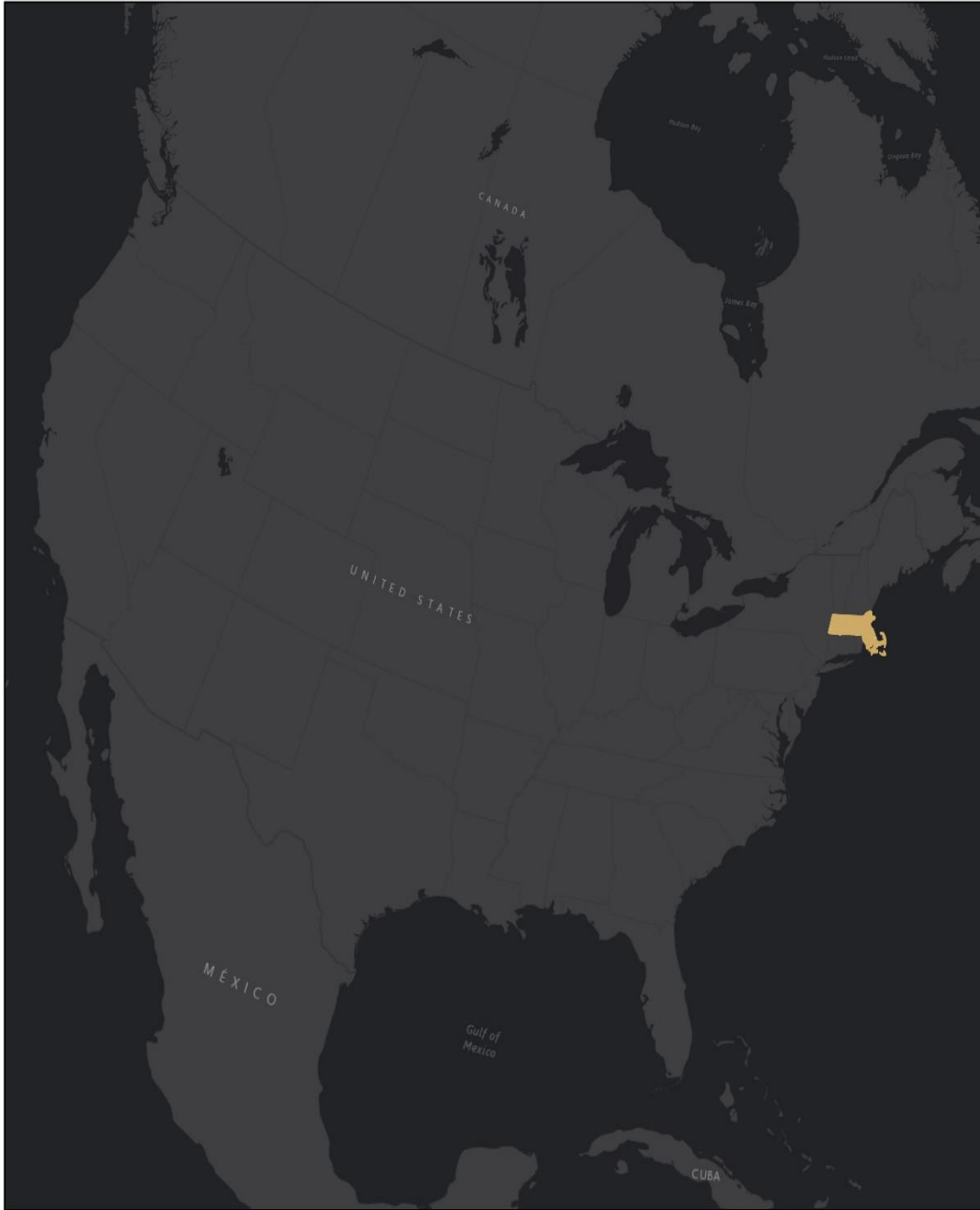


Metropolitan Beaches Commission
Hearing on Climate Resiliency

July 11, 2023

Christian Krahforst
Director, Climate Adaptation and Conservation
Town of Hull



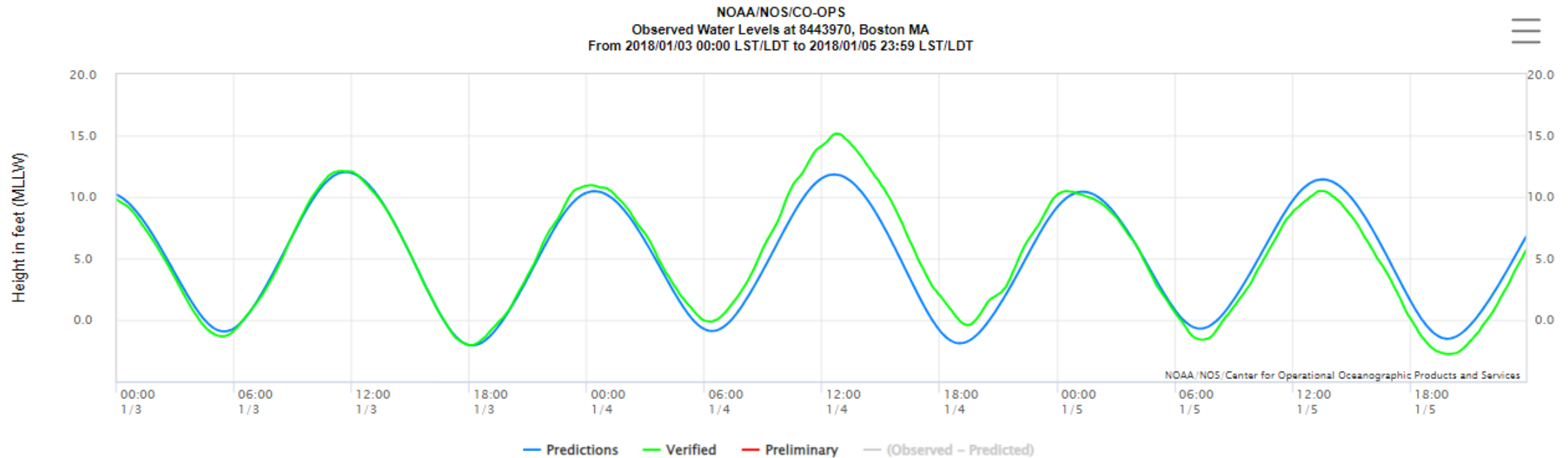


Jan. 04,
2018

Newport
Road, Hull



Highest water level recorded in Boston Harbor: January 4th 2018



January 28, 2022



North Nantasket Beach Resilience

Dune Improvement Project for the Town of Hull, MA



Project Area



Northern 2 miles of coastline
Phipps Street – X Street

Existing Conditions

Dune Crossings

January 2019 Inventory

- 69 Crossings
- 32 (46%) Permitted, Town-Maintained
- ✘ 37 (54%) Non-Permitted Crossings



Permitted Town-maintained crossing

Non-permitted crossing

Disability accessible crossing

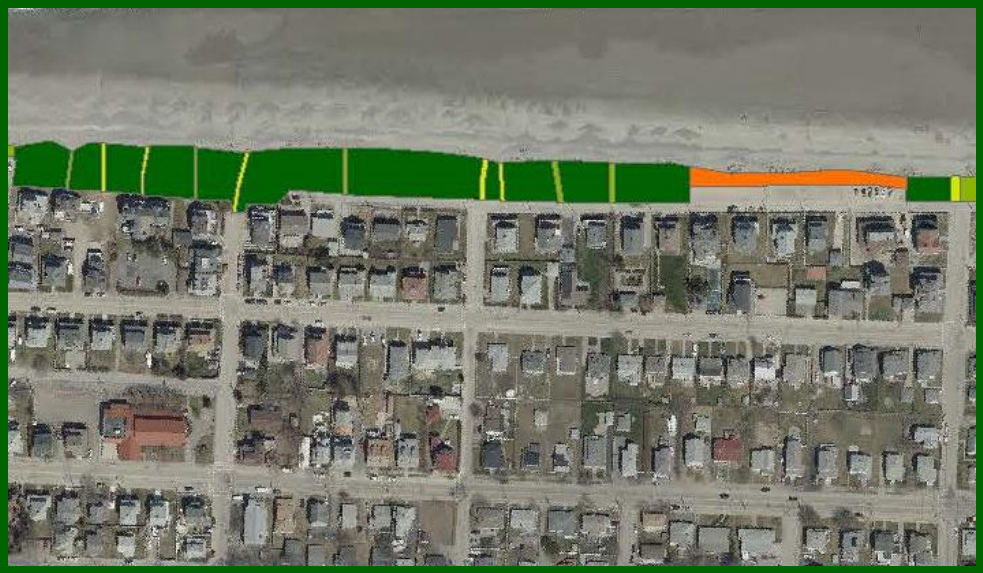


Existing Dune Protection

Coburn – Lewis Streets



Lewis Street

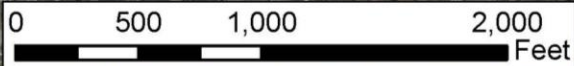


Dune Crossing Types

ProtLevel	Color	Return Period
2-yr	Red	2-yr
5-yr	Orange	5-yr
10-yr	Light Orange	10-yr
15-yr	Yellow	15-yr
25-yr	Light Green	25-yr
35-yr	Medium Green	35-yr
40-yr	Dark Green	40-yr
50-yr	Very Dark Green	50-yr



Data source: Town of Hull
 2011 LiDAR for the Northeast NAD 1983 Datum, NOAA CSC
 Boston Harbor Flood Risk Model, MassDOT
 Aerial imagery: ESRI, DigitalGlobe, GeoEye 2010





Area along the primary frontal dune used for parking and access for many decades. Photo to right shows dune restored and re-vegetated

Funded, in part, by CZM Coastal Resilience Grant Program FY20 and 21

Large-Scale Beach & Dune Nourishment Planning



Is adaptation planning on a neighborhood scale effective management?

The Hampton Circle Area Project:

[Hull Climate Adaptation Roadmap:
Hampton Circle Area | Hull MA](#)



Funded, in part, by the
Municipal Vulnerability
Preparedness program

Thank you!

Big Questions



What's the Town's responsibility versus the responsibility of private property owners, given the constrained land mass and projected sea level rise in Hull?

How can the Town help residents maintain livability in the near-term while beginning conversations about eventual retreat a few years down the road?

Why a Climate Adaptation Roadmap



- Past flood events have impacted the neighborhood
- Future flood projections indicate high vulnerability for this area
- “Everyday flooding” due to tides is likely

What

A roadmap that is not a single option but a set of adaptation alternatives for the community to explore together



January 28, 2022 Event

Hull and Sea Level Rise



Future flood projections

Toggle between the three options on the right to see how annual chance and depth of flooding change with the three different sea level rise scenarios.

1.2ft sea level rise

2.4ft sea level rise

4.2ft sea level rise

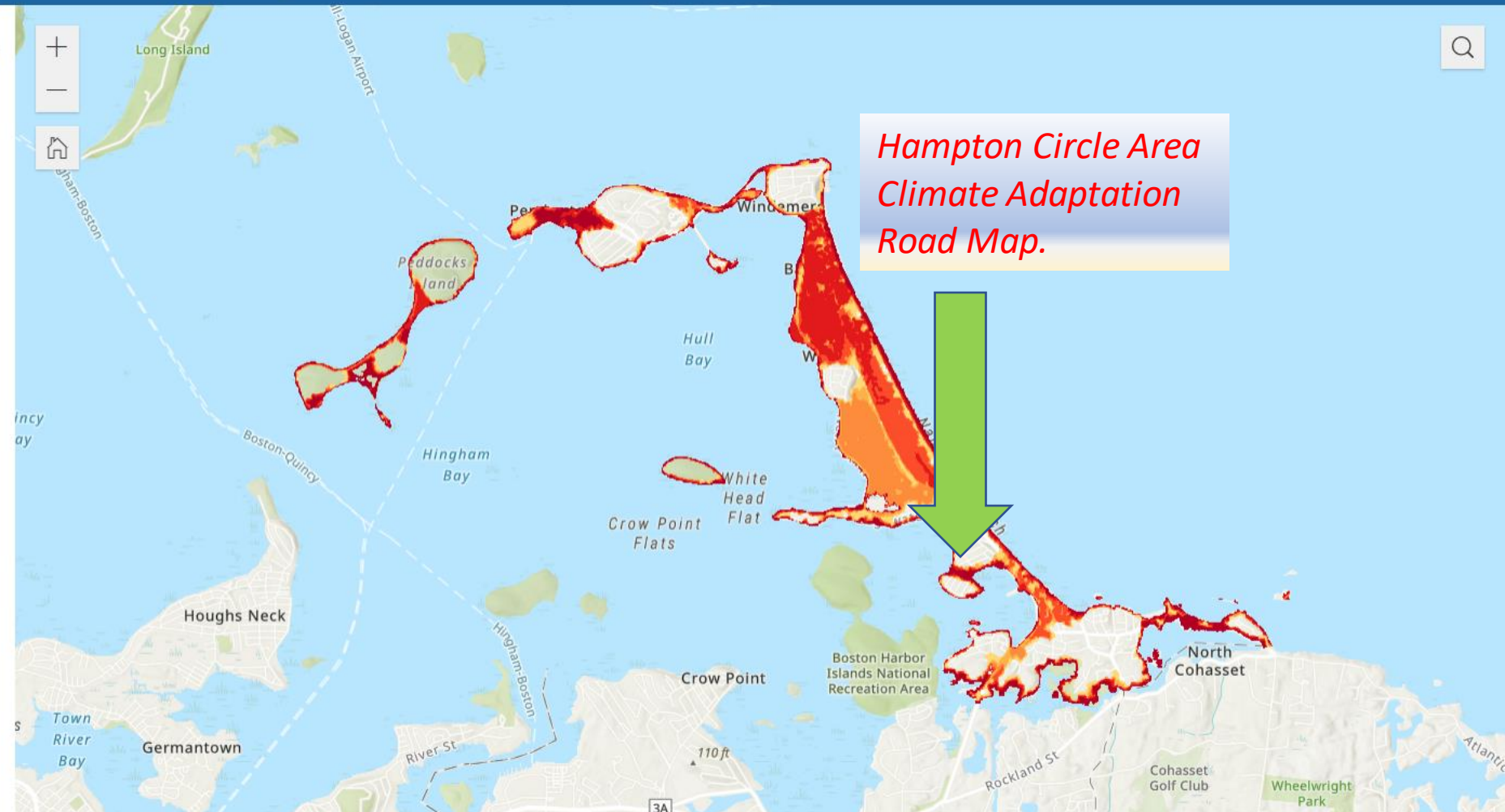
1.2 feet sea level rise

Turn on / off layers below to switch between viewing annual chance of flooding and depth of flooding.

- Annual chance of flooding, 1.2 feet sea level rise scenario ...
- Depth of flooding for 1% chance storm, 1.2 feet sea level rise scenario ...

Annual chance of flooding, 1.2 feet sea level rise scenario

- <1% annual chance of flooding
- 1 - 5% annual chance of flooding
- 5 - 10% annual chance of flooding
- 10 - 20% annual chance of flooding
- 20 - 50% annual chance of flooding
- > 50% annual chance of flooding



*Hampton Circle Area
Climate Adaptation
Road Map.*

What we heard



I'm worried my house won't assess for what I paid. How do the buyout programs assess value considering competitive market?

*Hampton Circle Resident,
Focus Group*

We need to take action now. We need immediate actions that are really specific, implementable, and impactful... with flexibility for the future.

*Hampton Circle Resident, Focus
Group*

I evaluate every 5 years whether or not to sell or stay going forward. In the meantime, I make sure that the house is functional – appliances, roof, generator, are all secure from flooding and storms.

*Hampton Circle Resident, Focus
Group*



Careful how you share your message.

What does this photo mean to folks trying to understand Sea Level Rise *projections*?

What does the water level shown at 2050 mean?

Translating is critical



Coastal Resilience Program



MVP

Municipal Vulnerability Preparedness