

Coastal Climate Resilience

Hosted by the Ocean Park
Association and Southern
Maine Planning and
Development Commission

July 23, 2026



Agenda

1. Introductions
2. Understanding Coastal Climate Risks in Southern Maine
3. Coastal Resilience in Old Orchard Beach
4. Breakout Group Discussions
5. Closing and Next Steps

Southern Maine Planning & Development Commission

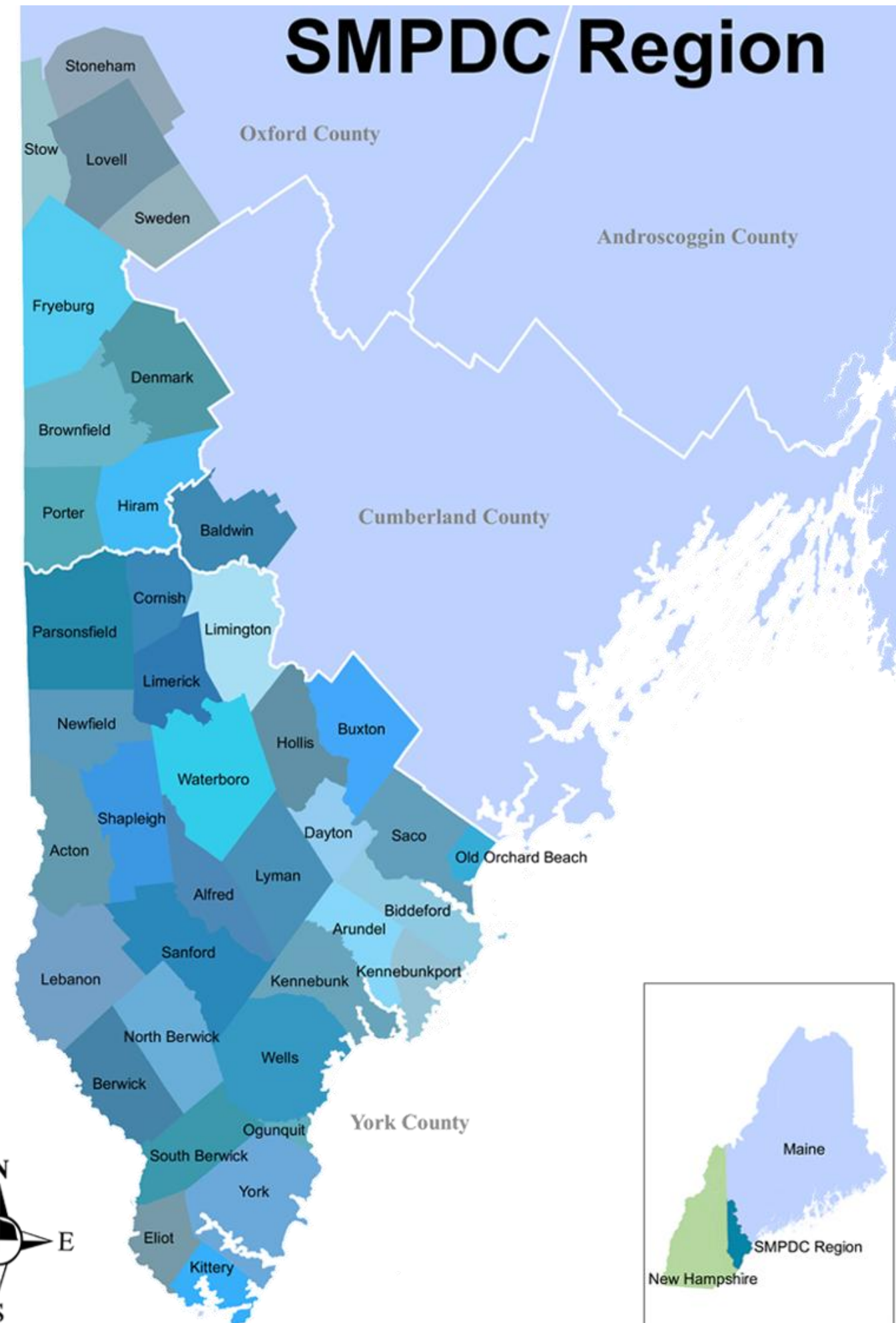


**Economic
Development**

Land Use

Transportation

**Sustainability &
Resilience**



Sustainability and Resilience

WHAT WE DO



**Coastal
Resilience
Planning**



**Climate
Action
Planning**



**GHG
Emissions
Accounting**



**Assessing
Climate
Impacts**



**Outreach &
Facilitation**



**Technical
Support**



**Data Analysis
& Research**



**Funding
Source
Identification**



**Project
Scoping**



Grant Writing



SMPDC's work with OOB

- **Comprehensive Plan Update**
- **Marsh Resilience Study engagement support**
- **Community Solar for municipal buildings**





Understanding Coastal Climate Risks

What is Coastal Resilience?

- Coastal resilience is the ability of coastal ecosystems and communities to prepare for and recover from flooding and other coastal hazards.
- January 2024 storms were estimated to cause \$90 M in damage to public infrastructure alone.



January 2024 Storm Recovery



What is Changing?

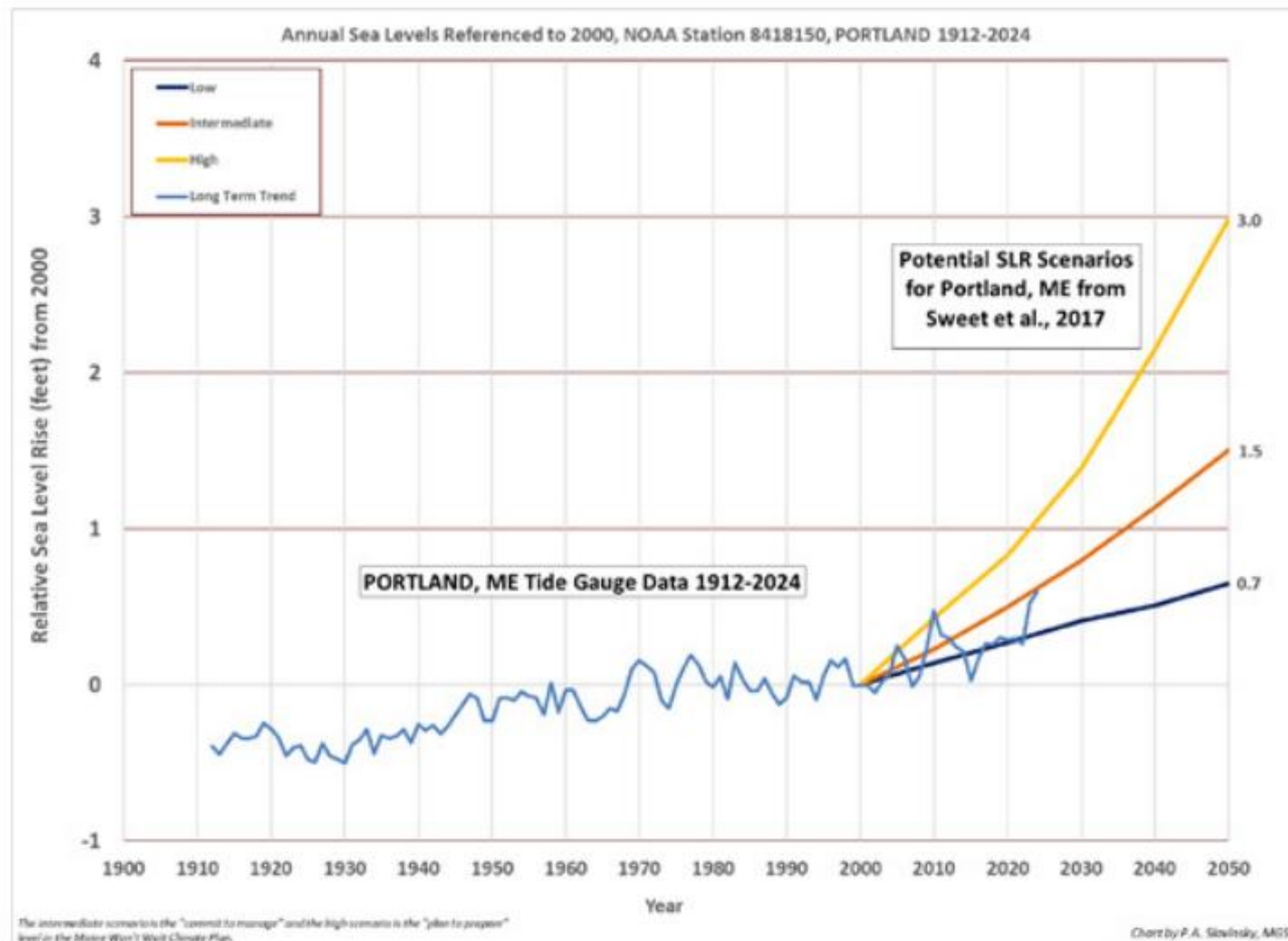


Figure 2: Historical trends in Maine's sea levels based on Portland tide-gauge data and projections of potential future sea-level rise scenarios.

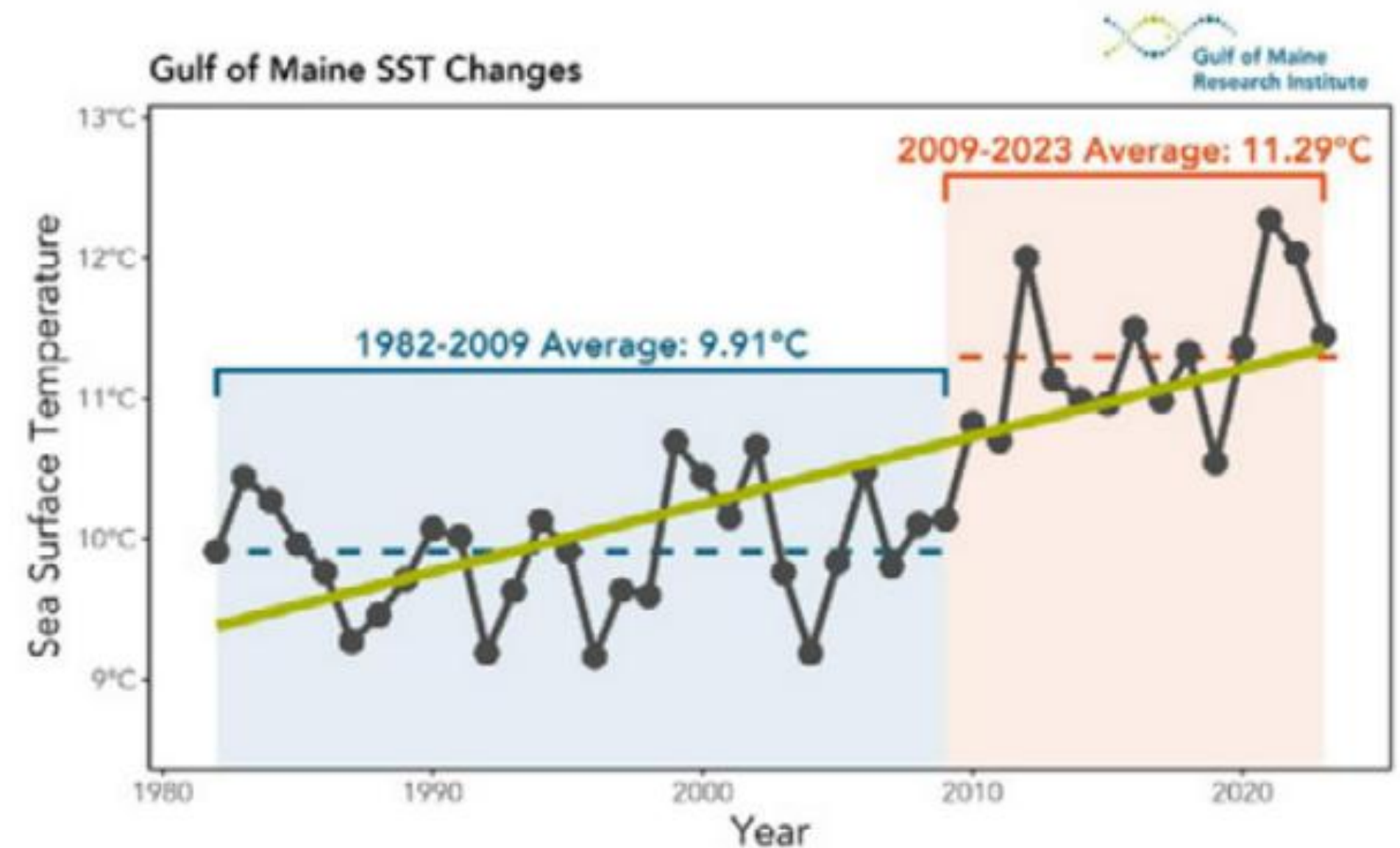
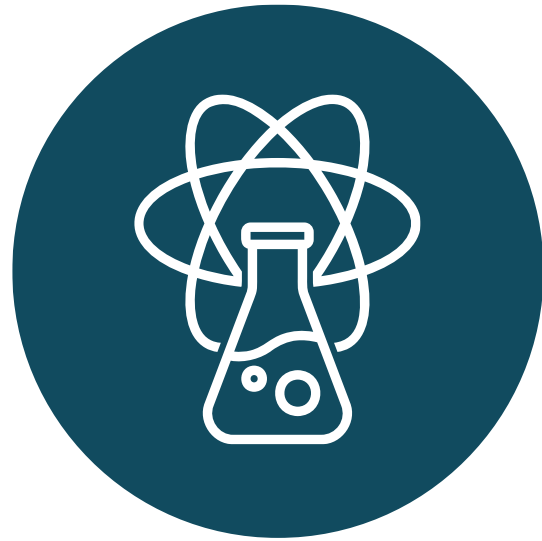


Figure 3: Gulf of Maine Sea Surface Temperature Changes Source: Gulf of Maine Research Institute

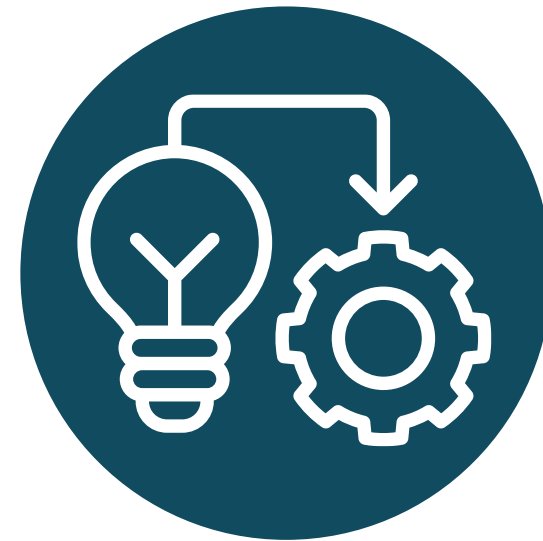
Communities Can Plan for Uncertainty

Science



Mapping

Community



Implementation



Planning

Regional Coastal Resilience Projects

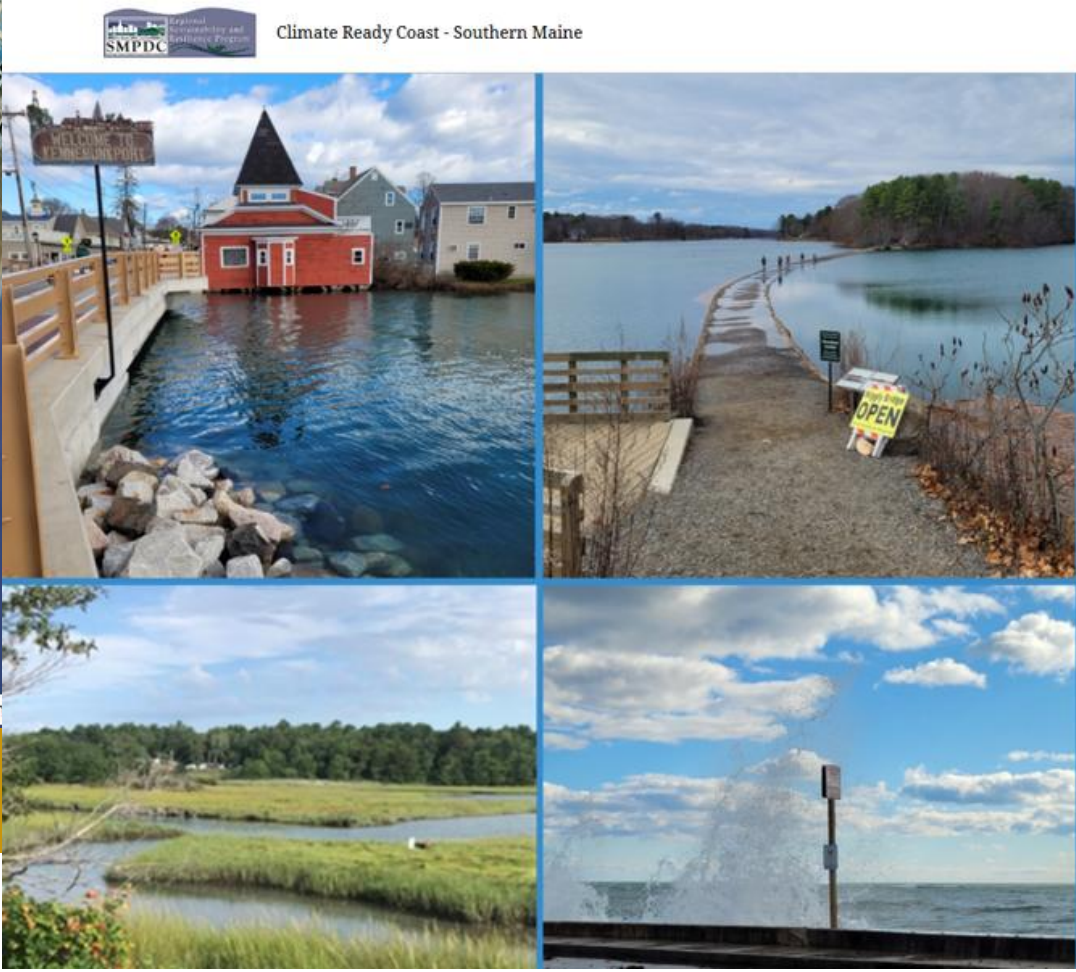
Climate Ready Coast – Southern Maine

- Regional project from 2021 – 2023.
- Funded by the National Fish & Wildlife Foundation National Coastal Resilience Fund.
- Vulnerability assessment of ten coastal municipalities from Scarborough to Kittery.

Coastal Climate Readiness in Southern Maine: Tools, Training, and Regional Capacity Building

- Regional project from 2026 – 2027.
Direct follow up to Climate Ready Coast.
- Funded by the Maine Coastal Program and NOAA.
- Updates and training on coastal resilience tools for the region.

Climate Ready Coast – Southern Maine



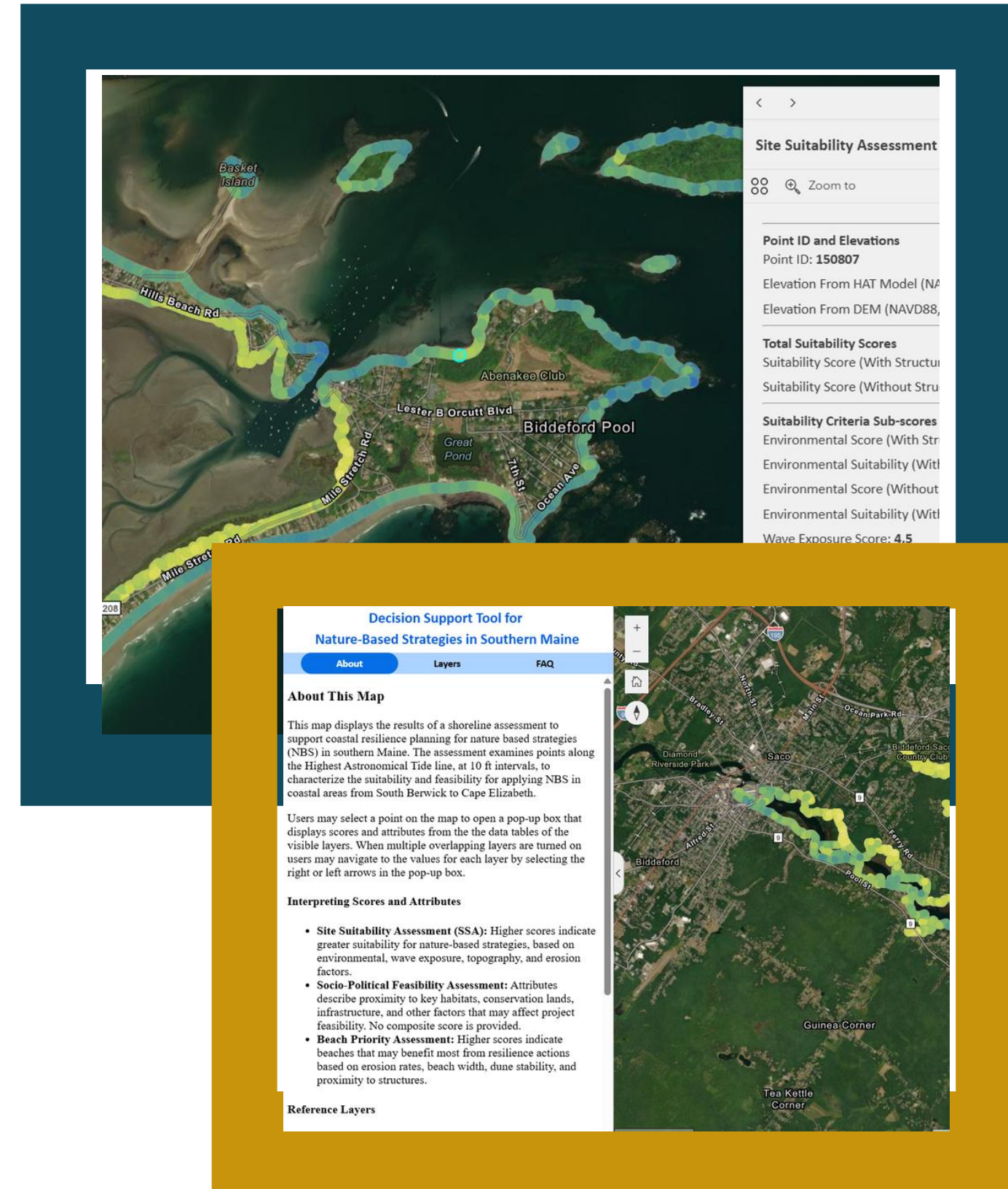
**Climate Ready Coast
- Southern Maine**

A Regional Coastal Resilience
Plan for Southern Maine

November 2023
July 18, 2023

Nature Based Strategy Decision Support Tool

- **Site Suitability Assessment** indicating relative suitability for nature-based strategies.
- **Socio-Political Feasibility Assessment** describing proximity to factors like conservation lands, infrastructure, etc. that may impact feasibility.
- **Beach Priority Assessment** identifying the beaches that would benefit most from nature based strategies.



Nature Based Strategy Decision Support Tool

Nature-Based Strategies in Southern Maine

About

Layers

FAQ

About This Map

This map displays the results of a shoreline assessment to support coastal resilience planning for nature based strategies (NBS) in southern Maine. The assessment examines points along the Highest Astronomical Tide line, at 10 ft intervals, to characterize the suitability and feasibility for applying NBS in coastal areas from South Berwick to Cape Elizabeth.

Users may select a point on the map to open a pop-up box that displays scores and attributes from the data tables of the visible layers. When multiple overlapping layers are turned on users may navigate to the values for each layer by selecting the right or left arrows in the pop-up box.

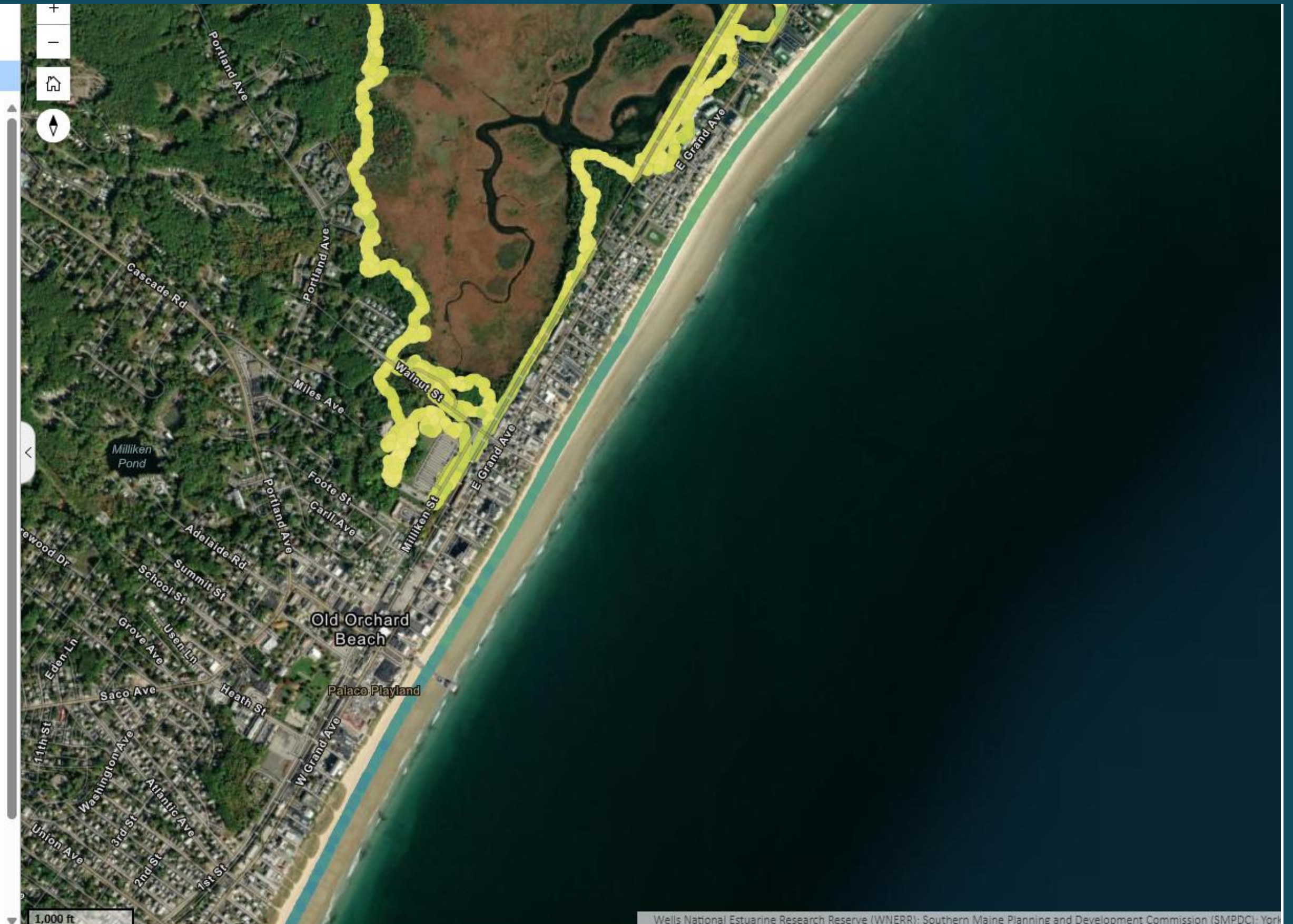
Interpreting Scores and Attributes

- **Site Suitability Assessment (SSA):** Higher scores indicate greater suitability for nature-based strategies, based on environmental, wave exposure, topography, and erosion factors.
- **Socio-Political Feasibility Assessment:** Attributes describe proximity to key habitats, conservation lands, infrastructure, and other factors that may affect project feasibility. No composite score is provided.
- **Beach Priority Assessment:** Higher scores indicate beaches that may benefit most from resilience actions based on erosion rates, beach width, dune stability, and proximity to structures.

Reference Layers

- **Parcel Boundaries:** Maine Parcels Organized Towns (Maine Office of GIS)
- **Sea Level Rise Scenarios:** Maine Sea Level Rise Storm Surge Scenarios 2018 (Maine Geological Survey)

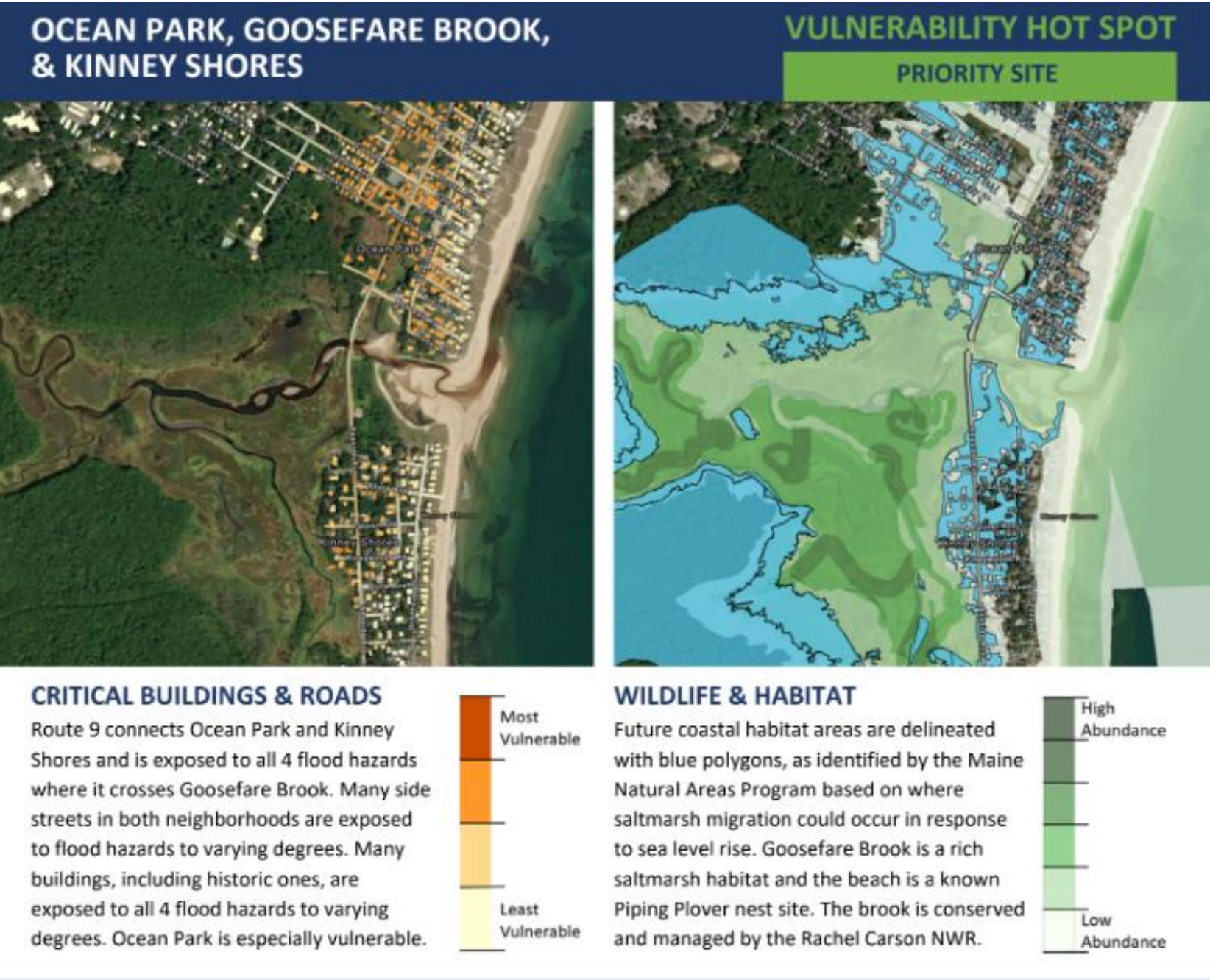
The development of this Decision Support Tool was directly informed by the [Climate Ready Coast – Southern Maine](#) project, a regional planning initiative focused on enhancing coastal resilience across ten communities. During stakeholder workshops and interviews, participants identified a critical need





Coastal Resilience in OOB

Goosefare Brook, Ocean Park, and Kinney Shores – Climate Ready Coast

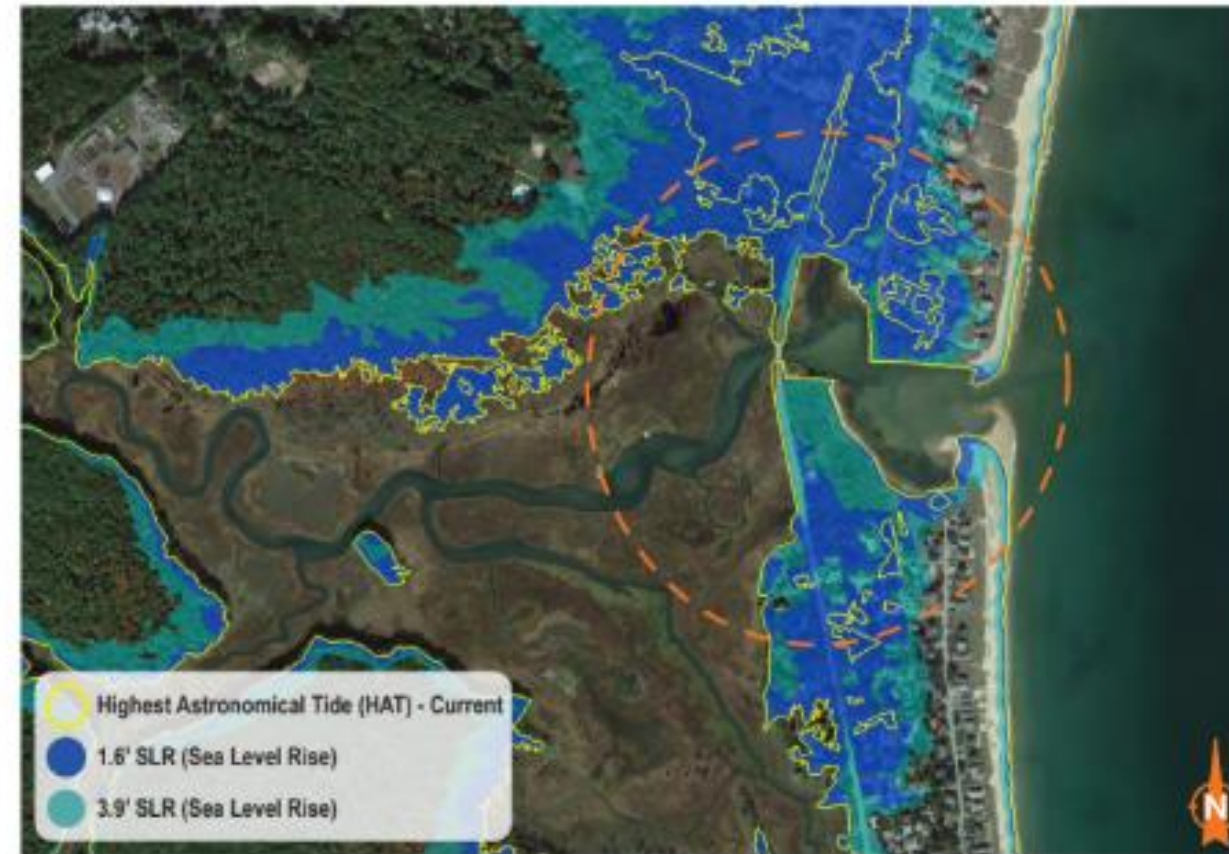


VULNERABILITY ASSESSMENT RESULTS

This section highlights the vulnerability assessment scores of some key features that are exposed to coastal flood hazards in southern Maine. The relative vulnerability scores for these and other features were used to help identify vulnerability hot spots throughout the region. *For an explanation of the vulnerability assessment scores check out the: [Regional Vulnerability and Exposure Analysis Mapping Tool Reference Document](#)*

BUILT ENVIRONMENT	VULNERABILITY	SCORE	EXPLANATION
Coastal Hazards	Very High	4 out of 4	The neighborhoods on either side of Goosefare Brook are exposed to the FEMA floodplain and the low-lying areas are exposed to all four flood hazards.
Infrastructure - Roads	Very High	16 out of 32	Route 9, which connects Ocean Park and Kinney Shores, is exposed to all four flood hazards. Numerous side roads off Route 9 are also exposed to varying degrees.
Infrastructure - Crossings & Dams	Very High	16 out of 20	Route 9 tidal crossing over Goosefare Brook is exposed to all four flood hazards.
Infrastructure - Building Footprints	High	4 out of 8	Many buildings (including some historic ones) are exposed all four flood hazards to varying degrees especially in Ocean Park.
Social Vulnerability Index (SVI)	Medium	0.38	Older population, older residents living alone, and higher disability rate.
NATURAL ENVIRONMENT	ABUNDANCE	SCORE	EXPLANATION
Wildlife & Habitat	High	28 out of 32	Habitat types include saltmarsh, riverine, and bird habitat (Piping Plover nesting site).

Goosefare Brook, Ocean Park, and Kinney Shores – Climate Ready Coast



Visualization: Potential Adaptation Strategies for a Climate Ready Coast

Ocean Park – Goosefare Brook – Kinney Shores Beach (Old Orchard Beach & Saco)

Note: These conceptual visualizations are illustrative examples of possible coastal adaptation strategies; they are not engineered designs and are not conveying strategies that should be used at the site. Strategies shown are only a potential set of possible adaptation measures, other strategies from the Coastal Adaptation Strategy Matrix could be applicable and may be included in visualizations of other priority sites. Please reference the Matrix and other priority site visualizations for further information. Please note that the sea level rise conditions depicted in these visualizations reflect changes that will happen over time.



VULNERABILITY ASSESSMENT RESULTS

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BUILT ENVIRONMENT	VULNERABILITY	SCORE	EXPLANATION
Coastal Hazards	Very High	4 out of 4	Much of this area is within the FEMA floodplain. The backside of the barrier beach is exposed to 3.9 ft of sea level rise (SLR) and 1.6 ft of SLR in some places.
Infrastructure - Roads	Medium	4 out of 32	East Grand Ave is exposed to flooding from the 1% annual chance event and 3.9 ft of SLR. Walnut St is exposed to all 4 flood hazards.
Infrastructure - Crossings & Dams	Very High	15 out of 20	The railroad is within the FEMA floodplain and is exposed to 3.9 ft of SLR. Walnut St crossing is exposed to all 4 flood hazards.
Infrastructure - Building Footprints	High	4 out of 8	Residential & commercial buildings are within the FEMA floodplain and vulnerable to 3.9 ft of SLR.
Social Vulnerability Index (SVI)	Low	0.12	Social vulnerability is low compared to other coastal communities.
NATURAL ENVIRONMENT	ABUNDANCE	SCORE	EXPLANATION
Wildlife & Habitat	High	28 out of 32	Habitat types include beach, dune, saltmarsh, eelgrass, shellfish beds, and wetlands.

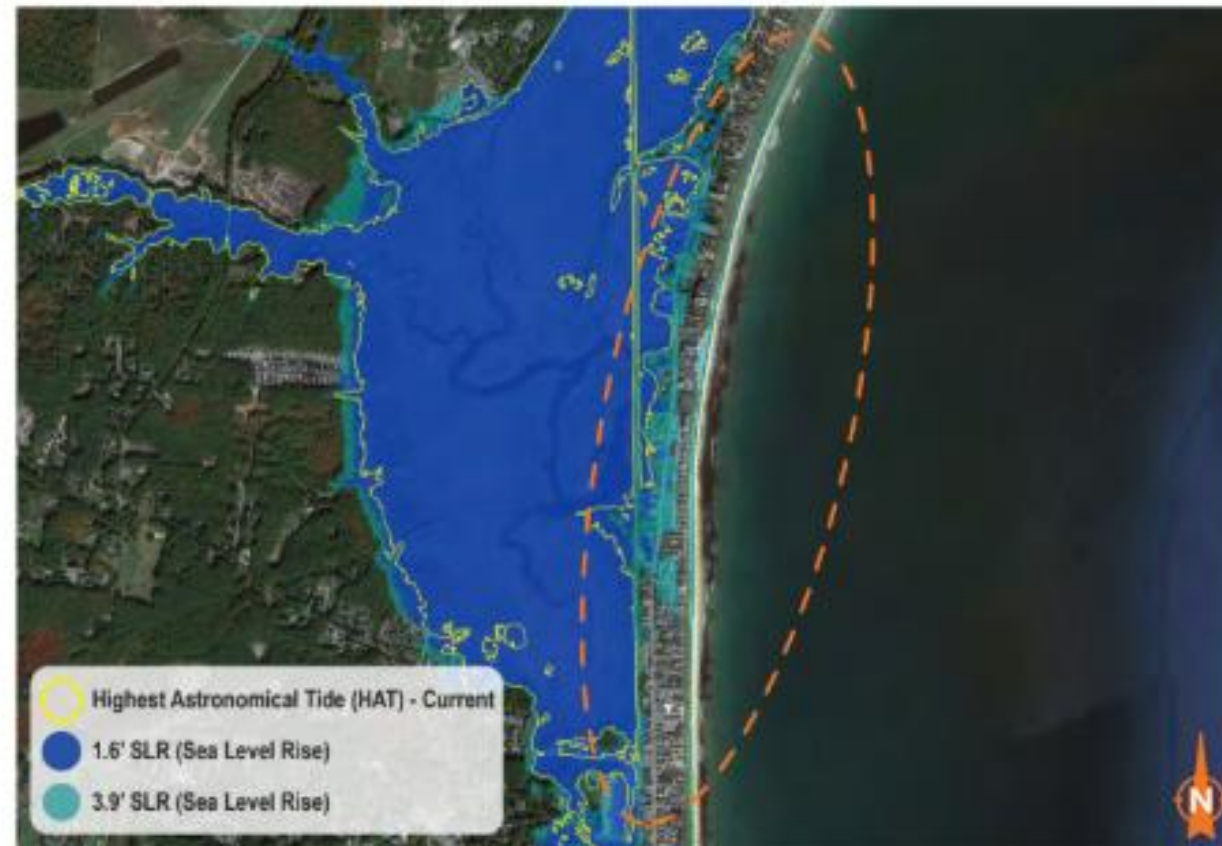
East Grand Ave and Beach – Climate Ready Coast



The Surfside neighborhood is built on the barrier beach. The Scarborough Marsh abuts the backside of the barrier beach. The seaward area is exposed to flooding from the 1% annual chance event, and Surfside Beach is exposed to all four flood hazards. Low-lying areas on the backside of the barrier beach are exposed to 1.6 ft and 3.9 ft of sea level rise (SLR) and are located within the FEMA floodplain.

- Highest Astronomical Tide (HAT)
- HAT +1.6 ft sea level rise
- HAT +3.9 ft sea level rise
- FEMA Floodplain (1% annual chance event)

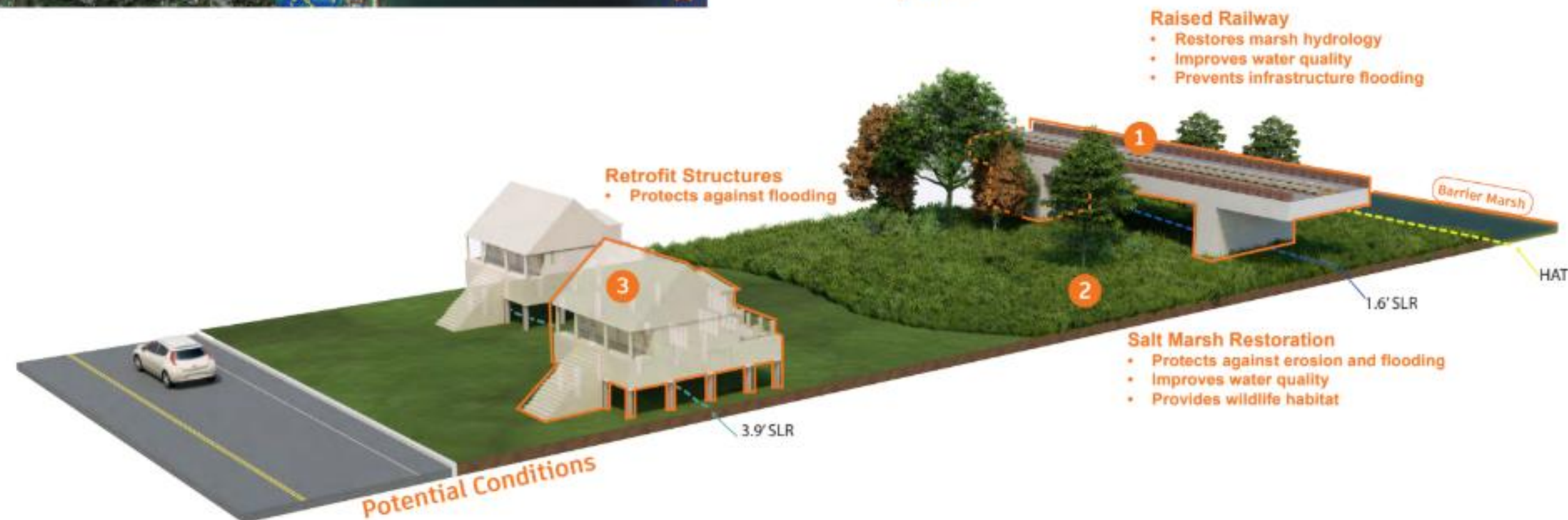
East Grand Ave and Beach – Climate Ready Coast



Visualization: Potential Adaptation Strategies for a Climate Ready Coast

East Grand Avenue and Beaches (Scarborough & Old Orchard Beach)

Note: These conceptual visualizations are illustrative examples of possible coastal adaptation strategies; they are not engineered designs and are not conveying strategies that should be used at the site. Strategies shown are only a potential set of possible adaptation measures; other strategies from the Coastal Adaptation Strategy Matrix could be applicable and may be included in visualizations of other priority sites. Please reference the Matrix and other priority site visualizations for further information. Please note that the sea level rise conditions depicted in these visualizations reflect changes that will happen over time.



Milliken Street Neighborhood – Climate Ready Coast

[Project Overview](#)[Priority Vulnerable Areas & Ad...](#)[Vulnerability Hot Spots](#)[Coastal Adaptation Strategies](#)[Funding for Coastal Resilience](#)[Future Needs: Information & In...](#)[← Back](#)[30 / 35](#)

Milliken Street Neighborhood - Mill Brook (Old Orchard Beach)

This site is located around the Walnut and Milliken Street neighborhoods in Old Orchard Beach near the municipal parking area, and along East Grand Beach. This site is linked to the Pine Point Road vulnerability area in Scarborough via East Grand Avenue. Downstream tidal crossings and roads restrict tidal flow and future upgrades may result in increased tidal flooding that would impact this hotspot. Portland and Saco Avenue are evacuation routes.



Marsh Resiliency Study

- West Grand Marsh Resiliency Study, conducted by Wright-Pierce engineers.
- Data collection on water elevations and salinity, plus public input.
- Finished in December 2025.



Marsh Resiliency Study – Recommendations

- Continued monitoring at the site.
- Adjustments to the Self-Regulating Tide Gate protocol.
- Stormwater improvements.
- Future considerations or possible projects:
 - Raise low lying roads adjacent to marsh.
 - Evaluate/replace culverts as needed.
 - Raise private infrastructure adjacent to marsh.
 - Consider ordinance changes for floodplain management.



Photo: Wright-Pierce

What Can Communities Do?

Protect

- Dune restoration
- Marsh restoration and conservation
- Beach management, nourishment, and protection



Adapt

- Make roadways more resilient to flooding
- Upgrade stormwater systems
- Building protection from hazards



Plan

- Land use planning
- Capital planning
- Emergency preparedness





Breakout Group Discussion

Group Discussion

1. Have you seen changes in the coastal environment in your time in OOB?
What are they?
1. What do you think are the highest priorities (assets, areas etc.) for resilience in OOB/Ocean Park?
1. What information would help you be more aware of coastal resilience planning in OOB?
1. After hearing this presentation, what opportunities or concerns do you see or have?

Thank you!

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