



# Resilient Long Beach Island

## Ship Bottom Project Meeting

Conceptual Development Phase  
August 22, 2024

<https://resilient.nj.gov/lbi/>

# Agenda

## Meeting Objective:

- To understand Ship Bottom's priorities for a residential perimeter approach
- To discuss coordination and process



Introductions



Update on Resilient LBI Project Overall



Bayside Residential Perimeter Strategy



Sunset Point Shoreline



Next Steps

# Introductions



**NJ DEP Project Coordinator:** Barbara Woolley-Dillon

**Consultant Project Manager:** Simon Kates

## **Consultant Team:**

**Kleinfelder:** James Killen, Kyle Johnson, Julia Maron | **Ramboll:** Simon Kates, Emory Lee, Anna Hochhalter

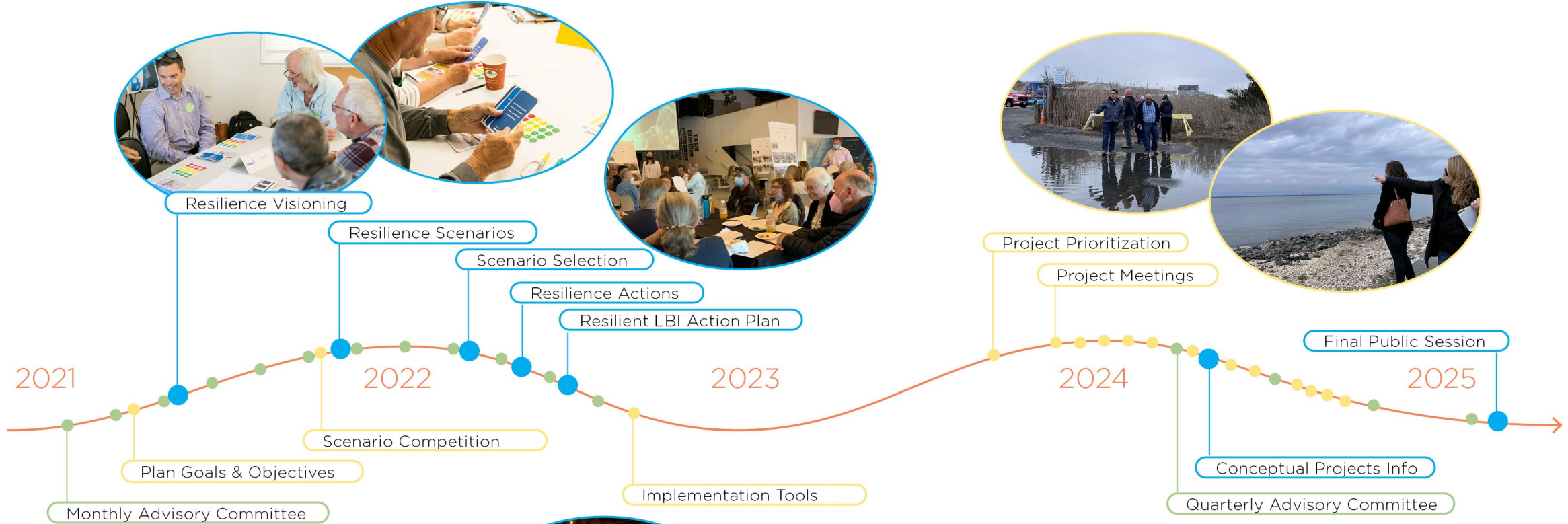
# Resilient LBI Project Update

Background and Current Status

# Overall Program Timeline



# Stakeholder Engagement



Resilience Visioning



- Public Workshops
  - Advisory Committee Meetings
  - Meetings with Municipal Leads
- August 22, 2024



# Resilient LBI Project Scope and Objectives

Phase 1: January 2021 – October 2022

## REGIONAL UNITY

Built foundational relationships with municipal, regional, academic, and non-profit partners

## ENGAGED STAKEHOLDERS

Formed the Resilient LBI Advisory Committee to advance resilience efforts

## SHARED VISION

Established a shared vision for resilience on LBI

## FLOOD RISK AWARENESS

Developed detailed flood models and vulnerability assessments

## ITERATIVE WORKSHOPS

Hosted a series of workshops to involve LBI stakeholders in strategizing solutions

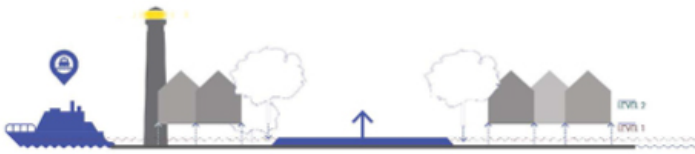
## RESILIENT LBI ACTION PLAN

Unique and innovative strategies to advance resilience on LBI

# Resilient Long Beach Island Action Plan

Culmination of Phase 1 & Resilience Recommendations

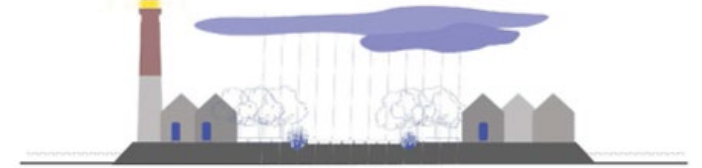
Mobility & Emergency Management



Engineered Shoreline Solutions



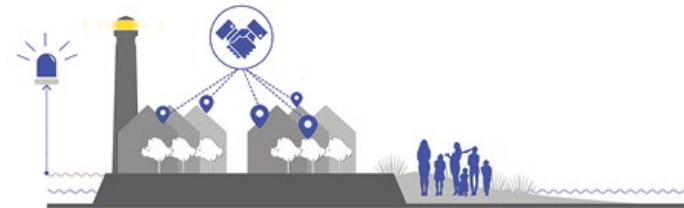
Innovative Stormwater Management



Nature-based Solutions



Foundational





# Resilient LBI Project Scope and Objectives

Phase 2: October 2023 – March 2025

## Conceptual Project Development

Facilitate implementation of the Resilient LBI Action Plan by:

- Conceptual design of local and regional projects--with the support of project sponsors--to help with future grant applications.
- Assist project sponsors in submitting grant applications.
- Leverage the Regional Vulnerability Assessment to create MLUL-compliant Climate Change-Related Hazard and Vulnerability Assessments.

Eligible planning activities during Phase 2:

- Feasibility assessments
- Additional study
- Grant applications
- Public engagement

# Resilient LBI Project Scope and Objectives

Phase 2: October 2023 – March 2025

## **On-going work under Phase II**

- Regular meetings with municipal leads and regional stakeholders.
- Review of Resilient LBI Action Plan to identify priority projects and guide Phase 2 work.
- Conceptual design of select projects.
- Recurring Advisory Committee Meetings.
- Recurring Public Information Sessions.
- Website update: <https://resilient.nj.gov/lbi/>

# Conceptual Project Development

## Project Types

Nature-based Solutions

Shoreline Stabilization

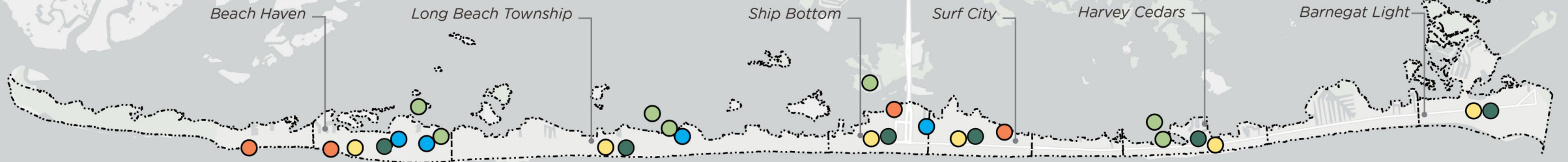
Building Floodproofing and Stormwater Management

Climate Change-Related Hazard & Vulnerability Assessments

Emergency Communication and Preparedness



# Resilient LBI Projects In-progress

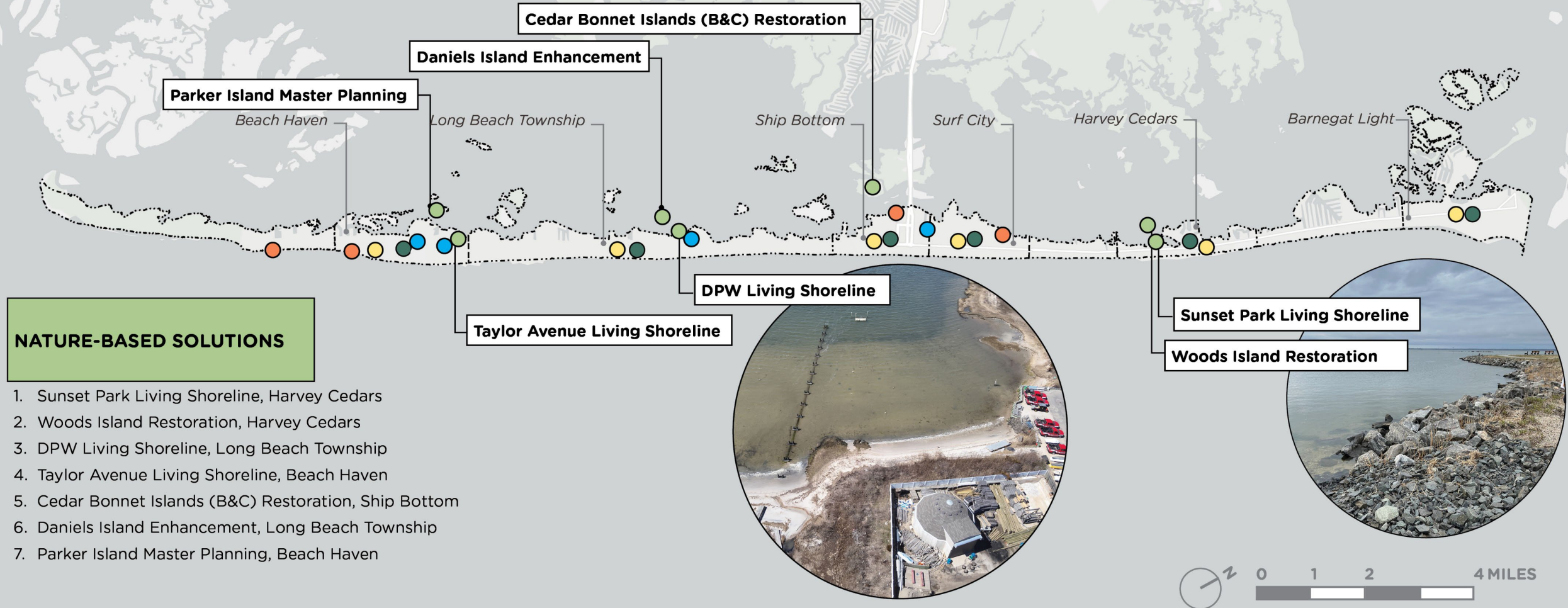


- NATURE-BASED SOLUTIONS
- SHORELINE STABILIZATION
- BUILDING FLOODPROOFING & STORMWATER MANAGEMENT
- CLIMATE CHANGE-RELATED HAZARD & VULNERABILITY ASSESSMENTS
- EMERGENCY COMMUNICATION & PREPAREDNESS





# Resilient LBI Projects In-progress

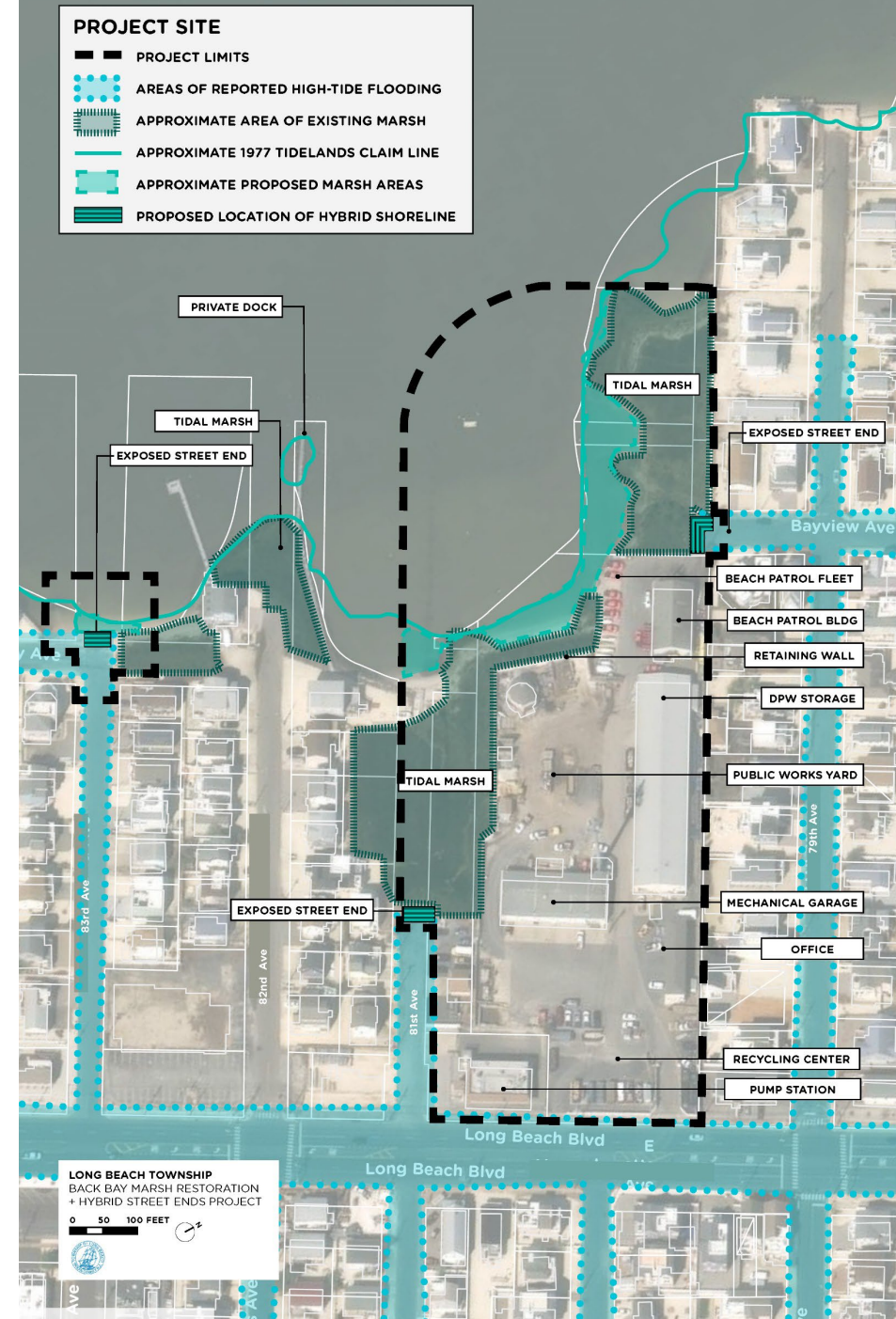


# Project Spotlight

## DPW Living Shoreline, Long Beach Township

### Restoring Back Bay Salt Marsh and Creating Hybrid Living Shorelines for Long Beach Township Resilience

- Restore and expand existing tidal salt marsh
- Create a marsh sill to attenuate waves and expand existing marshland
- Create hybrid living revetment features on multiple street ends to reduce frequency of high tide street flooding
- Develop a public access pathway to the bay

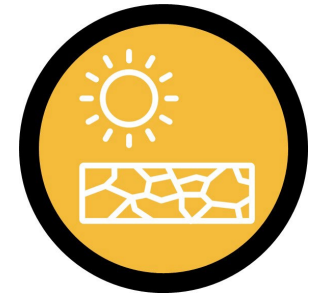




# Climate Change-Related Hazard and Vulnerability Assessments

**Objective: Create Vulnerability Assessments for each municipality on LBI to evaluate current and future climate impacts.**

- Regional Vulnerability Assessment was created during Phase 1.
- In 2021, NJ amended the Municipal Land Use Law (MLUL) to require municipalities to include a Climate Change-Related Hazard and Vulnerability Assessment (CCRHVA) in the land use element of their master plan.
- Project team is adapting the regional Vulnerability Assessment so that each municipality on LBI has a draft CCRHVA that can be incorporated in their next master plan re-examination.
- Components of the CCRHVA include:
  - Climate Hazard Assessment
  - Vulnerability Assessment
  - Build-Out Analysis



# Ship Bottom Conceptual Projects Underway

In alignment with Ship Bottom's priorities and the Resilient LBI Action Plan

## Projects In-progress

- Bayside Residential Perimeter Strategy (Homeowner Bulkhead Guidance)
- Sunset Point Beach Shoreline Stabilization Implementation
- Bay Island Restoration (Cedar Bonnet Islands B & C)
- Climate Change Related Hazard Vulnerability Assessment (CCRHVA)

# **Bayside Residential Perimeter Strategy**

# Previously discussed project goals

Discussed November 28, 2023

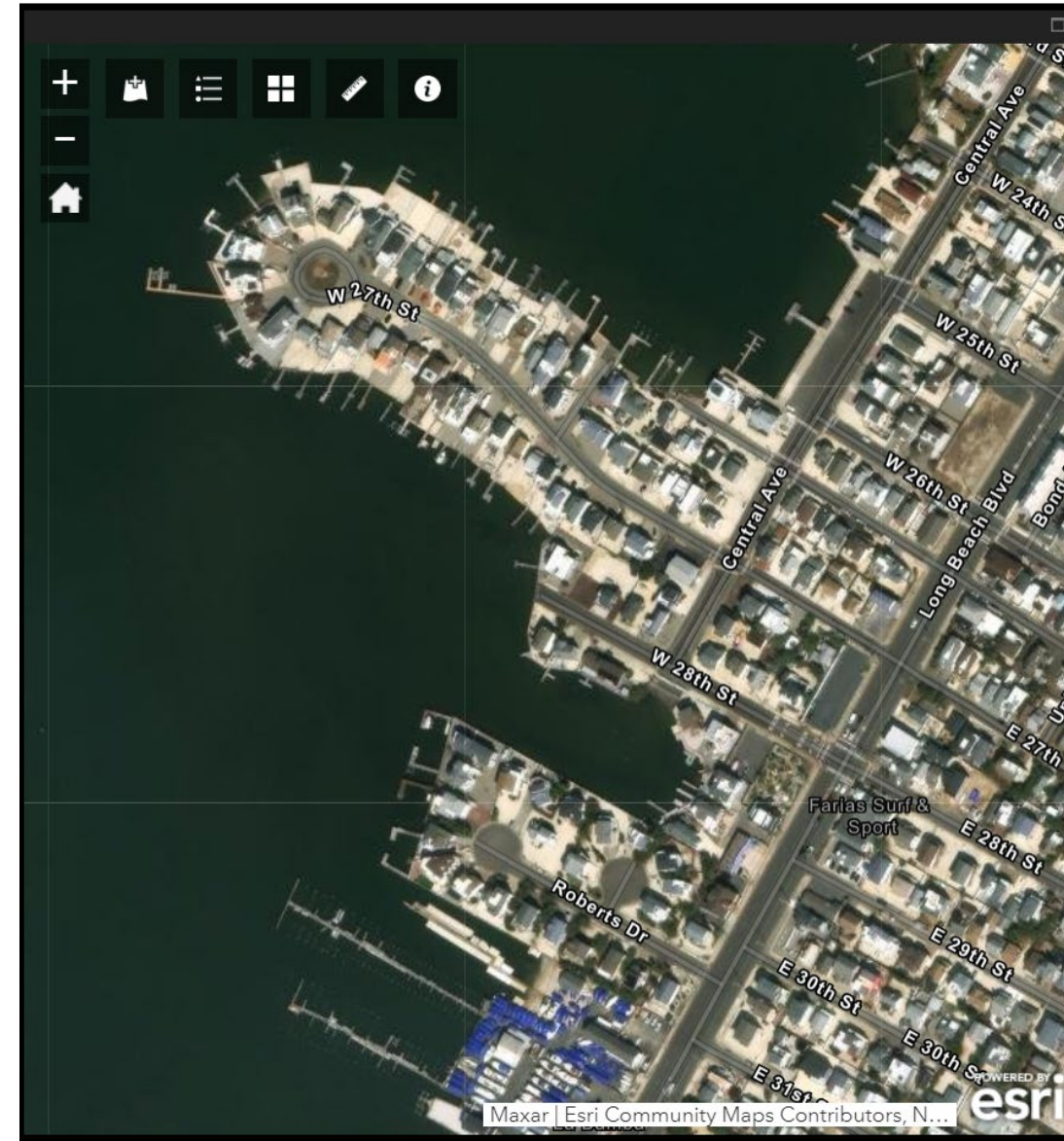
## Bayside Residential Perimeter Project Goals:

- Assist Borough in improving bulkheads on private property
- Assist with education and outreach

## Existing Efforts:

- Bulkhead retrofits are primarily done by local contractors hired by homeowners
- Homeowners are responsible for obtaining permits

<https://resilient-nj-long-beach-island-rambollglobal.hub.arcgis.com/>



# Defining the approach

For discussion today

## What are your priorities?

- Use flood modeling to **identify vulnerable bayside neighborhoods** (connectivity and exposure of critical facilities).
- Outline **potential ordinance** with shoreline/bulkhead elevations, materials, and encourage nature-based solutions.
- Develop tools and methods for targeted **outreach and education**.
- **Engage with NJDEP** on permitting incentives for hybrid and nature-based solutions.

## **Items for Consideration**

1. *How does Ship Bottom want to be involved in regulating private bulkheads?*
2. *Flood elevations vary by event and are increasing in time. What level exposure does Ship Bottom think is appropriate between major storms versus frequent high tide flooding?*
3. *To what degree does Ship Bottom want to promote nature-based solutions versus gray infrastructure / hardened shorelines?*

# Considering Design and Ordinance Guidance

Many factors to consider

## **Consider WHEN requirement applies:**

- Require property owners to reconstruct bulkhead to certain height when:
  - They make property improvements above certain budget amount. OR
  - They sell the property. OR
  - They do any work on the shoreline. OR
  - Their existing bulkhead is contributing to right-of-way flooding during certain events. OR
- Other criteria

## **Consider WHAT design would be required:**

- Bulkhead minimum height based on level of flood exposure for a selected design storm
- Type of bulkhead construction
- Nature-based solutions to be evaluated before hardened structures



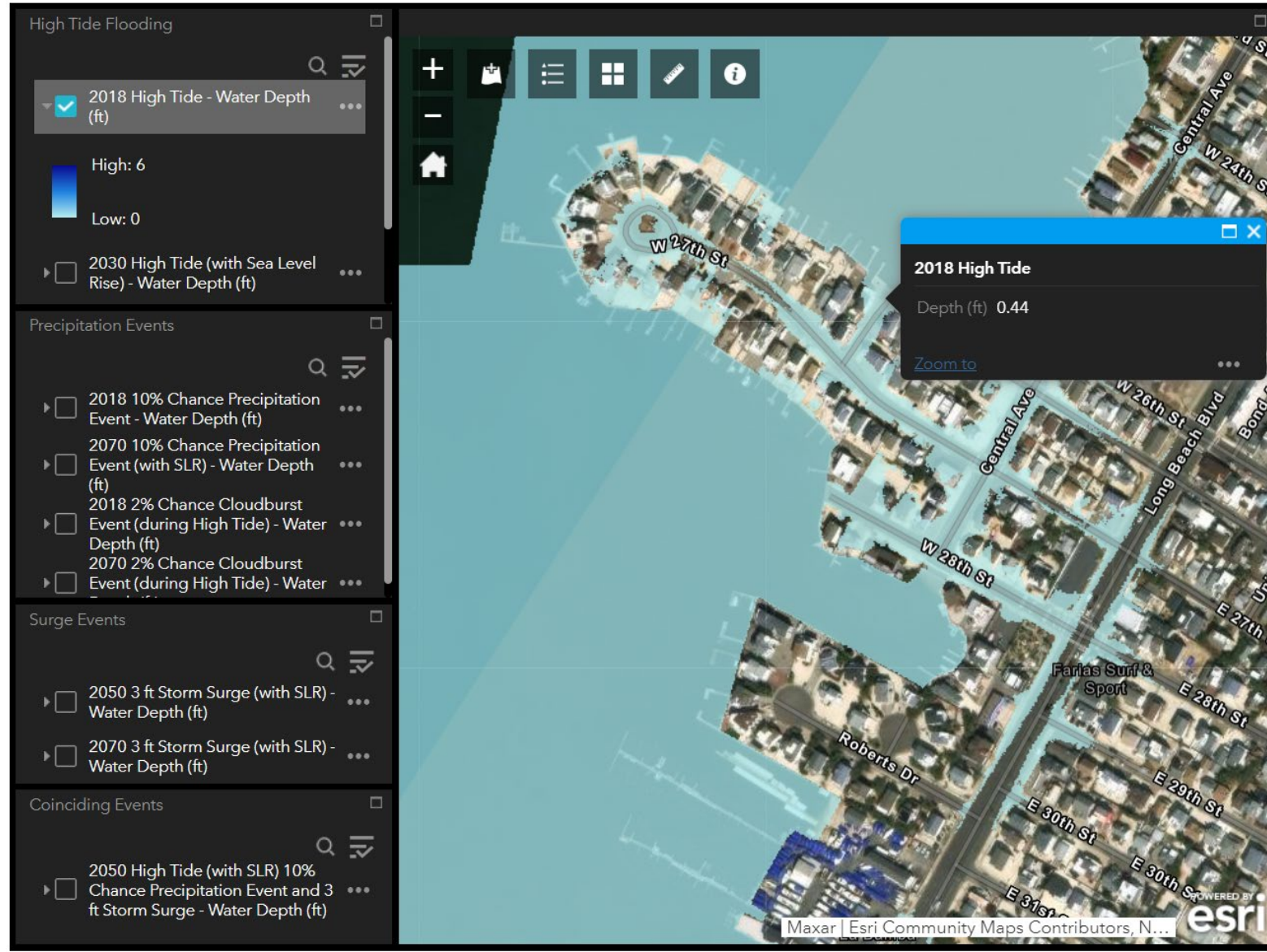
# Considering Design and Ordinance Guidance

Various levels of flood exposure

<https://resilient-nj-long-beach-island-rambollglobal.hub.arcgis.com/>

## High tide flooding - Present day

- Occasional flooding in roadways
- Some functional shoreline/bulkheads along residential edge
- Some lower residential edges are floodway path into the Borough Right-of-Way



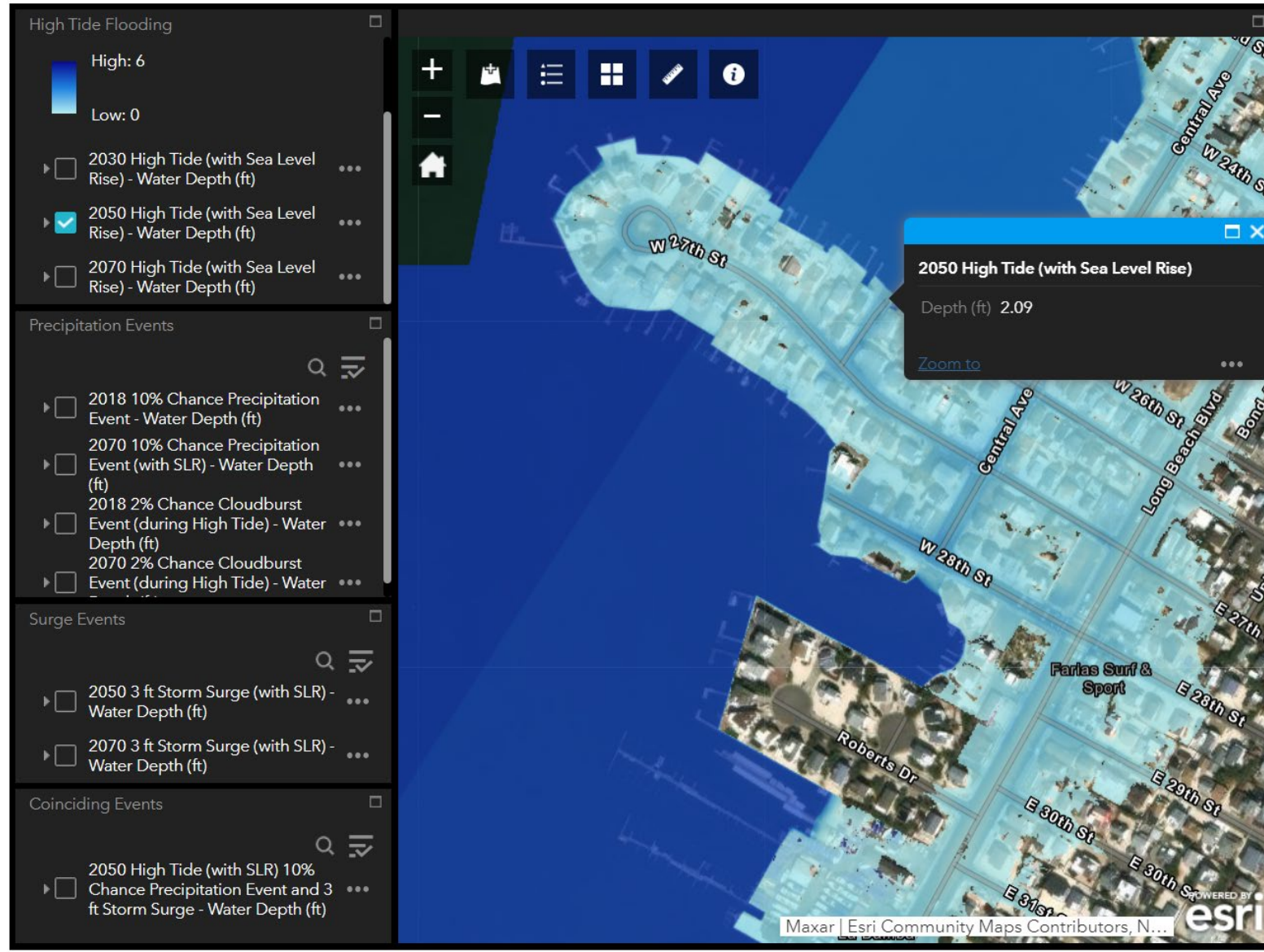
# Considering Design and Ordinance Guidance

Various levels of flood exposure

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## High tide flooding - Future (2050)

- Significant flooding in roadways (up to ~2.5' depth in some areas)
- Many residential edges are floodway path into the Borough Right-of-Ways





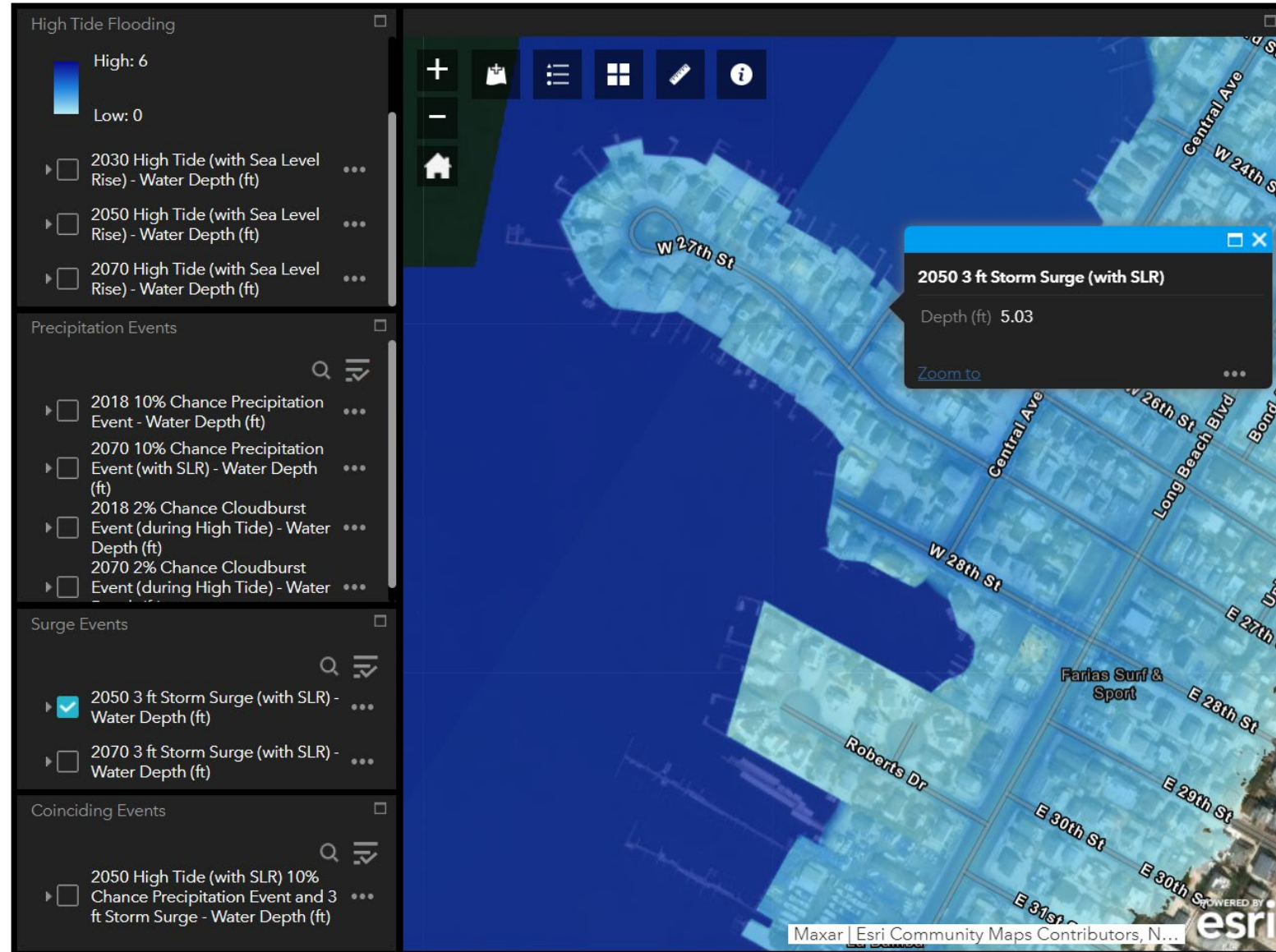
# Considering Design and Ordinance Guidance

Various levels of flood exposure

## 3 ft Storm Surge – Future (2050)

- Significant flooding in roadways (up to ~5.5' depth in some areas)
- Many residential edges are floodway path into the Borough Right-of-Ways

<https://resilient-nj-long-beach-island-rambollglobal.hub.arcgis.com/>



# Sunset Point Beach Shoreline

# Sunset Point Beach Shoreline Stabilization

- Where are the problematic areas?
- What are the Borough's goals?



Pavilion and boat ramp



Existing bulkhead



Wooden piles and park



Existing beach

# Next Steps

- Inclusion of Ship Bottom projects in Ocean County Hazard Mitigation Plan
- Coordination with Council
- Coordination with Planning Board
- Next Advisory Committee Meeting: Sept. 12<sup>th</sup>
- Recurring Project Meetings: Schedule for end of September?