NANTUCKET TOWN ASSOCIATION MEETING

January 24, 2023, at 4:00 pm

Meeting held by Zoom conferencing

FINAL AND APPROVED MINUTES

Attendance (Participants as noted by Zoom): Trish Bridier, Mary Anne Easley, Sarah Ellis, Leah Hill, Mary Longacre, Vincent Murphy, Gail Norton, Lee Saperstein, Bill Seay, Anne Terry, Henry Terry, Charley Walters, and Paula Williams.

Guests: Leah Hill and Vincent Murphy, Department of Natural Resources.

Thanks to the Atheneum, Samantha Aguiar, for hosting the meeting. which was recorded and the link to YouTube is included here: https://youtu.be/tliRe8xOC5s.

I. Call the January 24, 2023, Nantucket Town Association Annual Meeting to Order.

President Henry Terry called the meeting to order at 4:01 pm. He announced that the meeting is being recorded and those who could not attend are welcome to use the above link to watch the recording. He also announced that, to avoid conflicts with the Open Meeting Law, there would be no discussion of the Nantucket Town small area plan because members of that working group are in attendance at today's meeting and no agenda for it has been posted.

II. Approval of minutes of the Meeting of November 15, 2022.

Henry Terry asked for approval of the minutes of the meeting of November 15, 2022; Trish Bridier moved approval of the minutes, Mary Anne Easley seconded them, and the vote to approve was unanimous.

III. Treasurer's Report.

Mary Longacre, Treasurer, gave the Treasurer's report, attached. There were dues payments of $245.00 and expenses for a PayPal fee of $3.08 and a $15.00 State filing fee, which made a new balance of $4,250.32. She noted that the Association's dues to the Nantucket Civic League are due. Inasmuch as they are based on the dues-paying membership of the Town Association, she asked Mary Anne Easley to provide her with that number. A motion to approve was made by

Trish Bridier, seconded by Bill Seay, and approved unanimously.

IV. Guest Speaker, Vincent Murphy, Sustainability Programs Manager.

Henry Terry suggested that the agenda be amended to allow the guest speaker to go ahead of the business items. The change was approved by acclamation. He then introduced Vincent Murphy, Sustainability Programs Manager, to speak on the impacts to Nantucket and, particularly, the Town Area from rising sea levels.

Vince Murphy noted that his three children were born on Nantucket and that his experience as Coastal Resilience Coordinator gave him almost as much pleasure as they do. Before he began his talk, he said that he is available to speak with anyone about sea-level rise and coastal resilience and he can be reached at vmurphy@nantucket-ma.gov. He also introduced Leah Hill, currently a biologist with the Department of Natural Resources, who will become the Coastal Resilience Coordinator while he becomes Manager of Sustainability Programs. Items included in his talk come from the Coastal Resilience Plan, CRP, that can be found in the Sustainability web pages under the Government tab for the Natural Resources Department: https://www.nantucket-ma.gov/130/Natural-Resources. If one does not wish to burrow down into the menu, the relevant pages are located at https://www.nantucket-ma.gov/1129/Sustainability. From this page, one chooses "Community Resilience Planning and then the CRP itself: https://nantucket-ma.gov/2030/Coastal-Resilience-Plan.

His talk on "Coastal Resilience in Downtown Nantucket" was accompanied by a sequence of very informative slides, which are appended to these minutes. He explained that a lot of material in his talk comes directly from the CRP. Interested association members may wish to open the CRP and also view the video because, inasmuch as he shared his screen, one can hear his talk while reading the slides.

He began with a review of projections for sea-level rise by 2070 and that, while we may hope for the best, we need to plan for the worst. For sea-level, this means a rise of over six feet (see page 8 of these minutes). In addition to data from NOAA and FEMA, he likes the Massachusetts Coast Flood Risk Model, MC-FRM, for its accuracy and detail (https://resilientma-mapcenter-mass-eoeea.hub.arcgis.com/maps/Mass-EOEEA::massachusetts-coast-flood-risk-model-mc-frm-0-1-annual-exceedance-probability-/about). His slides show the progressive inundation over the decades in the forecast. A risk analysis projected the number of structures in the downtown area, private and public, that would be at risk (pages 17 and 18) from flooding. Their aggregate value is 3.4 billion dollars and they contain the bulk of Nantucket's historic structures. He then turned to solutions that are feasible (starting on page 19) and showed by means of a chart (page 26) that there would be real expenses, in the order of 900 million dollars that could save the identified structures, which is a 250 percent return on investment. He spent time on a Downtown Neighborhood Flood Barrier and on developing Steamboat Wharf Resilience (page 27).

He willingly took questions from attendees. Mary Longacre, who chairs the Coastal Resilience Advisory Committee, asked if the figure for loss was only for the value of the structures or did it include lost opportunity income. Only the structures, he replied. Lee Saperstein asked if the

chart on page 28 had links to pages with more detail for each line. Certainly, was the answer; the detail can be found in the CRP. He noted that a grant for which they had applied and been denied was to be resubmitted to the State. The State encouraged Nantucket to re-apply and gave advice on how to improve the application. He hopes that the Nantucket Town Association would write a letter of support for this application, which will be produced in the spring. Mary Longacre proposed that the Association approve this letter now and authorize Henry Terry to write it. Anne Terry seconded the motion and it was approved unanimously.

Mary Anne Easley said that the material in this presentation was very germane to the Town Area Plan Work Group and that Vince Murphy should be invited to present it at one of the Work Group's meetings. Lee Saperstein suggested that Vince Murphy do more than repeat his presentation but act also as a reviewer of the draft report. He said that he would be happy to do so. Mary Anne Easley commented that all of the projects would need to be approved at Annual Town Meeting, ATM, which was a daunting thought. Vince Murphy noted that the ATM had already approved funds for planning projects. Paula Williams asked how far up Main Street would the water go in the worst-case scenario for 2070. Between Federal and Union Street was the reply, which was demonstrated on a MC-FRM map.

Henry Terry spoke for the association members when he thanked Vince Murphy for his extensive report.

V. Old Business.

Henry Terry reminded the members that the question of a dues increase would be taken up at this meeting. He asked Mary Longacre how much of a dues payment made through PayPal would be charged as a fee. Three percent was the answer and, going back to the Treasurer's Report, PayPal payments were only one quarter of the total dues paid and cost just over three dollars. Future use of the utility may increase but that is not predictable at this time. Also, she said that the dues fee for 2023 was already in place on the Association's web site so that any rise would not be effective until 2024. Henry Terry suggested that we defer any action on a dues increase until the Treasurer has enough information to make a formal motion.

VI. New Business.

Henry Terry said that the Association had made charitable donations in previous years and asked if we should do so again. Paula Williams moved that a donation to the Atheneum of five hundred dollars was in order because of their support for meetings. Trish Bridier seconded and the motion was approved unanimously. Mary Longacre spoke in favor of a donation to the Nantucket Food-Fuel-Rental Assistance program and suggested that it be three hundred dollars as it had been in the past. Mary Anne Easley and Trish Bridier both offered to second it. Sarah Ellis spoke about programs at St Paul's Church, including 'Laundry Love', Mary Longacre noted that additional information on the programs can be found on their website: http://stpaulschurchnantucket.org/serve/in-the-community/. There was one vote in opposition but an overwhelming majority approved the donation.

VII. Other Business.

Henry Terry mentioned that the Nantucket Lights proposed warrant article would be reviewed by the Finance Committee on January 26th. The proposed fire-pit ban was mentioned.

VIII. Adjournment.

The meeting was adjourned at 4:57 pm by motion from Paula Williams, seconded by Trish Bridier, and approved unanimously.

***Next meeting is February 28, 2023, and will be via Zoom unless a decision to hold an in-person meeting is made; more information will be forthcoming with the next agenda; if one uses Zoom, the address is** https://us02web.zoom.us/j/87455121153.

Lee W. Saperstein, Secretary, saperste@mst.edu.

Nantucket Town Association, January 24, 2023

TREASURER'S REPORT

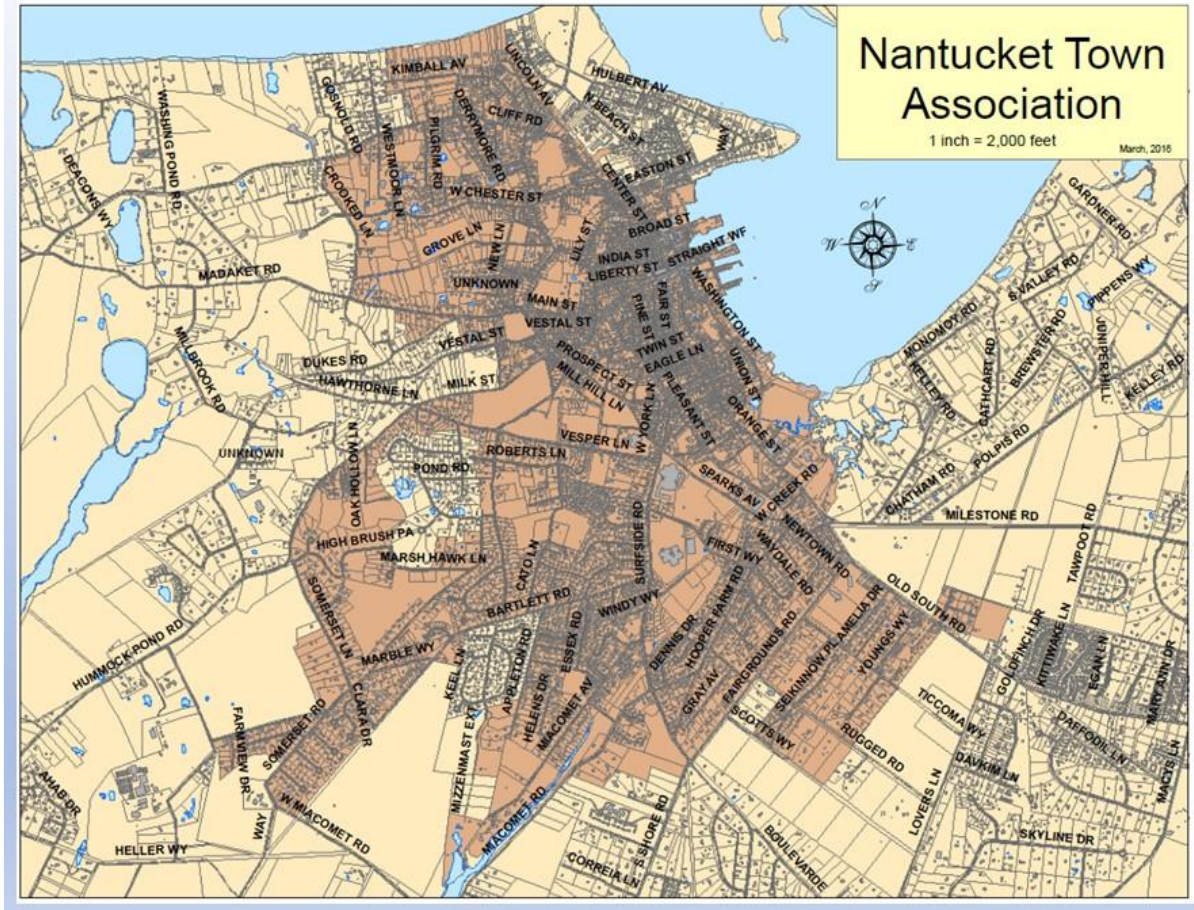
Balance at last report:	$ 4,025.42	on 11/15/22
Dues Received	$ 65.00	* through Paypal
	$ 180.00	* checks
Total Income	$ 245.00	
Expenses:	$ -15.00	to Commonwealth of Massachusetts for annual report
Paypal Fees:	$ -5.10	
Balance as of 01/24/23:	$ 4,250.32	

Respectfully submitted,

Mary Longacre, NTA Treasurer

Coastal Resilience in Downtown Nantucket

Presentation to Nantucket Town Association 1/24/2023
Vince Murphy, Sustainability Programs Manager



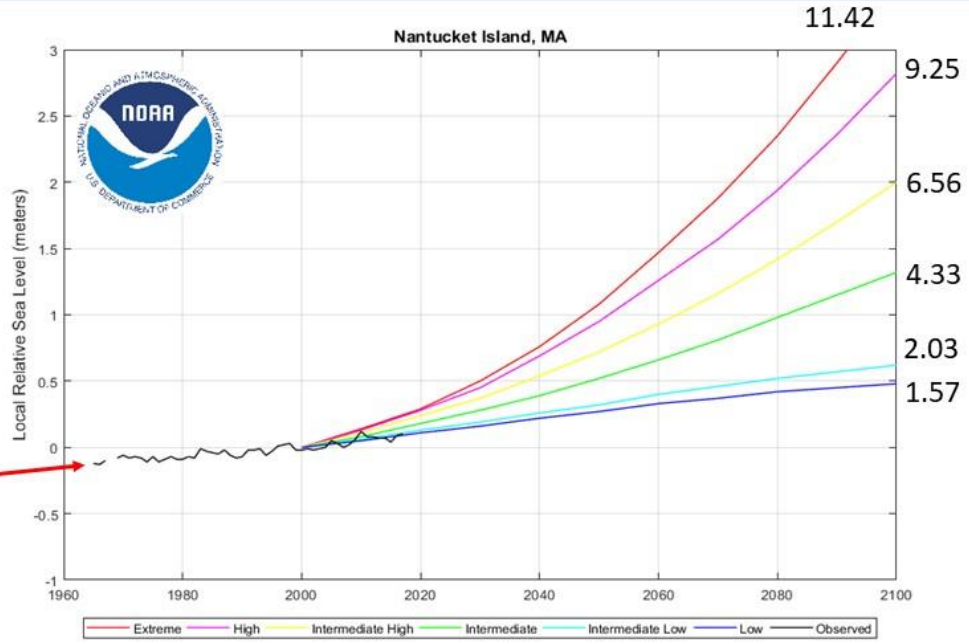
Large HOA area. Main risk is in the Downtown area, so core focus of this presentation looks at Downtown.

2017

The New Nemesis

Sea Level Rise - 2017

Nantucket knows flooding & erosion; Sea Level Rise will make both of these much worse



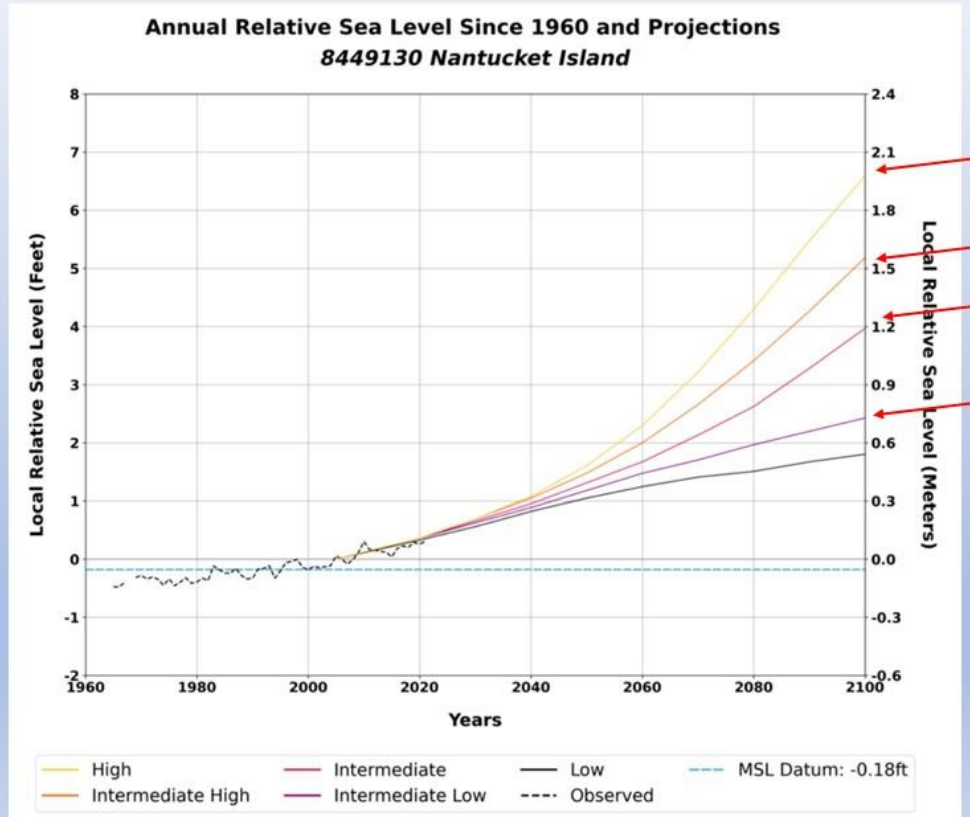
Represents the 8 inches we have already seen

6 different scenarios

- Based on GHG emission
- That impacts how fast ice melts, and sea levels rise
- For examples in next slides, going to use HIGH scenario
- "Hoping for the best, prepared for the worst, and unsurprised by anything in between."

2022

NOAA reports
2022 SLR scenarios for Nantucket



6.66

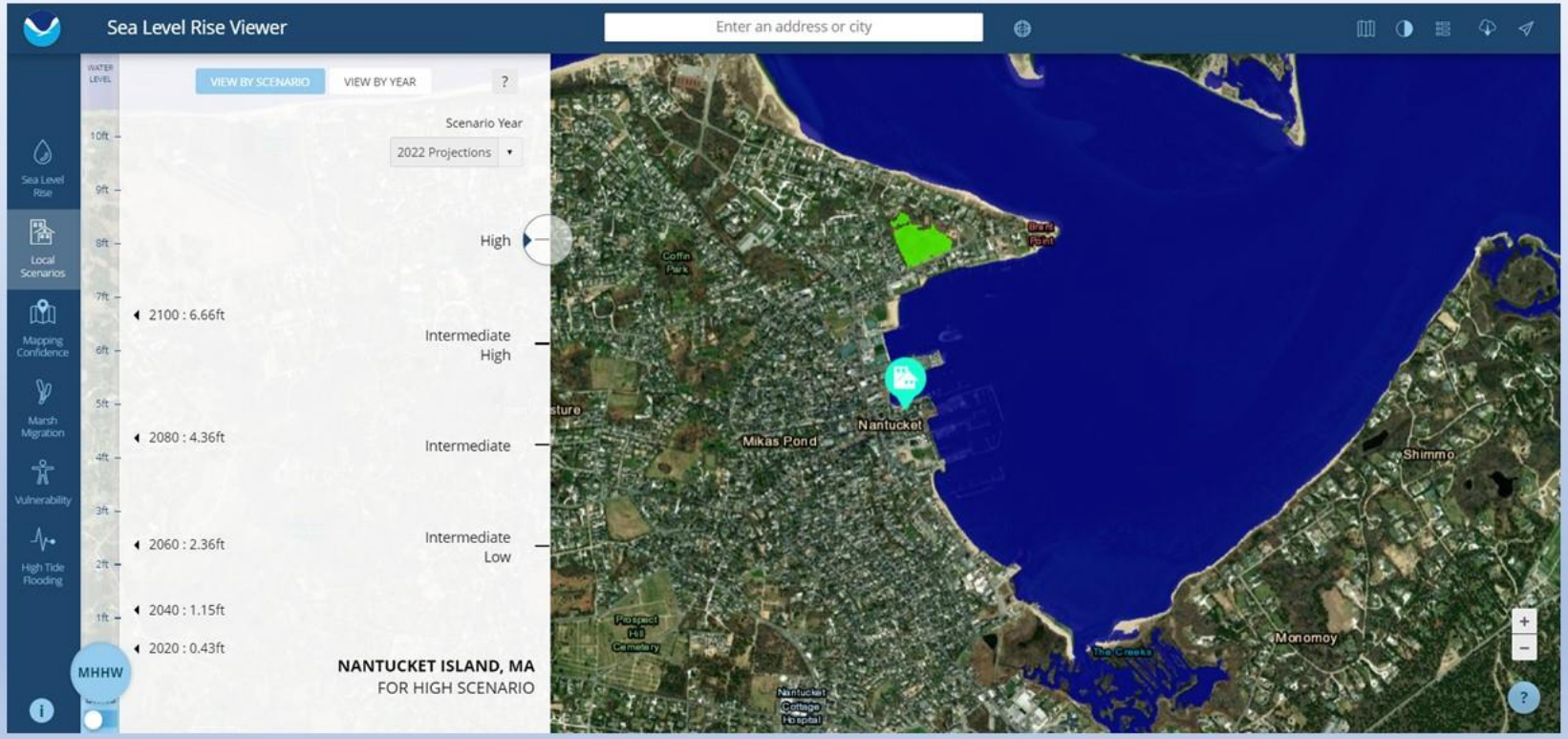
5.24

4.04

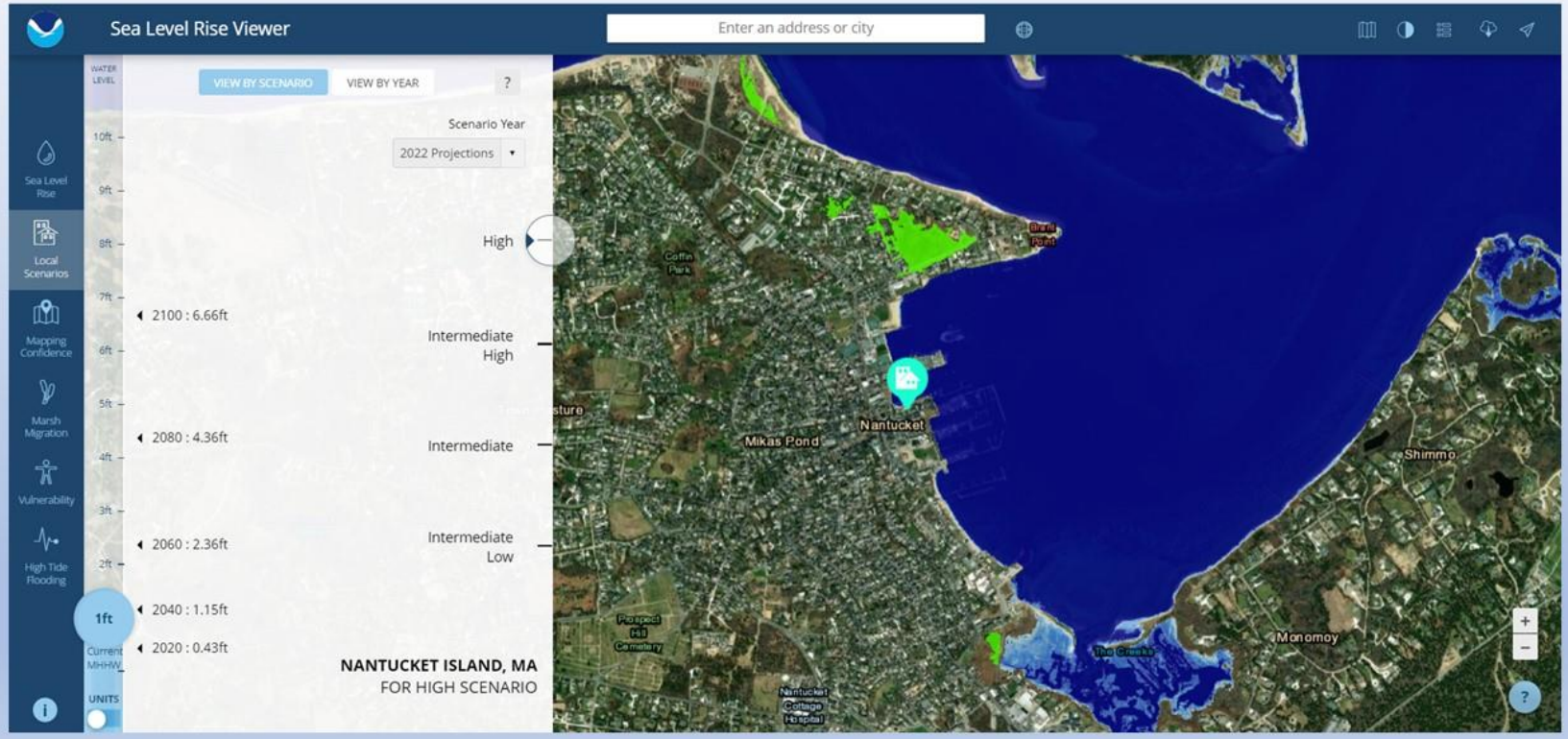
2.49

Less total SLR, but much higher accuracy.

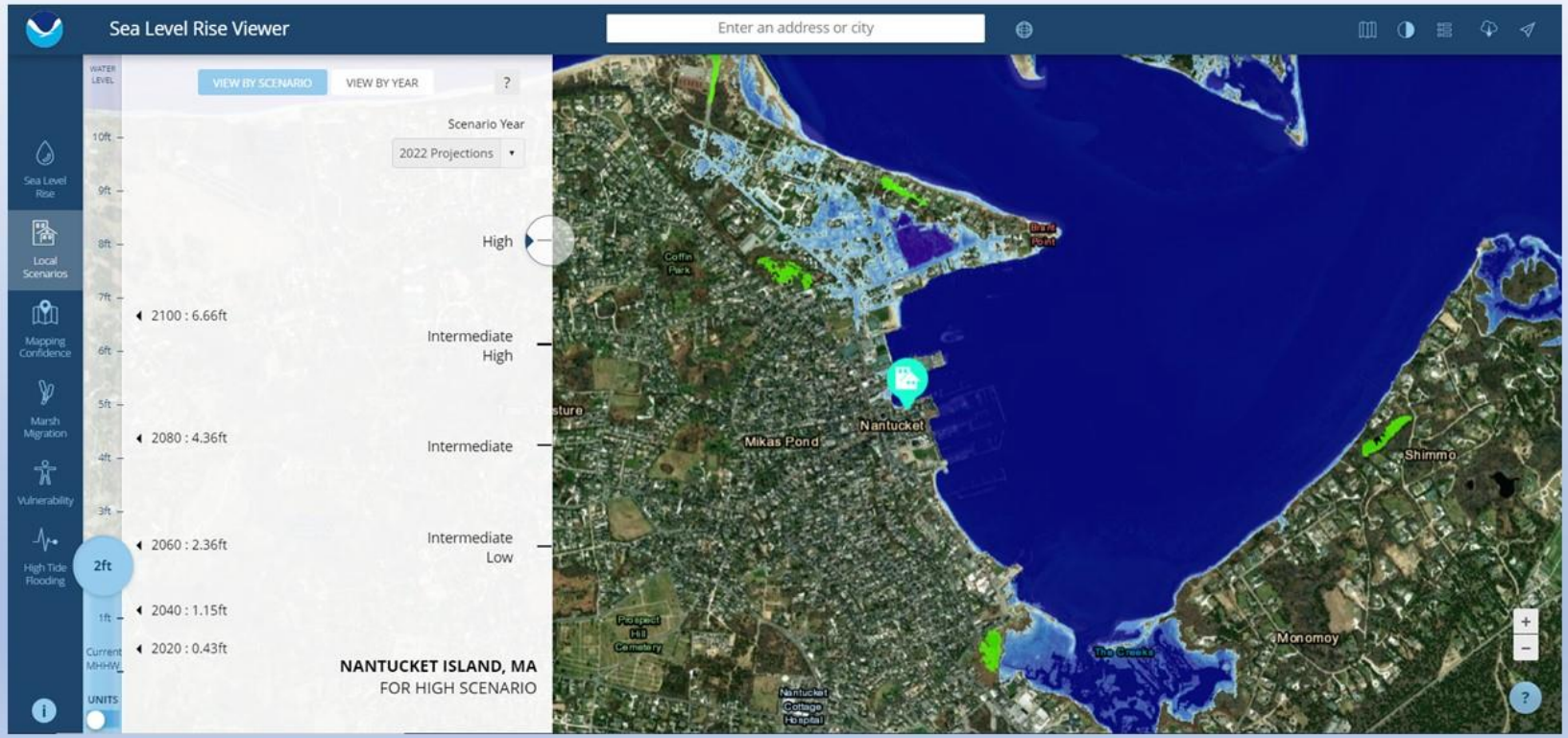
NOAA sea level rise – normal day high tide – present day



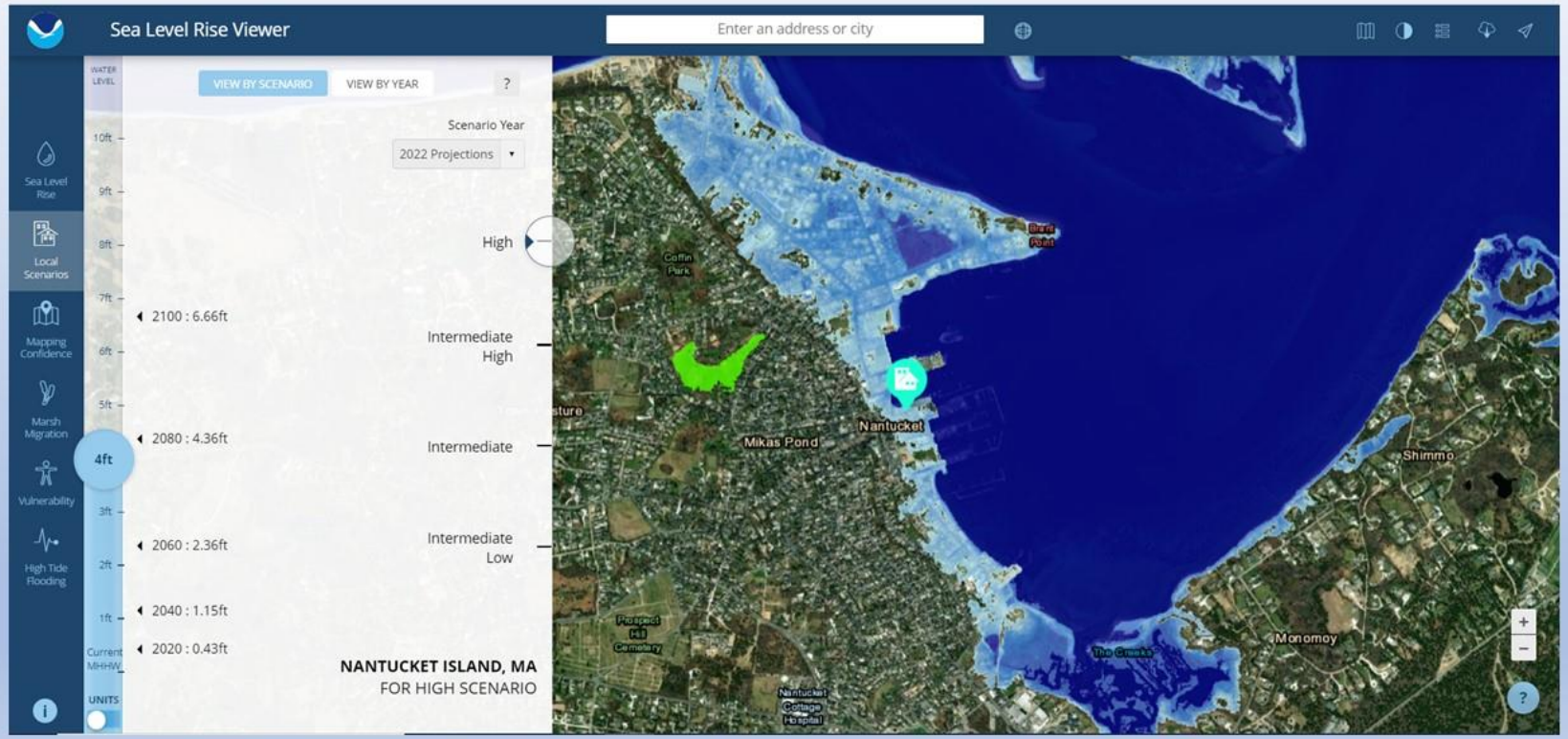
NOAA sea level rise – normal day high tide – 2040's



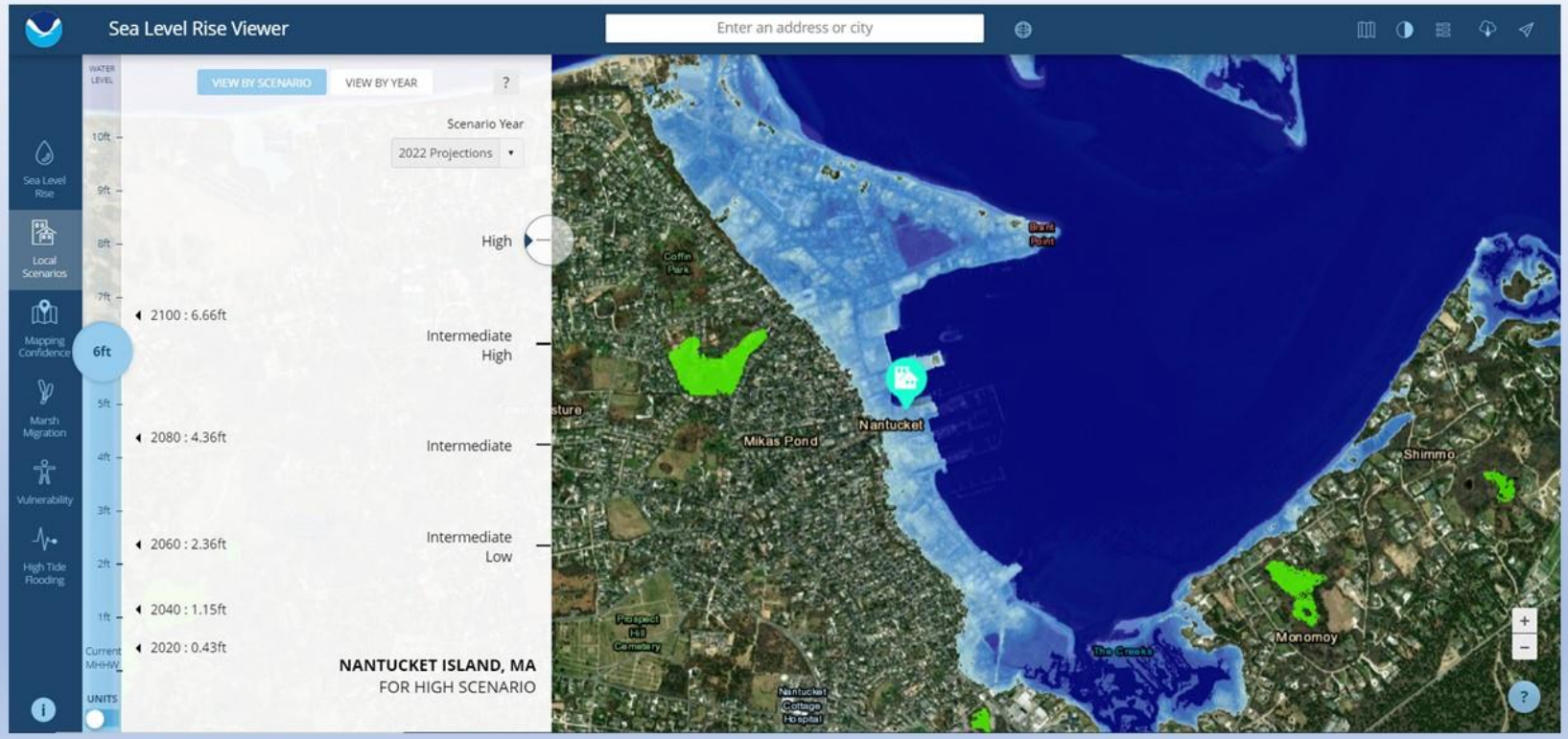
NOAA sea level rise – normal day high tide – 2050's

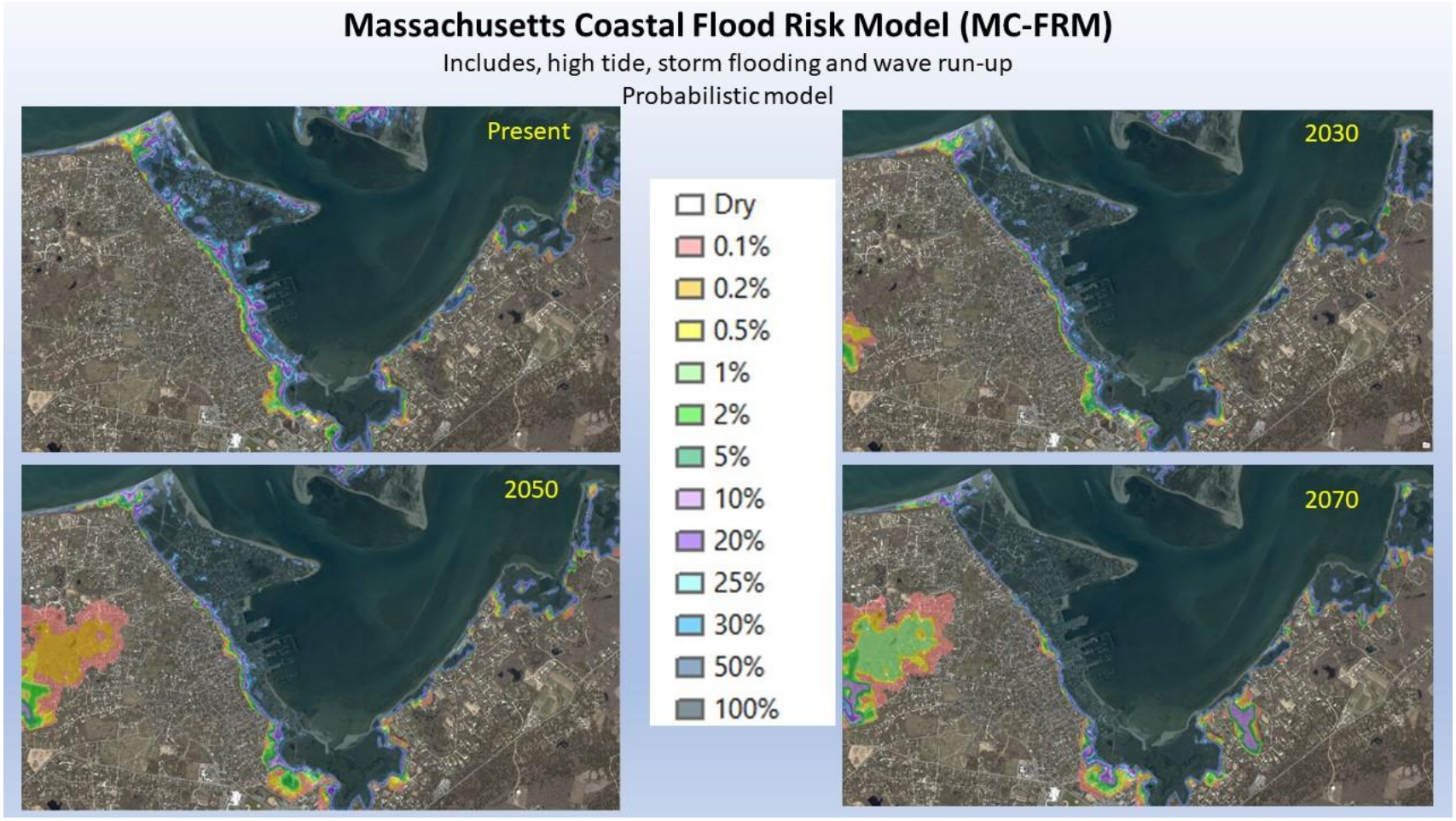


NOAA sea level rise – normal day high tide – 2070's to 2080's



NOAA sea level rise – normal day high tide – 2090's to 2100's




Massachusetts Coastal Flood Risk Model (MC-FRM)
Includes, high tide, storm flooding and wave run-up
Probabilistic model
Present
2030
2050
2070
Dry
0.1%
0.2%
0.5%
1%
2%
5%
10%
20%
25%
30%
50%
100%

January 29th, 2022 Nor'easter that brought about 3 feet of storm surge to Nantucket harbor.

Storm pumps working to drain the area, just as the tides recede

North Beach St had about 18 inches of water

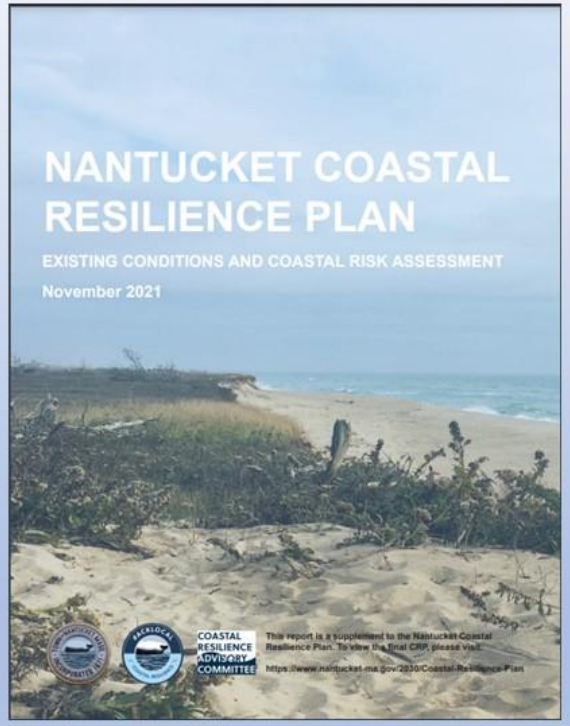
Easton Street was flooded to up to about No. 76

This matches up well with "present" flooding as shown in the MC-FRM

First major project – Risk Assessment

On Nantucket, everybody knows where floods. This put numbers to known risks and projected them into the future to

- 2030
- 2050
- 2070



The combined effects of these risks is great…

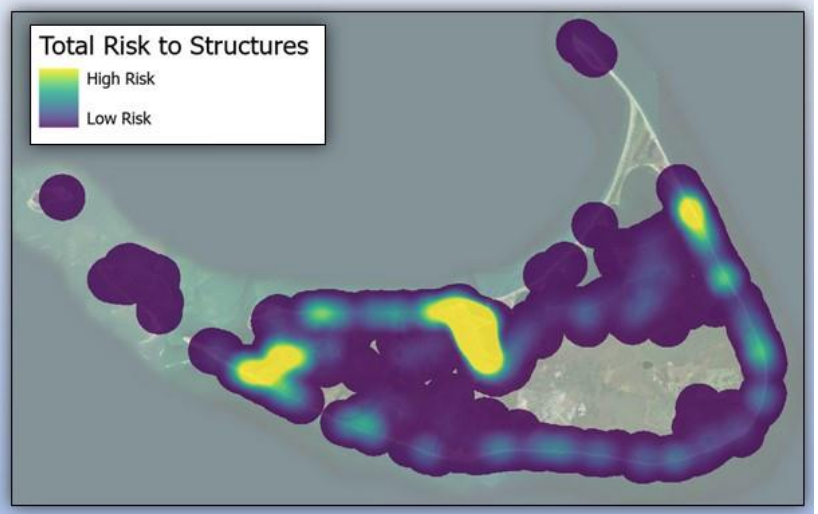
2,373 structures at risk through 2070

84% of at-risk buildings are **residential**

9% of at-risk buildings are **commercial**

49% of at-risk buildings are **historic**

9% of at-risk buildings are **tourism-related**



$3.4 Billion in cumulative expected damages

$180 Million in expected damages at **34 community facilities**


$3.4 Billion in calculated damages and losses to 2070
Billion, not million. Can you visualize a billion?
Total Coastal Flood and Erosion Risk to Buildings
Miles
0 0.5 1 2
N
Muskeget Island
Tuckernuck Island
Nantucket Sound
Atlantic Ocean
Nantucket Harbor
Brant Point
Coatue
Nantucket Harbor
Polpis
North Shore
Madaket
Downtown
Sconset
South Shore
LEGEND
1% Annual Chance Flood*
2030 1% annual chance coastal flood*
2050 1% annual chance coastal flood*
2070 1% annual chance coastal flood*
*The 1% annual chance event, or 100-year storm, is a benchmark used to plan for coastal flooding. Properties within the extent of the 1% annual chance event have a 1 in 4 chance of flooding over the course of a 30-year home mortgage.
Total Quantitative Risk
< $500k
< $1.0 Million
< $2.5 Million
< $5.0 Million
< $10 Million
< $50 Million

COASTAL RESILIENCE ADVISORY COMMITTEE

The Potential Solutions

Basic Adaption Strategies

Accommodate

This raised house is not a Nantucket example. On Nantucket the stilts / base would need to be covered by suitable breakaway panels.

Protect

Dionis examples of protect. West is a bulkhead and east is a rock revetment

Retreat

Retreating a house at the end of Hummock Pond Road. Picture from Tuscana Inc.

All the following recommendations follow these three basic strategies

What can homeowners do to their own properties for resilience?

Lower Cost Options

- Elevate appliances and utilities
- Seal foundation and basement walls
- Use flood-resistant building materials
- Install flood vents

Elevate Utilities

Seal Foundation

Install Flood Vents

Moderate Cost Options

- Reduce impervious surfaces
- Raise first floor level
- Fill basement
- Anchor home

Permeable Pavement

Rain Garden

Fill Basement

Higher Cost Options

- Elevate property
- Relocate home

Elevate Structures

Relocate Structures

Land Acquisition

The Grand Designs

Long term ideas – Post 2050

Just starting the conceptual conversation now. Not a recommendation in the current CRP

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Long term ideas – Post 2050

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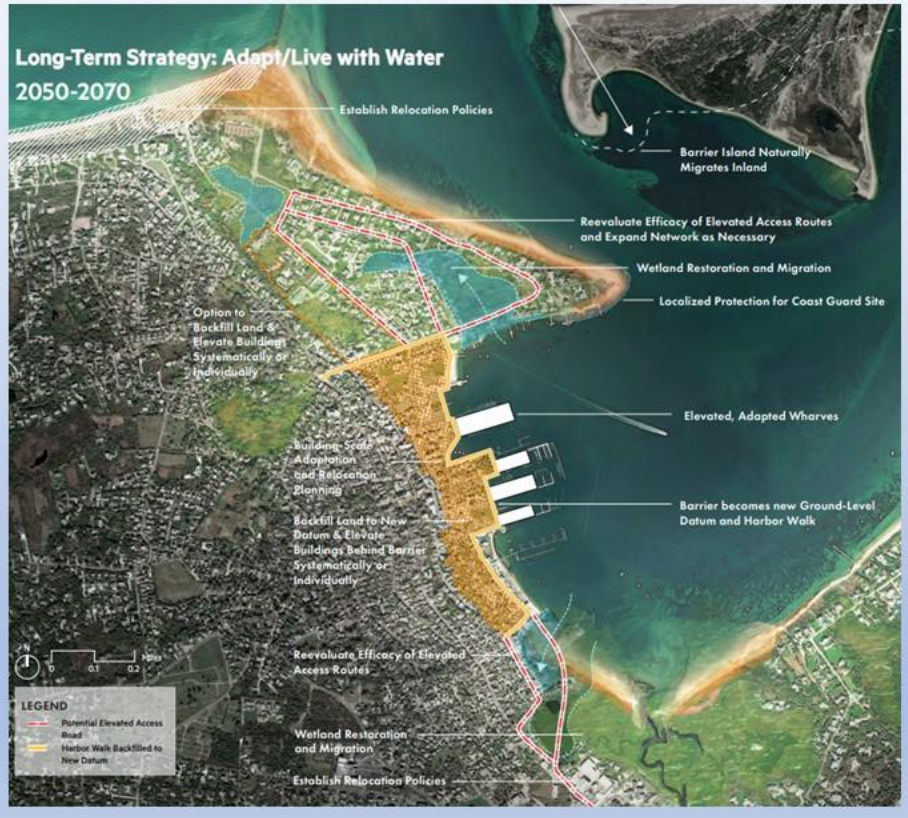
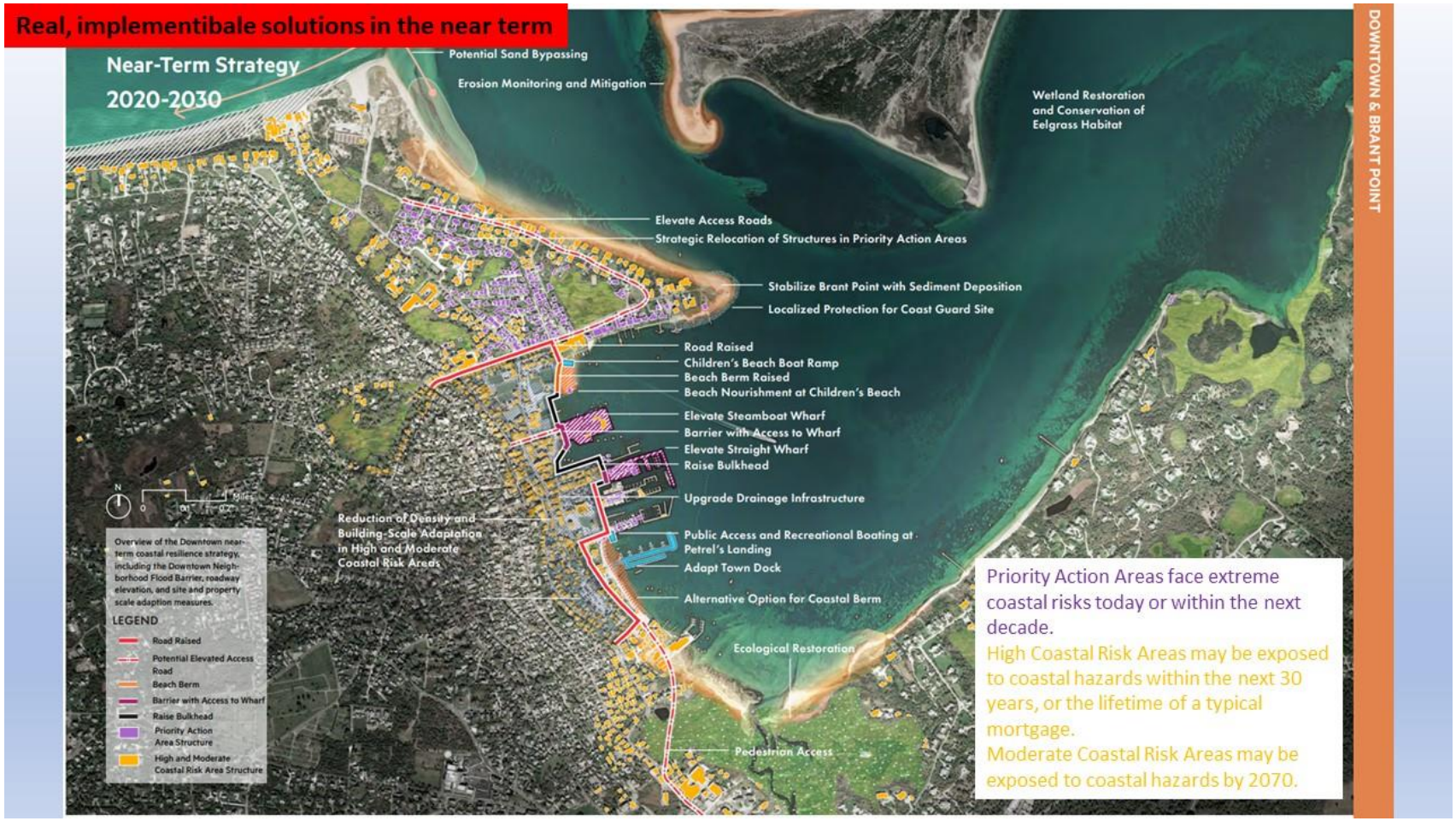
The Grand Designs



Real, implementibale solutions in the near term



Priority Action Areas face extreme coastal risks today or within the next decade.

High Coastal Risk Areas may be exposed to coastal hazards within the next 30 years, or the lifetime of a typical mortgage.

Moderate Coastal Risk Areas may be exposed to coastal hazards by 2070.

Priority	Number	Project Name	Location
1	1-1	Community Outreach on Property Owner Resilience Best Practices	Island Wide
1	1-2	Updates to Zoning By-Law	Island Wide
1	1-3	Updates to Wetland Ordinance and Regulations	Island Wide
1	1-4	Strategic Retreat and Relocation Program	Island Wide
1	1-5	Coastal Resilience & Sustainability Interdepartmental Working Group	Island Wide
3	1-6	Joint Staff Review of Development Proposals	Island Wide
1	1-7	Coastal Resilience and Sustainability Program	Island Wide
2	1-8	Shoreline Change Monitoring Program	Island Wide
1	1-9	Sediment Sourcing and Transport Study	Island Wide
2	1-10	Stormwater Management Plan	Island Wide
1	1-11	Sediment Budget	Island Wide
2	1-12	Stormwater By-Laws Assessment	Island Wide
2	1-13	Stormwater By-Law and Regulations Update	Island Wide
1	1-14	Update locally-adopted sea level rise scenarios and Best Available Flood Hazard Data	Island Wide
1	2-1	Steamboat Wharf Resilience	Downtown
1	2-2	Downtown Neighborhood Flood Barrier	Downtown
3	2-3	Easton Street and Hubert Avenue Road Raising	Downtown
3	2-4	Washington Street Extension and Consue Springs Walkway Raising	Downtown
2	2-5	Building Scale Resilience at 37 Washington Street	Downtown
1	2-6	Downtown Neighborhood Flood Barrier - Phase 1 Project	Downtown

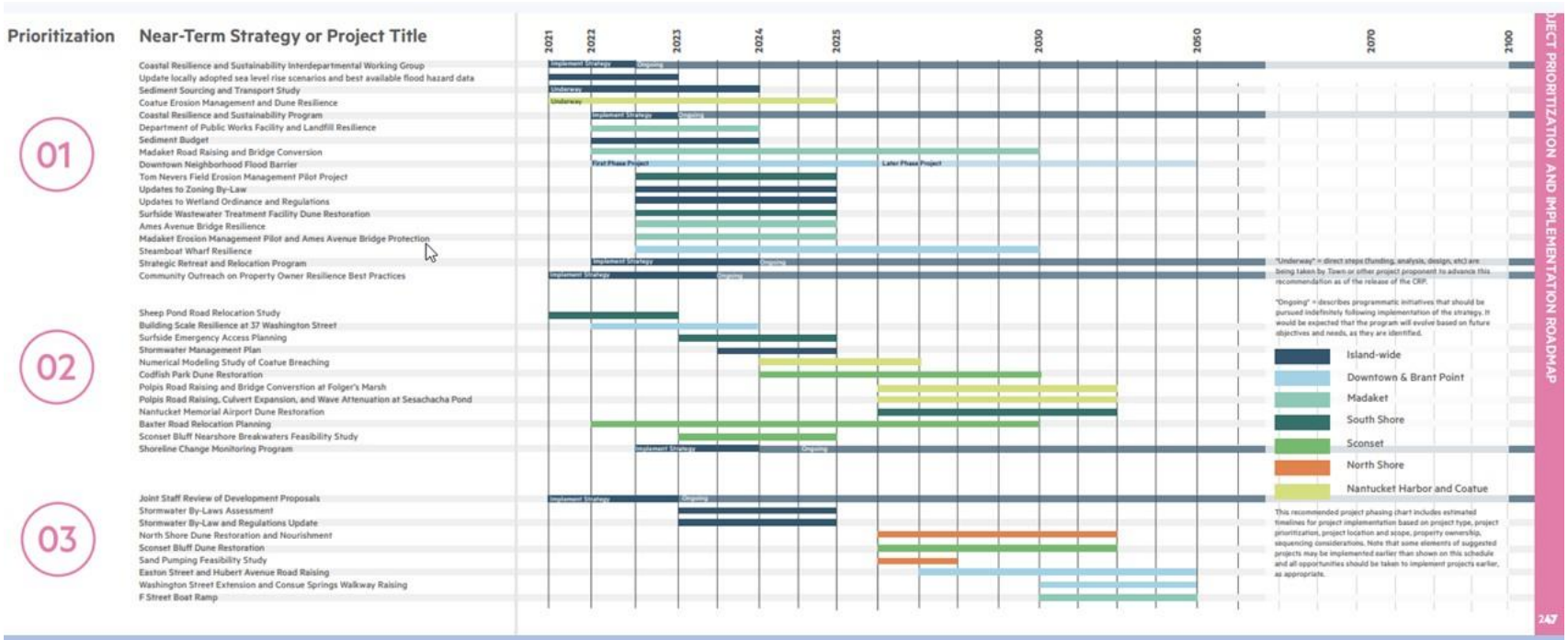
All the island wide and Downtown project that may alleviate current and future coastal issues

Steamboat Wharf Resilience

Description	*Work with the Steamship Authority to develop adaptation plan for Steamboat Wharf with the preferred option of elevating the pier above future mean monthly high water. Building scale measures can be implemented on the wharf over time to reduce risk from coastal storms and enable rapid restoration of operations after a storm. The strategy should be integrated with the design of the Downtown Neighborhood Flood Barrier described below to maintain access from Broad Street onto the Wharf. Final approach will need to be planned and design by the Steamship Authority but close coordination with Town's resilience planning will be critical to a successful island-wide resilience strategy.*
Resilience Objective & Level of Protection	*Maintain everyday service at ferry terminal to the elevation of mean monthly high water (MMHW) in 2100 (11.0 feet NAVD88). The new elevation is 2 to 7 feet above the existing elevation of the wharf. This plan will reduce risk from long-term tidal flooding as well as more severe storms in the next 10-20 years.*
Duration of Performance	*70-80 years, depending on timing of implementation* **Priority** *First*
Estimated Cost	*Capital Costs: $87M Capital Costs with Contingencies: $110M-$120M Annual Operations and Maintenance: $1.3M*
Estimated Benefits	*$19M in avoided direct physical, economic, and social damages to buildings. Additional benefits not quantified include reducing the long-term risk of disruption to ferry service due to flooding at Steamboat Wharf.*
Co-benefit Opportunities	*New terminal facilities and improved access to and from the ferry* *Potential to add new public amenities as part of wharf elevation and redesign*

Downtown Neighborhood Flood Barrier

Description	*The barrier system includes a number of elements that will need to be implemented over time to provide comprehensive, effective flood risk reduction to the recommended elevation (see below). The elements include raised roadways, raised bulkheads, reinforced dunes, and berms. Deployable gates may be necessary in select locations, but the overall approach recommends passive measures that are integrated with the existing built environment, while maintaining access to key waterside facilities such the Children's Beach Boat Ramp, Steamboat Wharf, Straight Wharf, and the Town Pier. The approach can be implemented in phases over a period of 10 to 15 years. In the near-term, Phase 1 of the project should focus on reducing risks to the low-lying and highly vulnerable area along Easy Street from Straight Wharf to Steamboat Wharf. As the project is implemented, stormwater management needs will need to be studied and addressed via new drainage infrastructure. Additionally, as part of the Downtown strategy, the Town can pilot and showcase best practices for building-scale resilience at 37 Washington Street.*
Resilience Objective & Level of Protection	*Reduce flood risk from frequent tidal flooding in the Downtown core, with benefits to essential public facilities and services, to 7.5 feet NAVD88, just above the elevation of mean monthly high water (MMHW) in 2070. The design strategy should incorporate the ability to adapt the infrastructure to higher elevations in the future, as appropriate.*
Duration of Performance	*40-50 years, depending on timing of implementation* **Priority** *First*
Estimated Cost (all phases)	*Capital Costs: $120M Capital Costs with Contingencies: $150M - $170M Annual Operations and Maintenance: $1.9M*
Estimated Benefits	*$320M in avoided direct physical, economic, and social damages to buildings. Additional benefits not quantified include reducing the long-term risk of service disruptions for roadways and utilities, as well as reduction in flood risk to critical and community facilities, such as the National Grid electrical substation and Town Hall.*
Cobenefit Opportunities	*Adaptation of the Town dock to higher elevations or conversion to a floating dock* *New waterfront resilient public access on Nantucket Land Bank property at Petrel's Landing (New Whale Street and Commercial Street)* *Streetscape improvements via rain gardens, bioswales, and other green infrastructure to manage stormwater* *Potential for local jobs and workforce development during construction*



Total dollar value is for all 40 project in 2021 dollars is $830 - $900 million over 15 years
Reduces $3.4 billion in cumulative losses to 2070

Roughly for every dollar spent, saves about $2.5

Where are we now with progress?

- Coastal Resilience Plan "approved" by Select Board in January 2022
- Several projects already underway around the island
- June 2022, Town with assistance from Coastal Resilience Advisory Committee Submitted a grant application to design Phase 1 of the Downtown Flood Barrier. This is the Easy Street and lower Broad Street area
    - Was not approved for funding but were encouraged to apply again in 2023 and are planning to do so.

How does this help Downtown area and Town Association?

- Over time, the Downtown Flood Barrier will be expanded north and south from Easton Street to Consue Springs
- Support the first phase to make later phases run more smoothly

What else can we do?

- Work on Local Area Plan and incorporate Coastal Resilience planning into it
- Assist with Stormwater Management Plan and other resilience plans that relate to Town Association are

Resilience is a process

Always planning to improve resilience

COASTAL RESILIENCE ADVISORY COMMITTEE

Thanks to Nantucket Town Association & Question?