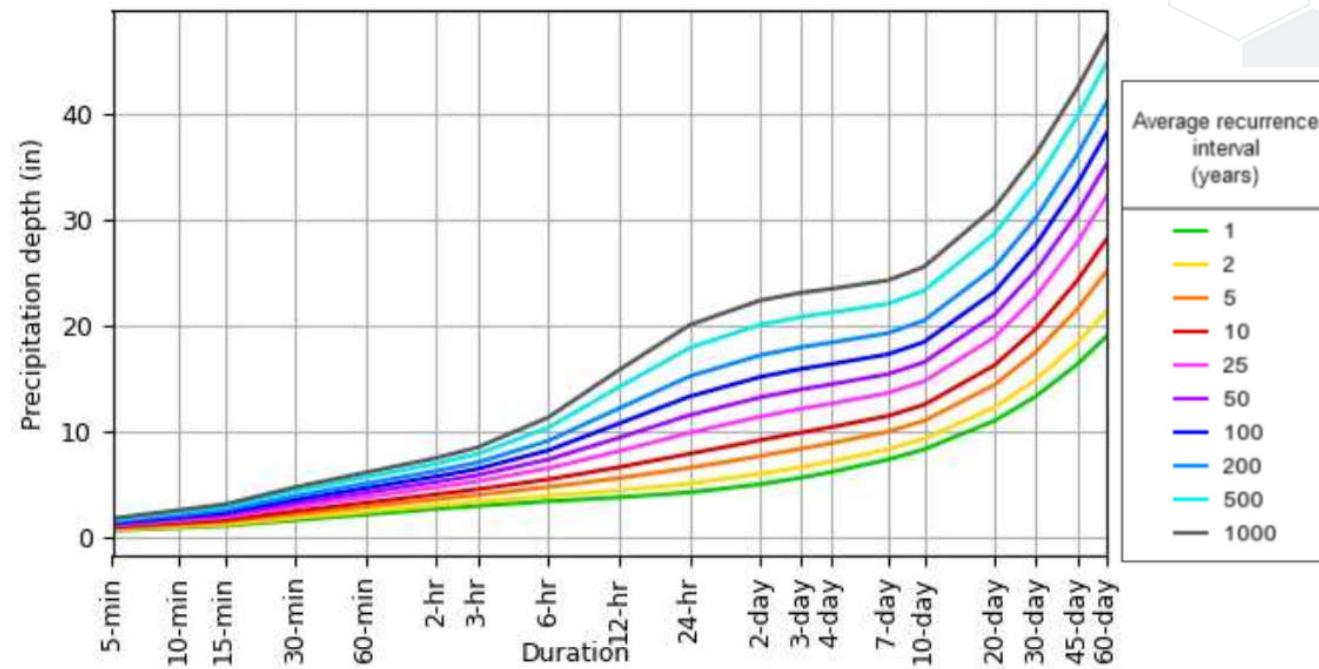
Hurricane Ian (2022) estimated as 100-yr storm surge at Fort Myers

Rainfall Induced Flooding

Rainfall AEPs used in this study:

- **100-year Rainfall:** Specified rainfall amount that has a **1% chance of being reached in any given year.**
- **500-year Rainfall:** Specified rainfall amount that has a **0.2% chance of occurring in any given year.**

PDS-based depth-duration-frequency (DDF) curves
Latitude: 27.2000°, Longitude: -80.1639°

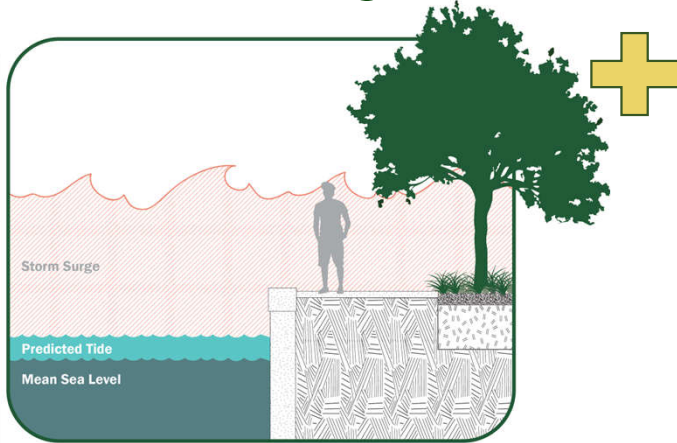


Source: NOAA ATLAS 14

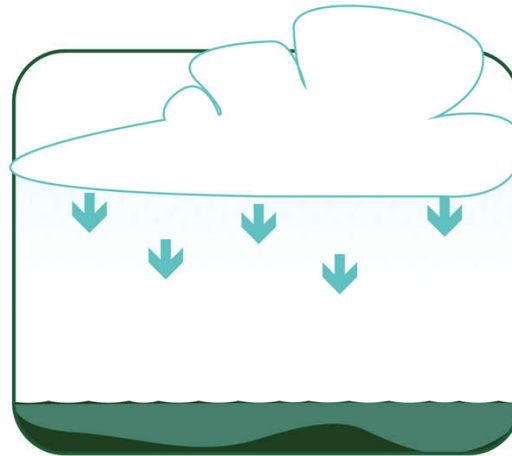
Compound Flooding

Multiple factors often play a role in flooding. This study takes into consideration the **combination** of multiple flood types.

Storm Surge



Rainfall



High Tide Flooding



Critical Asset Classes & Types

Critical assets are publicly owned or maintained. **Regionally Significant** assets are *critical assets that support the needs of communities spanning multiple geopolitical jurisdictions. Some privately owned assets were included in this analysis for planning purposes.*



Transportation and Evacuation Routes

- Airports
- Bridges
- Bus Terminals
- Ports
- Major Roadways
- Marinas
- Railroads
- Rail Facilities



Critical Infrastructure

- Communications
- Disaster Debris Sites
- Solid and Hazardous Waste Facilities
- Electrical Facilities
- Military Installations
- Drinking Water Facilities
- Wastewater Facilities
- Stormwater Facilities



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Critical Community and Emergency Facilities

- Affordable Public Housing
- Schools, Colleges, Universities
- Community Centers
- Disaster Recovery Centers
- Emergency Medical Facilities
- Emergency Operation Centers
- Fire stations
- Governmental Facilities
- Hospitals
- Law Enforcement facilities



Natural, Cultural, and Historical Resources

- Conservation Lands
- Parks
- Shorelines
- Surface Waters
- Wetlands
- Historical and Cultural Assets


Critical Asset Class and Type

Asset Class	Asset Type	Counts			
		Town Owned	Reg. Significant	Privately Owned	Total
Transportation and Evacuation Routes	Bridges	0	1	0	1
	Major Roadways	26	1	1	28
	Evacuation Routes	2	1	0	3
	Subtotal	28	3	1	32
Critical Infrastructure	Stormwater Treatment Facilities and Pump Stations – Ponds	0	0	4	4
	Stormwater Treatment Facilities and Pump Stations – Exfiltration Structures	18	0	0	18
	Stormwater Treatment Facilities and Pump Stations – Catch Basins	45	0	0	45
	Stormwater Treatment Facilities and Pump Stations – Culverts	0	2	0	2
	Subtotal	63	2	4	69
Critical Community and Emergency Facilities	Religious Facilities	0	0	2	2
	Emergency Medical Service Facilities	1	0	0	1
	Emergency Operation Centers	1	0	0	1
	Fire Stations	1	0	0	1
	Law Enforcement Facilities	1	0	0	1
	Local Government Facilities	1	0	0	1
	Logistical Staging Areas	1	0	0	1
	Subtotal	9	0	0	9
Natural, Cultural, and Historic Resources	Conservation Lands	1	5	0	6
	Parks/Beach Access	1	2	0	3
	Historical Assets	0	0	17	17
	Shorelines	0	1	0	1
	Surface Waters	0	4	0	4
	Subtotal	2	12	17	31
Total		102	17	22	141

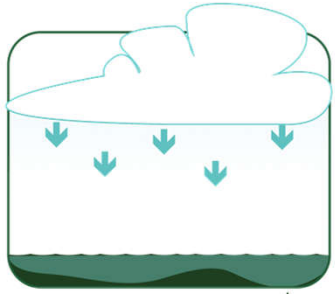
Critical Assets Map

Legend

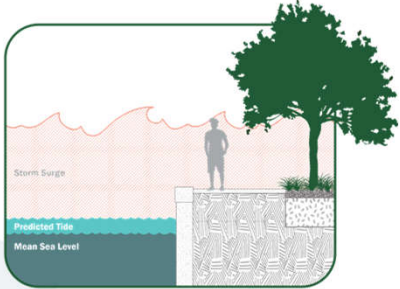
- Municipal Boundary
- Critical Infrastructure**
 - Stormwater Pond
 - Stormwater Culvert
 - Stormwater Catch Basin
 - Stormwater Exfiltration Structure
- Critical Community and Emergency Facilities**
 - Dock
 - Town Hall
 - Fire Station
 - Religious Facility
 - Logistical Staging Area
 - Law Enforcement Facility
 - Emergency Operation Center
 - Emergency Medical Service Facility
- Natural, Cultural, and Historical Resources**
 - Historical Asset
 - Park/Beach Access
 - Shoreline
 - Surface Waters
 - Conservation Lands
- Transportation Assets and Evacuation Routes**
 - Bridge
 - Major Roadway
 - Evacuation Route



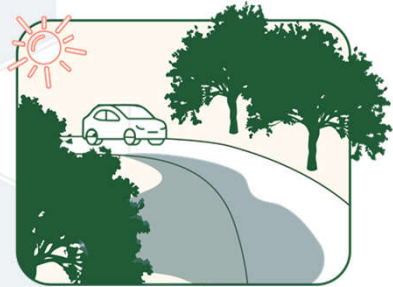

Task 6: Exposure Analysis



Modified Bathtub Model



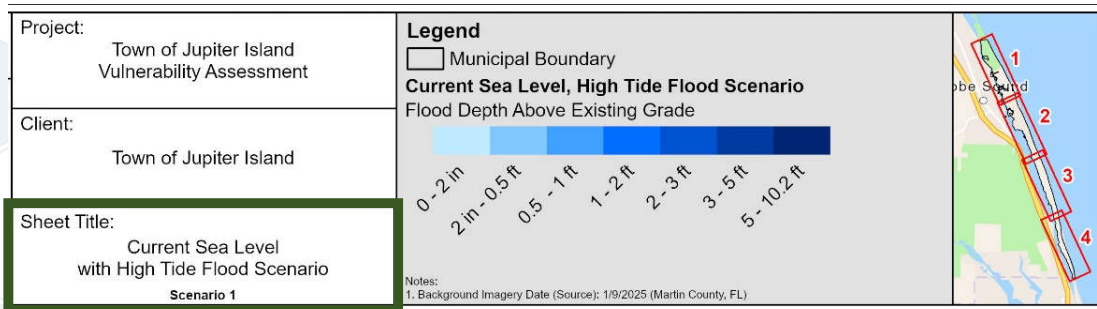
Dynamic Model



Scenario No.	Rainfall	SLR Projection	Planning Horizon	Tidal Condition
1	N/A	N/A	2023 - Current	HTF
2	N/A	NOAA Intermediate Low	2050	HTF
3	N/A	NOAA Intermediate	2050	HTF
4	N/A	NOAA Intermediate Low	2080	HTF
5	N/A	NOAA Intermediate	2080	HTF
6	N/A	N/A	2023 - Current	100-yr SS
7	N/A	NOAA Intermediate Low	2050	100-yr SS
8	N/A	NOAA Intermediate	2050	100-yr SS
9	N/A	NOAA Intermediate Low	2080	100-yr SS
10	N/A	NOAA Intermediate	2080	100-yr SS
11	100-yr	N/A	2023 - Current	MHHW
12	100-yr	NOAA Intermediate	2050	MHHW
13	500-yr	N/A	2023 - Current	MHHW
14	100-yr	N/A	2023 - Current	100-yr SS + HTF
15	100-yr	NOAA Intermediate	2050	100-yr SS
16	500-yr	N/A	2023 - Current	100-yr SS + HTF




Flood Depth Maps

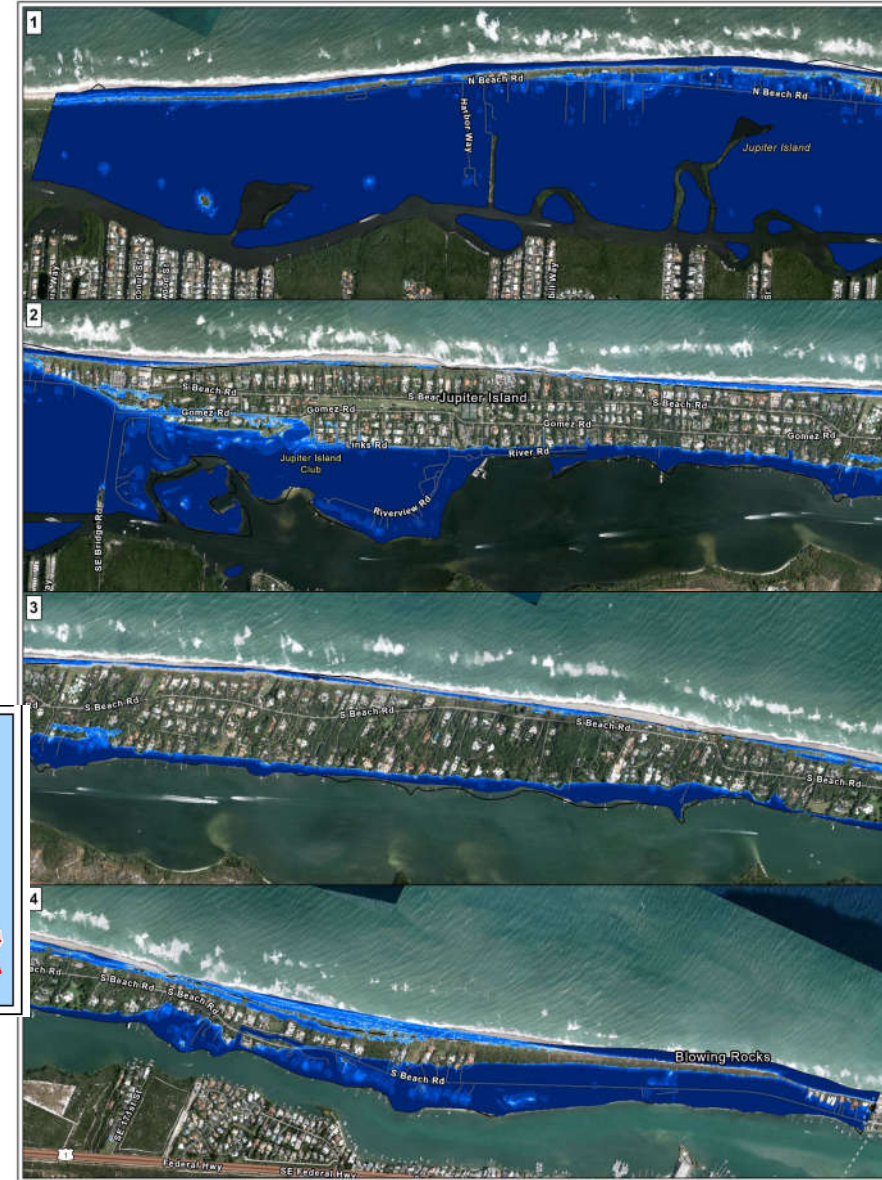
- Inundation maps were generated for each of the 16 flood scenarios
- Maps show the greatest flood depth expected



Flood Depth Maps

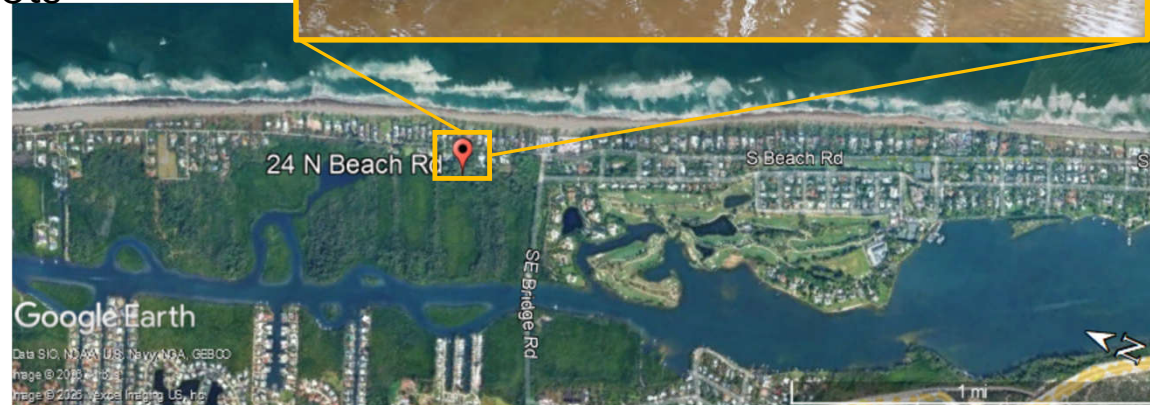
- Scenario 10 (2080 Intermediate SLR with 100-yr Storm Surge) exhibits the greatest flood depths
- Overwash from the Atlantic Ocean predicted along N Beach Rd and the 600 Block of S Beach Rd

Project: Town of Jupiter Island Vulnerability Assessment	Legend  Municipal Boundary 2080 Intermediate, 100yr Storm Flood Depth Above Existing Grade 	
Client: Town of Jupiter Island		
Sheet Title: 2080 Intermediate Sea Level Rise with 100yr Storm Surge Flood Scenario Scenario 10	Notes: 1. Background Imagery Date (Source): 1/9/2025 (Martin County, FL)	



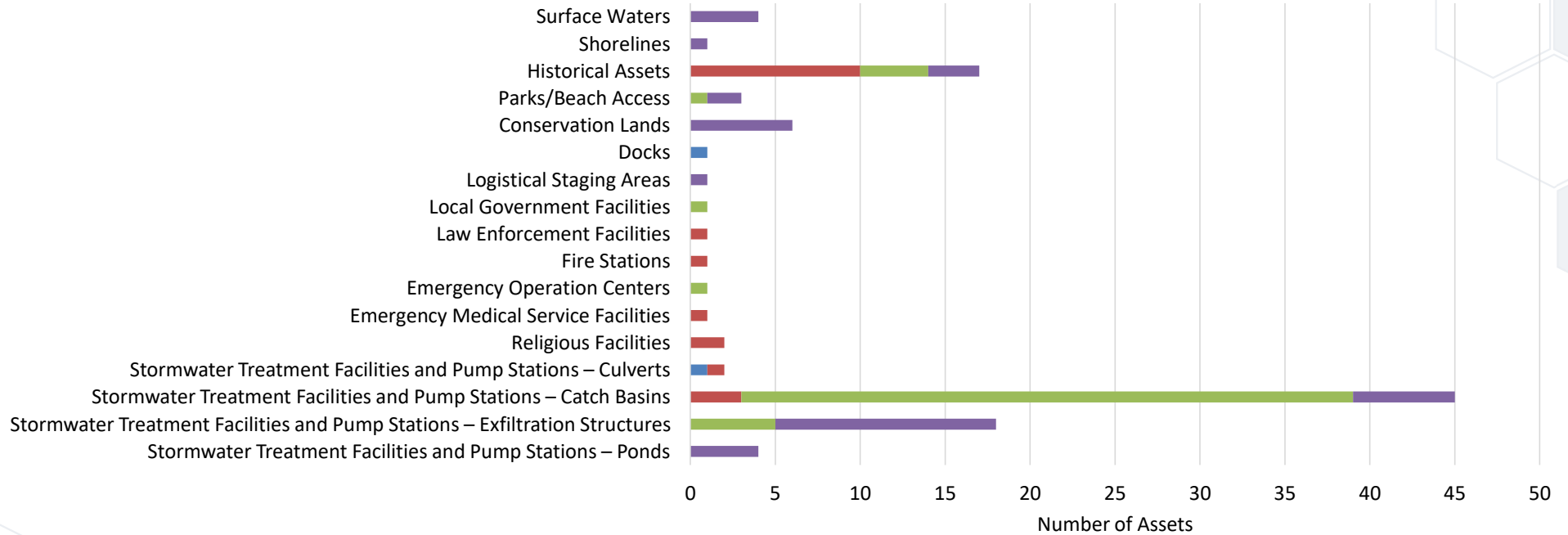
Task 7: Sensitivity Analysis

- **What assets are the most critical to the Town from an operations standpoint?**
- Goal: To **quantify the flood risk** for each asset class
- Evaluate the **impact of flood severity** on each asset class based on the flood depths assets are exposed to under each flood scenario
- Identify the percentage of land area inundated and number of critical assets affected in each flood scenario
- Location: 24 N. Beach Rd
 - This location has two exfiltration structures

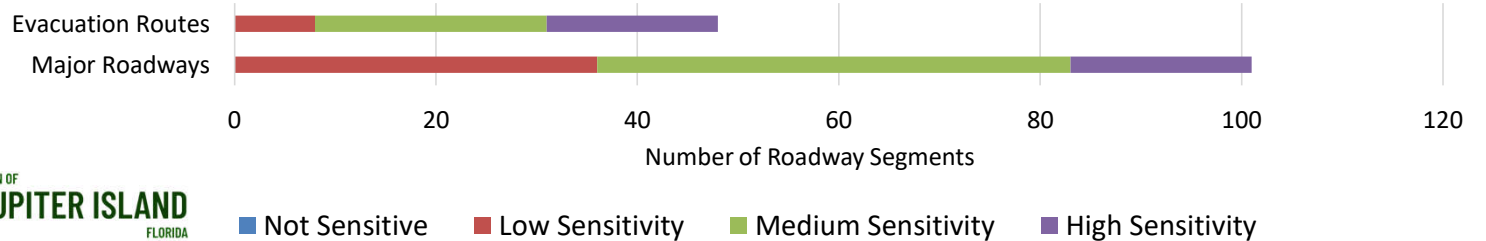


Sensitivity Levels

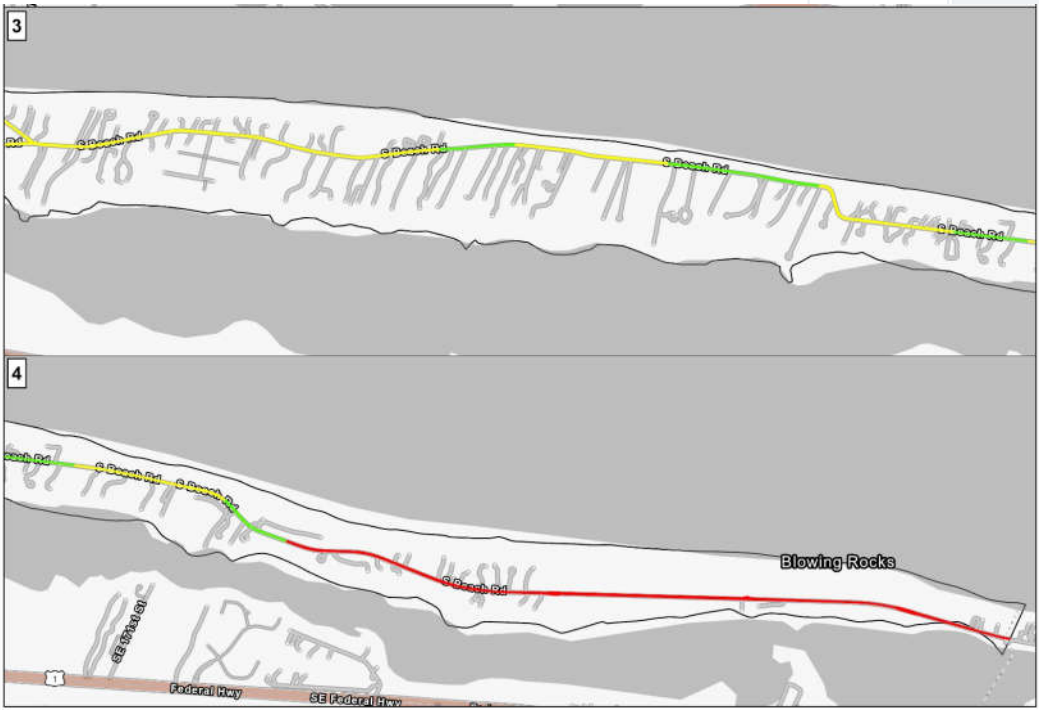
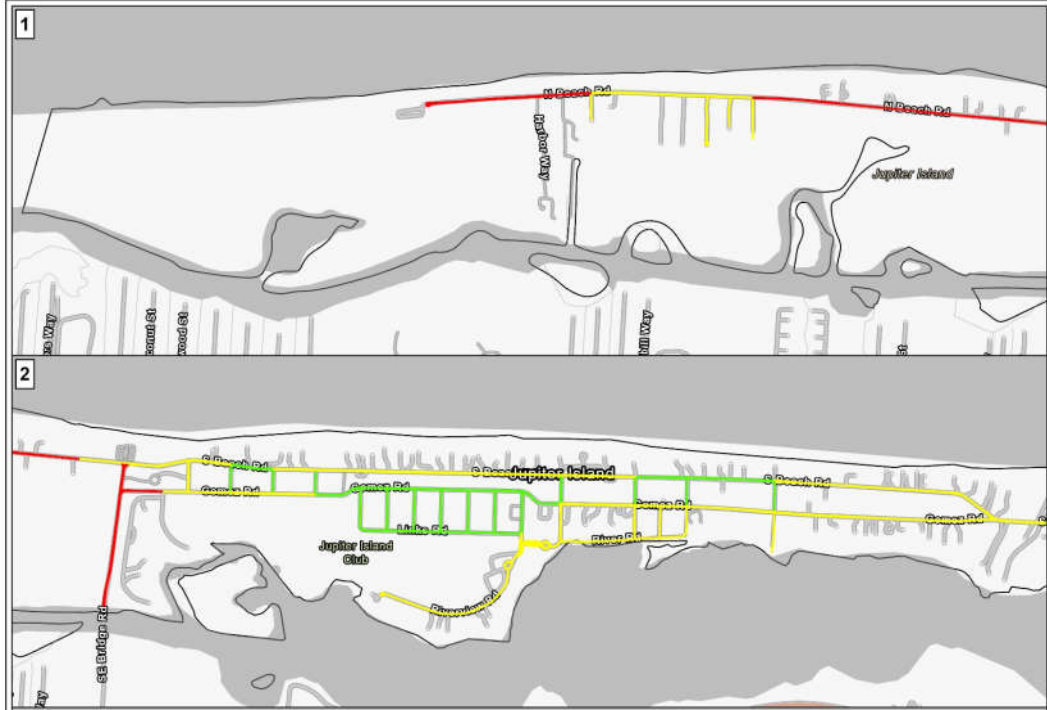
Non-Roadway Asset Types



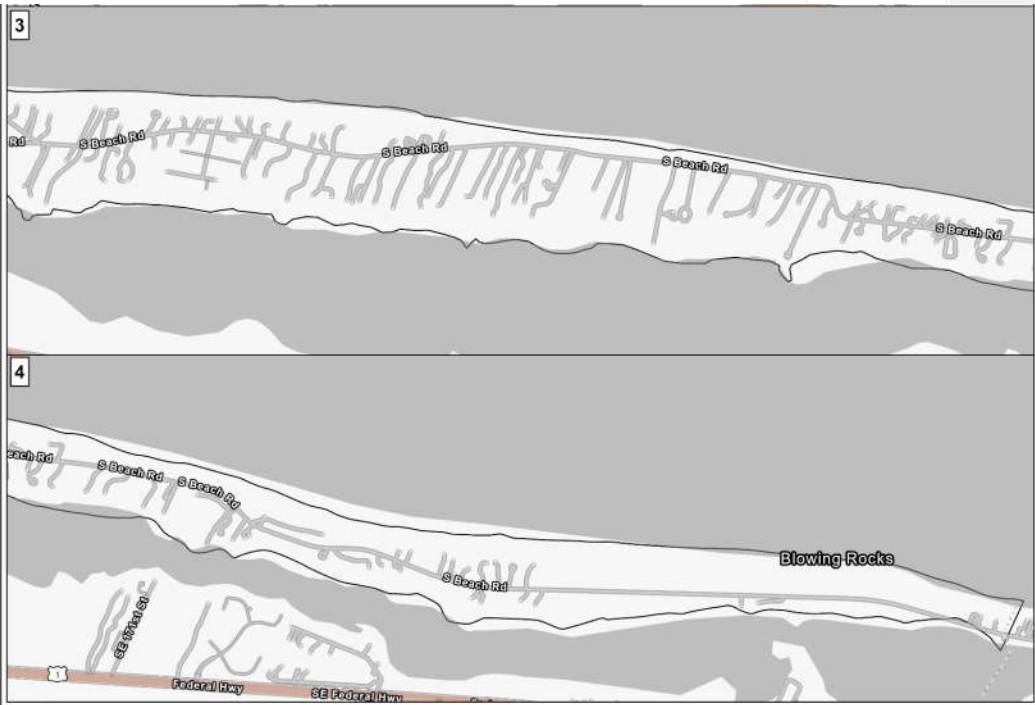
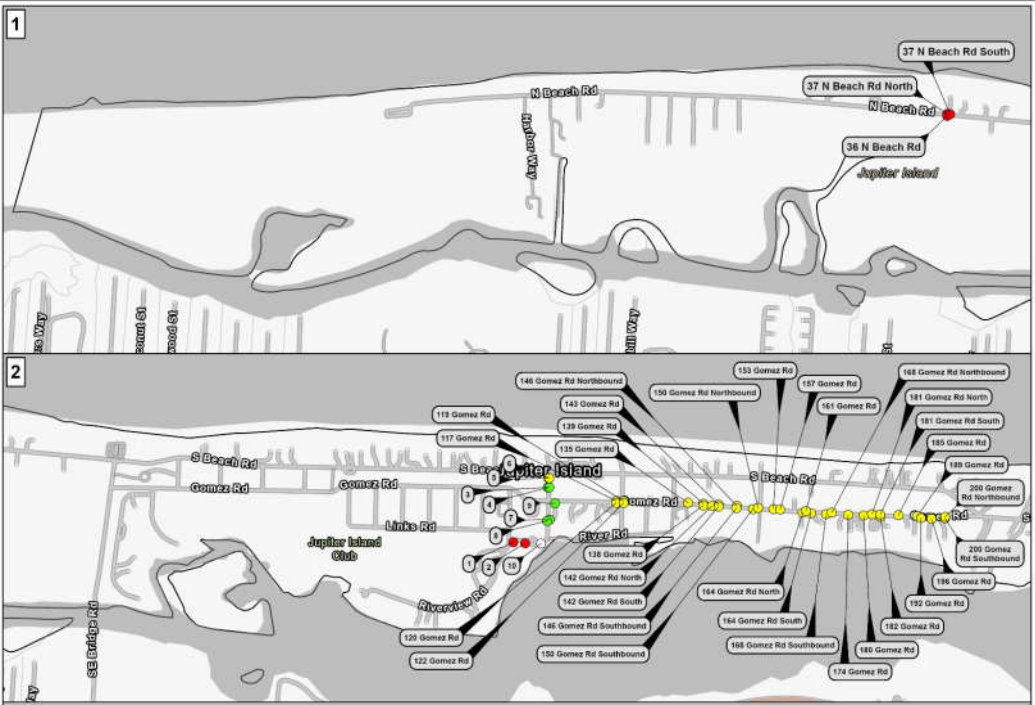
Major Roadways and Evacuation Routes



Sensitivity Maps – Major Roadways



Sensitivity Maps – Stormwater Catch Basins



Sensitivity Maps – Conservation Lands



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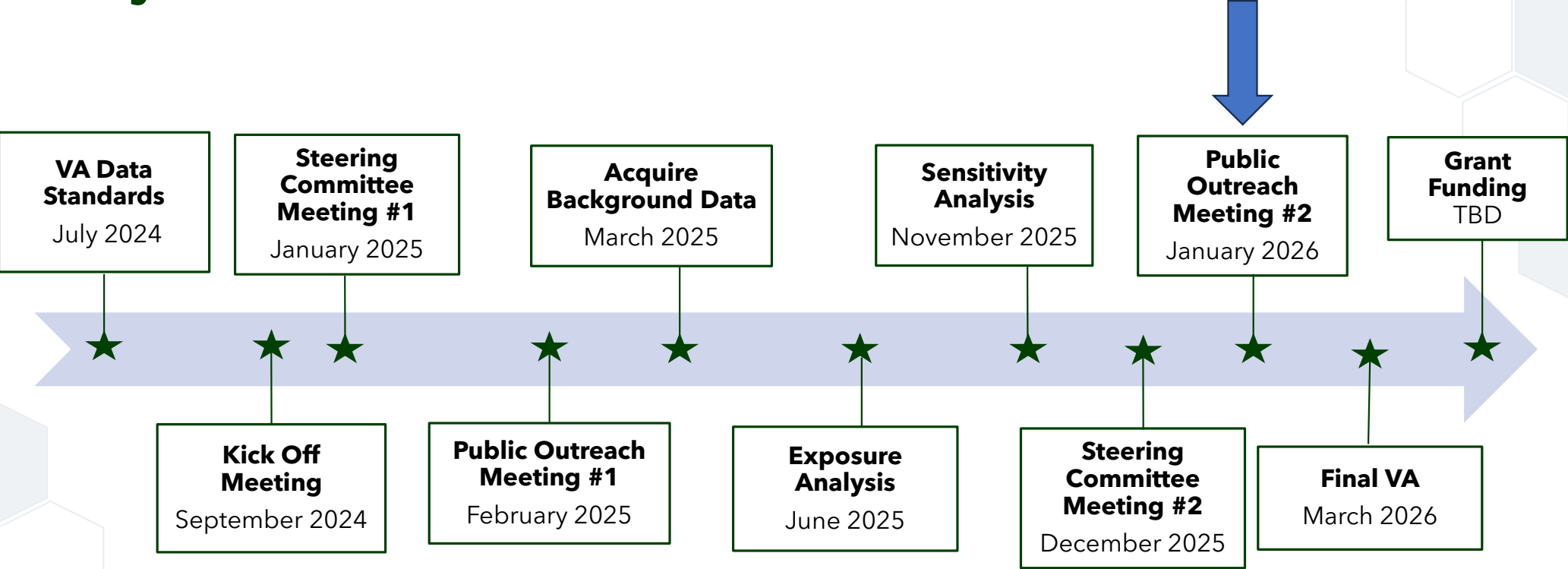


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Summary of Risk

- The Town is particularly vulnerable to back bay flooding
- Very few assets are classified as “Not Sensitive” due to widespread flooding under some modeled scenarios
- Assets along N Beach Rd, the southern portion of S Beach Rd, and adjacent to the ICW shoreline experience the highest flood depths
- Aside from roadways, the stormwater asset classes contain the greatest number of “Medium Sensitivity” and “High Sensitivity” assets

Project Schedule



Questions?

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