



**City of Biddeford
City Council**

December 10, 2024 at 5:30 PM
City Hall Council Chambers & Zoom

[Click to Join Zoom Meeting Online](#)

Or call in by phone: +1 312 626 6799

Meeting ID: 939 0499 8894

Passcode: 412810

1. Roll Call
2. Pledge of Allegiance
3. Adjustment(s) to Agenda
4. Presentation
 - 4.a Citizen Input regarding the search for the next City Manager
5. Public Addressing the Council
(3 minute limit per speaker)
6. Discussion Coastal Resilience - Futureproofing Biddeford's Beaches
 - 6.a Introduction by Kim Matthews, Biddeford Coastal Preservation Coalition
 - 6.b Current State of Beaches and Dunes by Will Kochtitsky, UNE
 - 6.c Preparing for the 2025 Storm Season - by Code Enforcement Office
 - 6.d Forward Planning/Beach Management Program/Beach Replenishment by Art Cleaves of York County EMA
7. Adjourn

Biddeford has experienced significant growth and change over the past decade. **Where would you like to see the community go next, and what qualities in a leader do you feel are most critical to move us in this direction?** As we seek our next City Manager, Mayor Marty Grohman and the City Council invite Biddeford residents to look to the future and share their answers to these questions at the December 10 City Council Workshop.

The public comment period will begin after a brief update from Mayor Grohman on the status of the search for the next City Manager and will conclude by 6:30 p.m. Each member of the public will be able to address the Council for a maximum of three minutes. An online option for feedback is available on [Our Biddeford, our public engagement portal](#).

Mayor Grohman and the Council are also currently seeking residents who are interested in serving on an interview panel as part of the hiring process. Members of the interview panel will have the opportunity to review resumes and determine the candidates to be interviewed. If you wish to serve on the panel, please submit your name and contact information to the Executive Assistant, [Shelly MacNeill](#), by Friday, December 27.

Coastal Resilience Workshop Memorandum

Meeting Date: December 10, 2024
Meeting Time: 6:30PM
To: City Council
Submitted By: Kimberly Matthews on behalf of Biddeford Coastal Preservation Coalition (BPCP)

Supporting Materials/Documentation:

- Climate Ready Coast- Southern Maine
- Biddeford Vulnerability Assessment, 2023
- 2023 Biddeford Comprehensive Plan
- 2023 Biddeford Climate Action Plan
- City of Biddeford: 2022.85 Council Resolution, signed 10/4/22

Executive Summary:

The Biddeford Coastal Preservation Coalition (BCPC) fully supports the Biddeford Climate Action Plan and its vision for a sustainable, climate-resilient future. However, we respectfully request that a comprehensive **Coastal/Beach Management Program** be added to the Climate Action Plan and funded as soon as possible.

As you know, the Biddeford coastline plays a crucial role in our community, both ecologically and economically. Given the increasing challenges posed by climate change, including rising sea levels, storm surges, and coastal erosion, it is essential that we address the unique needs of our coastal areas within the broader climate action framework.

We will further elaborate on the need for a dedicated and comprehensive Coastal/Beach Management Program during the upcoming Coastal Workshop on December 10. In that session, we will outline the critical climate resiliency and adaptation needs of Biddeford's coastal communities and present actionable recommendations to safeguard our natural resources and infrastructure.

Additionally, we will provide a brief overview regarding council resolution 2022.85 and the Section 111/Camp Ellis project and request City Council support as an abutter and south side jetty owner.

We look forward to continuing our collaboration with the City to ensure that Biddeford remains a resilient and thriving community for future generations.

Detailed Review, *please see appendices:*

Appendix A: 2022.86 Council Resolution

Appendix B: SMPDC Priority vulnerable ‘Hot Spots’ for Biddeford: Fortunes Rock/Biddeford Pool & Biddeford/Saco Downtown

Appendix C: SMPDC Highly vulnerable areas for Biddeford: Granite Point Road & Hills Beach Road

Appendix D: 2023 Comprehensive Plan, Excerpts supporting coastal resiliency efforts

Appendix E: BCPC Fully Supports the Climate Action Plan, especially excerpts listed

Appendix F: Biddeford Coastal Preservation Coalition (BCPC) Mission Statement

Appendix G: BCPC Operational Structure

Key Terms:

- **Coastal Resiliency:** Building the capability of a community to anticipate, prepare, respond and recover from hazardous events such as a coastal storm or flooding
- **Coastal Sustainability:** Managing flood and erosion risks where possible and/or relocating to safe areas
- **King Tide:** Non-scientific term to explain exceptionally high tide or Astronomically High Tide during new or full moon. Gravitational pull of the moon, sun and Earth, which occurs approximately 2 times per year
- **Storm Surge:** An abnormal rise of water generated by a storm, over and above astronomical tides.
- **Living Shoreline:** Using plants, reefs, sand and natural barriers to reduce erosion and flooding while mainlining natural shoreline processes
- **Coastal/Beach Management Plan (C/BMP)** involves strategies, policies and actions designed to protect and preserve coastal areas and it plays a crucial role in preventing erosion.

- A cohesive Coastal Management Plan includes strategies to defend against flooding and erosion, and techniques that stop erosion to claim lands.
- **Coastal erosion** is shoreline recession due to erosion by wave and tidal forces resulting in a permanent loss of land.
- **Accretion** is the natural build-up of coastal landforms with sediment supplied by wave, tidal flow or wind processes, usually assisted by vegetation trapping the sediment

APPENDICES

Appendix A: 2022.85 Council Resolution



2022.85

IN BOARD OF CITY COUNCIL...OCTOBER 4, 2022

A Resolution of the Biddeford City Council

WHEREAS, the Biddeford City Council has adopted the Climate Action Plan and is working towards adopting climate action items to improve coastal resiliency in the wake of changing weather patterns; and

WHEREAS, The City of Biddeford intends to include coastal resiliency action items in Biddeford's Climate Action Plan; and

WHEREAS, the Hills Beach and Biddeford Pool communities are experiencing significant erosion impacts from coastal storms at an increased frequency; and

WHEREAS, the south side jetty at the mouth of the Saco River is in poor condition and requires immediate attention and maintenance by USACE; and

WHEREAS, the north side jetty at the mouth of the Saco River received significant resources from state and federal agencies to study its impact on Camp Ellis's erosion challenges; and

WHEREAS, the south side jetty has not received similar federal attention or study to determine its impact on the Hills Beach and Biddeford Pool communities; and

WHEREAS, the Biddeford City Council only has access to limited federal studies and believes utilizing the results of private studies alone to define the south jetty impacts and coastal erosion mitigation plans without peer review is not an appropriate basis for decision-making; and

WHEREAS, the sharing of pertinent information identified in existing and future studies within a consolidated assessment report may provide the City Council and assigned committees as well as property owners with key information needed to make informed municipal and homeowner-level coastal resilience decisions to reduce erosion impacts; and

WHEREAS, USACE has the obligation and technical and financial resources to coordinate such activities needed to fully restore the south side jetty;

Overview 2022.85 Council Resolution

NOW THEREFORE, BE IT RESOLVED, that the Biddeford City Council resolves to support a south jetty study and repair project and address the impacts of climate change at Hills Beach and Biddeford Pool through the following seven actions:

1. Consider the results of public and private studies to define erosion mitigation plans; and
2. Evaluate and consider providing support to the Hills Beach and Biddeford Pool communities with staff resources needed to shepherd this project through to completion; and
3. Consider participating in Biddeford Coastal Preservation's Coastal Process Analysis and Adaptation Alternatives study as a stakeholder with local financial resources to help cost share the study at a future date once the scope and funding level is known; and
4. Serve as a clearing house to share pertinent information such studies may provide to the public so that property owners may make informed coastal resilience decisions to reduce erosion impacts on their properties; and
5. Include appropriate coastal resiliency action items in Biddeford's Climate Action Plan; and
6. Immediately request USACE to survey and outline a maintenance plan and schedule to fully restore the south side jetty; and
7. Immediately request USACE to initiate and fund a study of the potential erosion impacts of the south side jetty on the Hills Beach and Biddeford Pool communities; and
8. Request USACE consider the results of available and appropriate public and private Hills Beach and Biddeford Pool surveys and studies in its study of the potential erosion impacts of the south side jetty to create a central report on erosion mitigation options for the study area.

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Appendix B: SMPDC Priority 'Hot Spots' Profile Sheets & Adaptation Renderings

Fotunes Rocks Beach & Biddeford Pool

https://drive.google.com/file/d/1B6nbJZeNJNO2fH31PFb_SMNmuwEr6fd-/view

https://drive.google.com/file/d/1Jl-J_5dXDNzjuk0cNVukyVjJwhf5BNm1/view

Appendix C: SMPDC High Vulnerability

Granite Point:

<https://storymaps.arcgis.com/stories/4b1a578fa6f84e8b83593c17d9c824aa>

Hills Beach:

<https://storymaps.arcgis.com/stories/4b1a578fa6f84e8b83593c17d9c824aa>

Appendix D: 2023 Comprehensive Plan Excerpts supporting need for Coastal Resiliency

Climate Change and Sea Level Rise, page 11-11

Biddeford's public infrastructure is uniquely vulnerable to the Impacts of sea level rise and other climate change impacts such as storm surges, flooding and increasingly frequent severe weather events. In particular, the city's water treatment and stormwater infrastructure has the potential to be damaged or overburdened by increasingly strong storms and sea level rise. Understanding the needs and challenges posed by sea level rise is an ongoing process. In coming years, the City will work collaboratively with Southern Maine Planning and Development Commission, as well as state partners to better understand the vulnerabilities facing Biddeford's public infrastructure and develop a framework for investment and adaptation to anticipated future climate-related challenges.

Section 13-1

As defined in the Climate Change chapter, Biddeford's coastline is facing severe consequences of sea level rise and the rapid warming of the Gulf of Maine. Because storms tend to intensify over warm water, Maine is experiencing an increase in the severity and impacts of coastal storms. But it's not only the coastline that is potentially vulnerable. Heavy rainfall across the state impacts the Saco River, making our community more vulnerable to flooding and catastrophic impacts to municipal infrastructure. Some of our most treasured community assets, our beaches, parks, estuaries and water access points, and important, life-sustaining infrastructure, our water and wastewater and transportation infrastructure, are our most vulnerable.

Challenges and Opportunities, section 13-4

Biddeford has been actively engaged in coastal water quality monitoring, water pollution planning, restoration of the clam flats, protecting water dependent uses, addressing land-use conflicts, reviewing land use zoning for working waterfronts, participating in regional and local future land use planning efforts, working with the U.S. Army Corps of Engineers to dredge the Saco River and Biddeford Pool/Wood Island Gut, and ensuring that the public has access to Biddeford's marine waters for years to come. Much of this work is on-going and will be in-process for many years to come. A significant vulnerability to the completion of this work is public interest and engagement.

Beach Monitoring

The Maine Healthy Beaches Program (MHB) is a partnership between the Maine Department of Environmental Protection and local municipalities/state parks. The

program is funded by the U.S. Environmental Protection Agency (EPA) through the Beaches Environmental Assessment and Coastal Health (BEACH) Act of 2000. MHB is a statewide effort to monitor water quality and protect public health at Maine's participating coastal saltwater beaches. There are over 60 participating beaches in the program spanning approximately 200 miles from Kittery to Acadia National Park. Biddeford has four beaches in this program: Hills Beach, Gil Bouche Park – Biddeford Pool, Middle Beach, and Fortunes Rocks Beach.

The Maine Healthy Beaches Program was established to ensure that Maine's saltwater beaches remain safe and clean. The program brings together communities to perform standardized monitoring of beach water quality, notifying the public of potential health risks and educating residents and visitors on what they can do to help keep Maine's beaches healthy.

Coastal Flooding and Resilience

Coastal Flooding is one of the most significant natural hazards impacting Maine's coast and is expected to become more severe with increasing precipitation, astronomically high tides, and sea level rise. Biddeford's coastline and low lying areas are already experiencing the effects of climate change as evidenced by coastal erosion, flooding, and inundation near critical infrastructure. But just how prepared is Biddeford for what is anticipated to come? In order to prepare for these threats, local decision-makers need information and tools that allow them to better understand vulnerabilities and identify proactive steps to increase flood resistance. Biddeford is fortunate to have access to Southern Maine Regional Planning and Development Commission Coastal Resilience team. Their Senior Land Use Planner and Coastal Resilience Coordinator co-authored the Maine Flood Resilience Checklist, a voluntary, non-regulatory self-assessment tool designed to assist Maine communities to evaluate how well positioned they are to prepare for, respond to, and recover from flooding events and sea level rise. It offers an integrated and practical framework for examining local flood risk, evaluating vulnerability of the natural, built, and social environments, and identifying opportunities to enhance flood resilience. The Checklist can help Biddeford integrate sea level rise considerations into local floodplain ordinances and incorporate resilience activities into capital improvement plans. The Checklist also provides direct links to helpful and informative state and federal resources that can inform the planning and decision-making process.

Section 13-7

Dredging of the Saco River and Biddeford Pool Biddeford is home to two Federal Navigation Projects (FNP) that are maintained by the United States Army Corps of Engineers (USACE): the Saco River FNP and the Wood Island Gut/Biddeford Pool FNP. FNP's and their associated federal anchorages make it possible for safe marine navigation. USACE's DV Murden attempted dredging the head of the falls in the Saco

River in 2017 but was forced to cease operations due to early icing in the river. A mechanical dredge completed the job in 2018/2019. USACE contracted a hydraulic suction dredge at the mouth of the river which provided beach nourishment to the beach at Camp Ellis in Saco. Wood Island Gut/Biddeford Pool FNP and anchorage were dredged in 2018/2019 by mechanical dredge. Biddeford Pool Yacht Club conducted a private dredge by USACE's contractor to increase water depth at the fishermen's wharf and anchorage. Biddeford must compete with 64 other FNP's along Maine's coastline for maintenance dredging services. Communities that utilize their FNP's for commercial transportation have a stronger case for support than communities that utilize their FNP's for recreational purposes. Obtaining the necessary federal funding resources to survey, plan, design, engineer and contract dredging services is a constant challenge. Biddeford can improve its case for support by regularly conducting economic assessments at regular intervals to quantify the economic impact of the FNP's in the community.

Section 14.9

Climate Change will undoubtedly bring increased risk of flooding to the vulnerable coastal areas of Biddeford Pool, Hills Beach, and Fortunes Rocks among other places. For these areas, it is important to strengthen existing infrastructure and make other improvements to protect and defend the coastal development from flooding. Also, discouraging new development in the most vulnerable coastal areas will improve Biddeford's overall resilience. Other areas of the city will be affected as well. Situated along the Saco River, some parts of downtown are as vulnerable to flooding as the coast. Extreme storms, temperatures and drought can be expected to affect all parts of Biddeford. Working within the city, or in a regional capacity with other communities and/or organizations, there are many measures that can be taken to mitigate and adapt to climate change. This is long-term work. Every resident, worker, or visitor of Biddeford bears some responsibility in the fight against climate change.

How We Get There:

- Adopt a Biddeford Climate Action Plan that recommends strategies to mitigate and adapt to the impacts of climate change, especially those related to sea level rise.
- Monitor available information from federal, State, regional (such as Southern Maine Planning and Development Commission) and local sources on rising sea levels along Biddeford's coastline.

Goal 1

PLAN FOR, MITIGATE, AND ADAPT

To climate change impacts to Biddeford's natural and built environment, including its shoreline and adjacent land uses from rising sea levels.

- Adopt a Biddeford Climate Action Plan that recommends strategies to mitigate and adapt to the impacts of climate change, especially those related to sea level rise.
- Monitor available information from federal, State, regional (such as Southern Maine Planning and Development Commission) and local sources on rising sea levels along Biddeford's coastline rising sea levels.

How We Get There:

- As part of the Climate Action Plan, develop a public engagement program to enhance the awareness of climate change and sea level rise impacts on particularly vulnerable populations and groups.
- Continue to support local and regional cooperation for emergency response, the protection of water supply and sewer systems, adaptation measures, and other climate related hazard prevention and preparedness.
- Implement strategies that protect Biddeford's shoreline and enhance Biddeford's resilience to impacts from sea level rise.
- Evaluate existing infrastructure located in vulnerable areas to reduce the potential impacts from sea level rise, including but not limited to, in-place improvements and relocation of infrastructure outside of vulnerable areas.
- Evaluate all proposed new infrastructure investments by the city within the context of climate change and sea level rise before design and implementation.
- Encourage private property owners to implement measures to protect against the impacts of climate change and sea level rise in vulnerable areas.
- Reduce Vehicle Miles Travelled in the City by internal combustion engine vehicles, particularly for single-occupancy personal vehicle

Appendix E: BCPC Fully Supports the Climate Action Plan, especially.

Land Use and Natural Environment:

Integrating climate resilience measures in zoning and development standards to address climate impacts

- Adopting a model Low Impact Development (LID) stormwater ordinance
- Establishing a minimum buffer requirement near waterways and wetlands

Limiting growth and development in areas vulnerable to sea level rise and flooding

- Biddeford is removing the Coastal Residential Zone from the growth areas in the Future Land Use Plan of the Biddeford Comprehensive Plan.

Educating the community about the value of trees and native, climate resilient, and sustainable landscaping

Managing and restoring the Thatcher Brook Watershed Biddeford has a management plan for the Thatcher Brook Watershed

LN1. Sustainable Landscaping: Create and enforce climate resilient and sustainable landscaping approaches, including eliminating the use of fertilizers, herbicides, and pesticides, especially in city parks and green spaces

LN3. Nature Based Solutions: Promote and enable "nature-based solutions," such as the restoration of sand dunes or wetlands, to protect shorelines and coastal property from flooding and erosion.

LN7. Direct Development: Direct development away from areas of the city that are exposed to climate-related risks, including sea level rise, erosion, and inland flooding.

Health, Safety and Well Being

H1. Resilience Hubs: Establish a designated site to serve as a "resilience hub" that can provide critical services to residents during climate related emergencies or disruptions

H2. Improve Disaster Planning: Improve disaster planning and response to be better prepared for climate change risks, including early warning systems and community evacuation

H6. Ensure Safe Drinking Water Supply Ensure the safety and quality of drinking water supplies, including through assessment and management of climate change impacts to septic systems and wells.

Leadership & Support:

LS2. School Curricula : Support local schools to include climate change and sustainability in school curricula.

LS3. Climate Change Training: Provide climate change training for municipal boards, commissions, and committees.

LS4. Create Position of Sustainability Coordinator: Create a municipal Office of Sustainability and position of Sustainability Coordinator, whose mandate will be to implement the Climate Action Plan.

LS5. Establish Local Climate Funding: Establish local funding mechanisms to support implementation of the Climate Action Plan

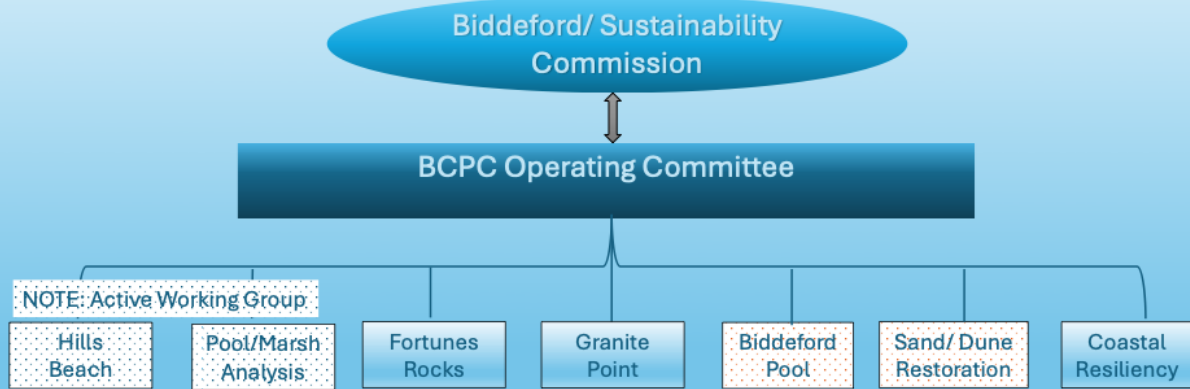
APPENDIX F: BCPC Mission Statement

Biddeford Coastal Preservation Coalition (BCPC) Mission Statement

The mission of the Biddeford Coastal Preservation Coalition (BCPC) is to work with the City of Biddeford, applicable state/regional agencies and residents in coastal communities (a) to implement and enhance Biddeford's policies and infrastructure addressing climate change, and (b) to develop strategies and take action to preserve the environment and economic viability of Biddeford's coast by fostering coastal resiliency and mitigating the impact on the coastal ecosystem including, but not limited to, dune dynamics such as erosion and/or accumulation of our beaches.

APPENDIX G: BCPC Operational Structure

BCPC Operational Structure



'Think globally while acting locally'

An aerial photograph of a coastal landscape. The ocean is on the left, with gentle waves washing onto a sandy beach. To the right of the beach are several large, rounded sand dunes covered in low-lying, dry vegetation. The dunes are separated by small, shallow depressions or ponds. The lighting suggests late afternoon or early morning, with long shadows and a warm, golden glow over the scene.

Biddeford Coastal Preservation Coalition (BCPC)

Coastal Resiliency Workshop: December 10, 2024

Coastal Resilience Workshop Agenda

- Brief update on 2022.85 Council Resolution & Section 111/Camp Ellis Project
- Current State Coastal Concerns: Biddeford beaches/dunes/marsh
- What can be done today for coastal resiliency?
 - Coastal/Beach Management Program definition & components
 - Future State Impact with 1.6 ft Sea Level Rise
- York County Dredge Program
- Next Steps/Final comments

2022.85 Council Resolution & Section 111/Camp Ellis Project Update

- 2022.85 Council Resolution, signed 10/4/22 : *Status Outstanding*
 - Army Corps of Engineers reviewed maintenance request
- Section 111/Camp Ellis: *Status Work in Progress*
 - **Requesting** City Council support as an abutter and south side jetty owner
 - Environmental Impact Assessment
 - 2024 Saco River Dredge slated for 2024-2025 dredge season (Nov-Mar)

Current State: Biddeford Coastal Concerns

- Biddeford coastline and low-lying areas **are already** facing effects of climate change via coastal erosion and flooding
 - *Per Emergency Mgmt, 2024 Storm 8 damaged sites estimated damage -\$4M*
 - 2024 Storm Comparison, Biddeford saw 5 x greater erosion than Saco
 - Current State: Beaches & dune erosion
- No projects or funding plans for identified vulnerabilities by SPMDC
 - Priority '**Hot Spots**': Fortunes Rock & Biddeford Pool/Marsh/ 1-Mile Stretch
 - **Highly vulnerable** spots: Hills Beach Road & Granite Point Road

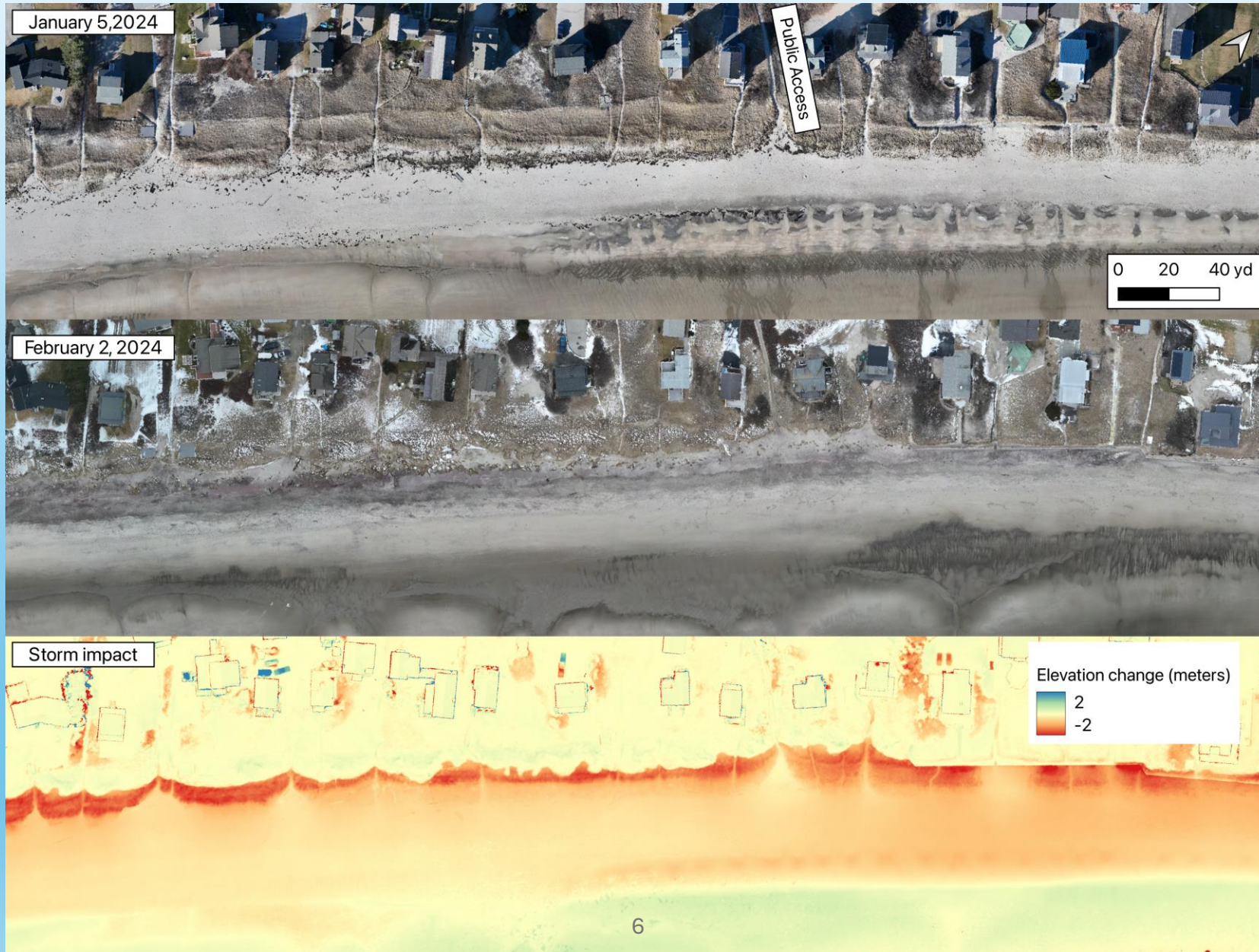
DJI Mavic 3E and 3M



Inspires Flight 1200A
YellowScan Mapper



Middle Beach



Dune damage Fortunes/Middle/Biddeford Pool during January storms

- 27.5 ft – average retreat of dunes due to storm
- 46% of dune area lost (4.5 acres)

Dune Recovery since February

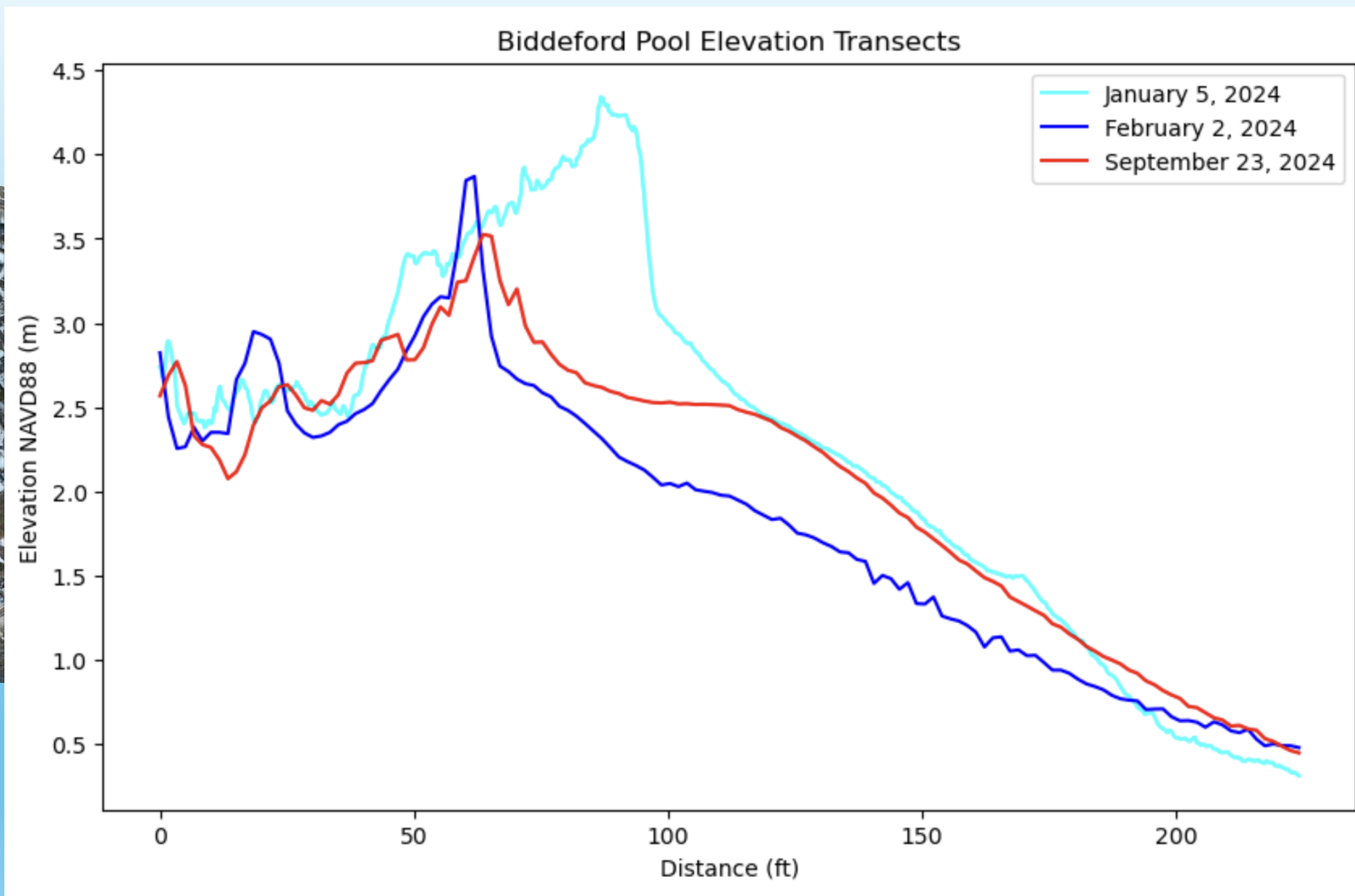
- 1.9 acres of dune re-growth
- 35% due to planting

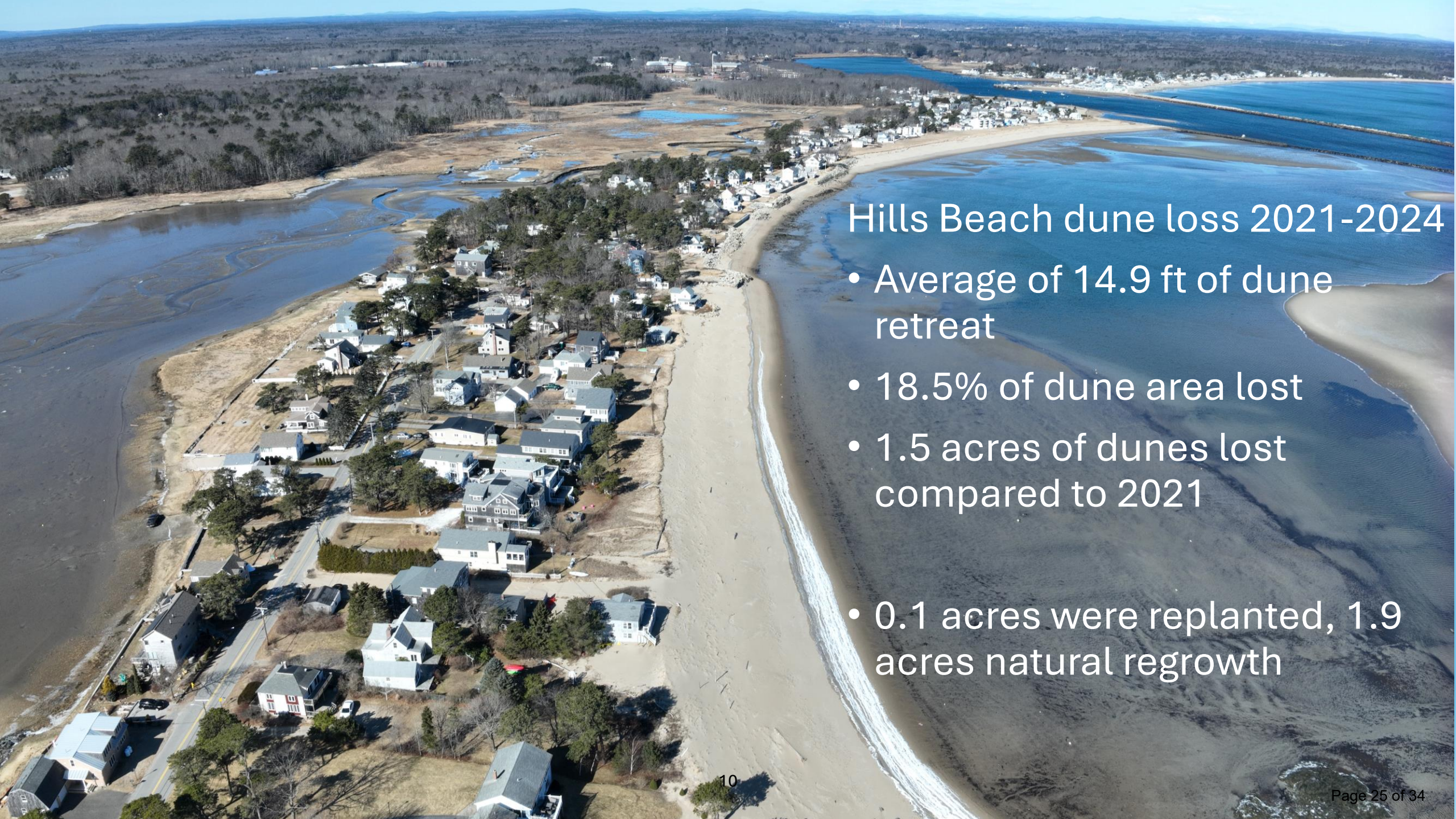


Fortunes – Middle – Biddeford Pool Beaches

- Total lost: $88,000 \pm 16,000 \text{ yd}^3$
 - ~100,000 tons of sand – 6600 dump truck loads
- Since February beach recovered $140,000 \pm 16,000 \text{ yd}^3$
 - 87% of sand recovered on the beach, not dunes
 - Net loss of $5,600 \pm 1800 \text{ yd}^3$ from dunes (including scraping and replanting)







Hills Beach dune loss 2021-2024

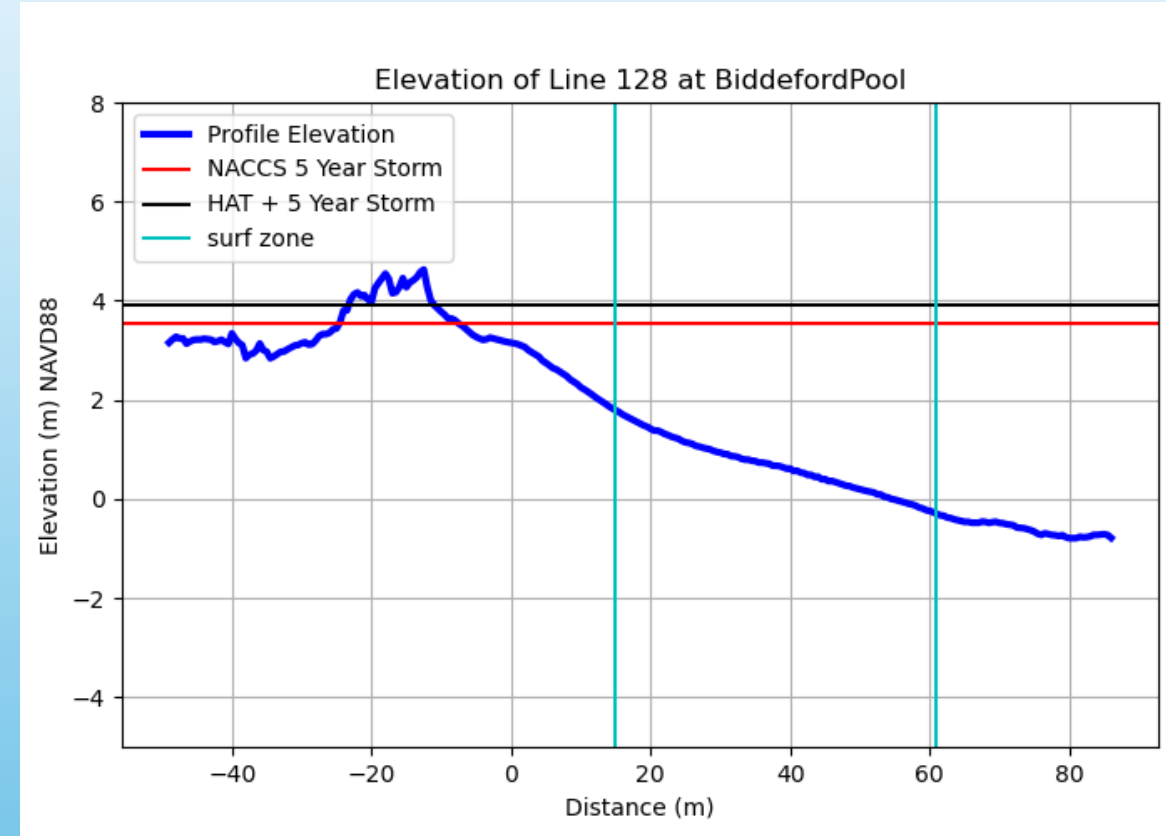
- Average of 14.9 ft of dune retreat
- 18.5% of dune area lost
- 1.5 acres of dunes lost compared to 2021
- 0.1 acres were replanted, 1.9 acres natural regrowth

Comparison with Saco and Kennebunkport

- Similar to Goose Rocks Beach, especially the eastern beach
- Different from Saco – Fortunes/Middle/Biddeford Pool saw **5 times** the erosion as Camp Ellis
- Parts of Saco Beaches lost dunes and sand higher on the beach, but showed a net gain of sand due to lower beach areas – Biddeford saw erosion everywhere

Future work

- Continue to respond to resident and city concerns/questions
- Improved monitoring of beaches and reporting
- Increase capacity to map bathymetry to see how sand is moving off-shore
- Support creation of a beach management plan



What can be done today for Coastal Resilience?

- Ensure **commitment** to manage for 1.6 feet of relative sea level rise by 2050, but prepare to manage for 3.0 feet
 - Need to build and re-build with coastal resilience in mind
- Support **adding** a comprehensive **Coastal/Beach Management Program** to the Biddeford Climate Action Plan with **defined ownership** for execution
- Establish **funding plans** for 2025 & beyond for execution of the Climate Action Plan
- Define and **execute** a comprehensive **Coastal/Beach Management Program (C/BMP)** to build coastal resiliency against further erosion and flooding risks
 - For 2025 storms, prepare and ensure readiness to show **qualification** for any FEMA funding

Coastal/Beach Management Program (C/BMP) Definition

- Involves strategies, policies and actions designed to protect, preserve and restore coastal communities
- Plays a crucial role in creating adaptive & resilient communities
- Manage vulnerabilities of flooding risks and catastrophic impacts
- Minimizes coastal & wetland/marsh erosion

Coastal/Beach Management Program (C/BMP)

Components included, but not limited to

- Conducting **environmental assessments** (I.e., Beach/marsh data and erosion rate analysis)
- Adding a **Beach/Dune Management Plan** (I.e., dredging program, beach scraping)
 - Provides beach/dune nourishment & preservation for **Engineered Beaches** across Biddeford
- Maintain existing **Maine Healthy Beaches Program**
- **Emergency Preparedness** (I.e., Coastal evacuation & emergency plans)
- **Coastal Recovery Plans** (I.e., ensure FEMA qualification when needed)
- **Flood Risk Management Plans** based on Maine Flood Resilience Checklist
- **Public & Recreational Access plans**

York County Dredge Program

Biddeford Beach/Dune Management Plan Opportunity

- County level program offering services to provide coastal resiliency lead by York County Emergency Management Agency (YCEMA)
 - Operator: **Michels Corporation**
 - Engineering Firm : **Anchor QEA**: Engineering, Environmental Science & Restoration
- Cities/Towns with MOA/MOU: Ogunquit, Kittery, York, Wells, Old Orchard Beach, Wells, and Kennebunk
 - Finalizing approval: Kennebunkport & Saco

Services include, but not limited to:

- Coordination & funding requests
- Federal Procurement process for recovery

Future State: Biddeford's impact of 1.6 ft Sea Level Rise (SLR)?

Source: SMPDC Vulnerability Report

- Flooding from coastal storm events can cut off road & emergency access to **56 properties**
 - 260 properties will be cut-off with the 3.0 ft scenario
- Coastal properties vulnerable to flooding from a coastal storm event
 - **\$391 million** in assessed property value is vulnerable, or **11% of city-wide assessed property value**
 - Increased flooding exposure could also decrease future assessed property values
- Increased beach & dune erosion and flooding deteriorate beaches and dunes leads to smaller, to no beaches = **DECLINE in tourism**

Future State Flooding Impacts *Continued*

Source: SMPDC Vulnerability Report

- Increases in precipitation and stormwater run-off lead to **saltwater intrusion** into groundwater
 - Will negatively affect **water quality and ecosystem health** in Biddeford's watersheds, such as the Thatcher Brook Watershed and,
 - Potentially lead to premature septic system failures
- Increase in Public Works and Emergency Management spend for road & infrastructure repairs

Final Comments

- The well-being of Biddeford's coastal communities are increasingly under threat from sea-level rise to strengthening coastal storms & flooding
- Besides being a major constituency, Biddeford's coastal communities are a major source of revenue from property taxes and tourism that need to be protected
- Immediate action is necessary to develop plans for restoration and resiliency as other coastal municipalities throughout York county are doing
- Organizational commitment, funding and focused support by City leadership will be required to follow through on these initiatives

‘We are all in this together and need to not lose hope, rather harness it’

Source: Maine Climate Council