

Outline for Today

9:00 am Welcome & Introductions

PART I: SELLING THE SEACOAST

9:20 Our Coastal Landscape

9:25 Shoreland and Wetlands Rules

10:00 *SITE VISIT: FLOOD MITIGATION at STRAWBERRY BANKE*

10:30 Break

PART II: FLOOD RISK & RESILIENCY

10:45 Tides and Water Levels

11:05 Determining Flood Risk

11:25 Flood Resiliency

12:00 pm Adjourn



Part 2.

Flood Risk and Resiliency

- Tides and Water Levels
- Determining Flood Risk
- Flood Resiliency

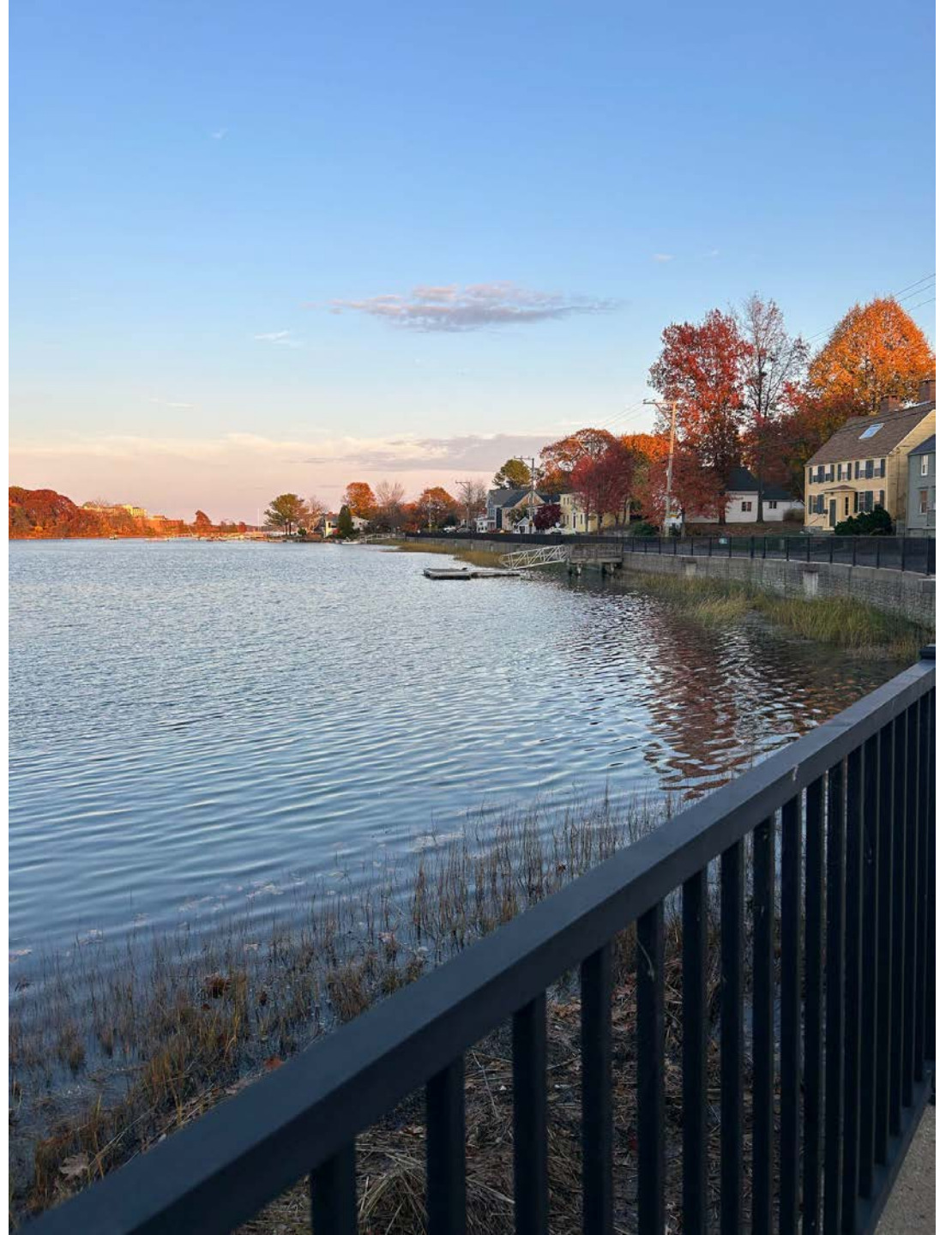


Part 2A. Tides and Water Levels

Part 2A. Tides and Water Levels

- Background on local tides
- Where to get local information about tide predictions and water levels
- How water levels are expected to change in the future

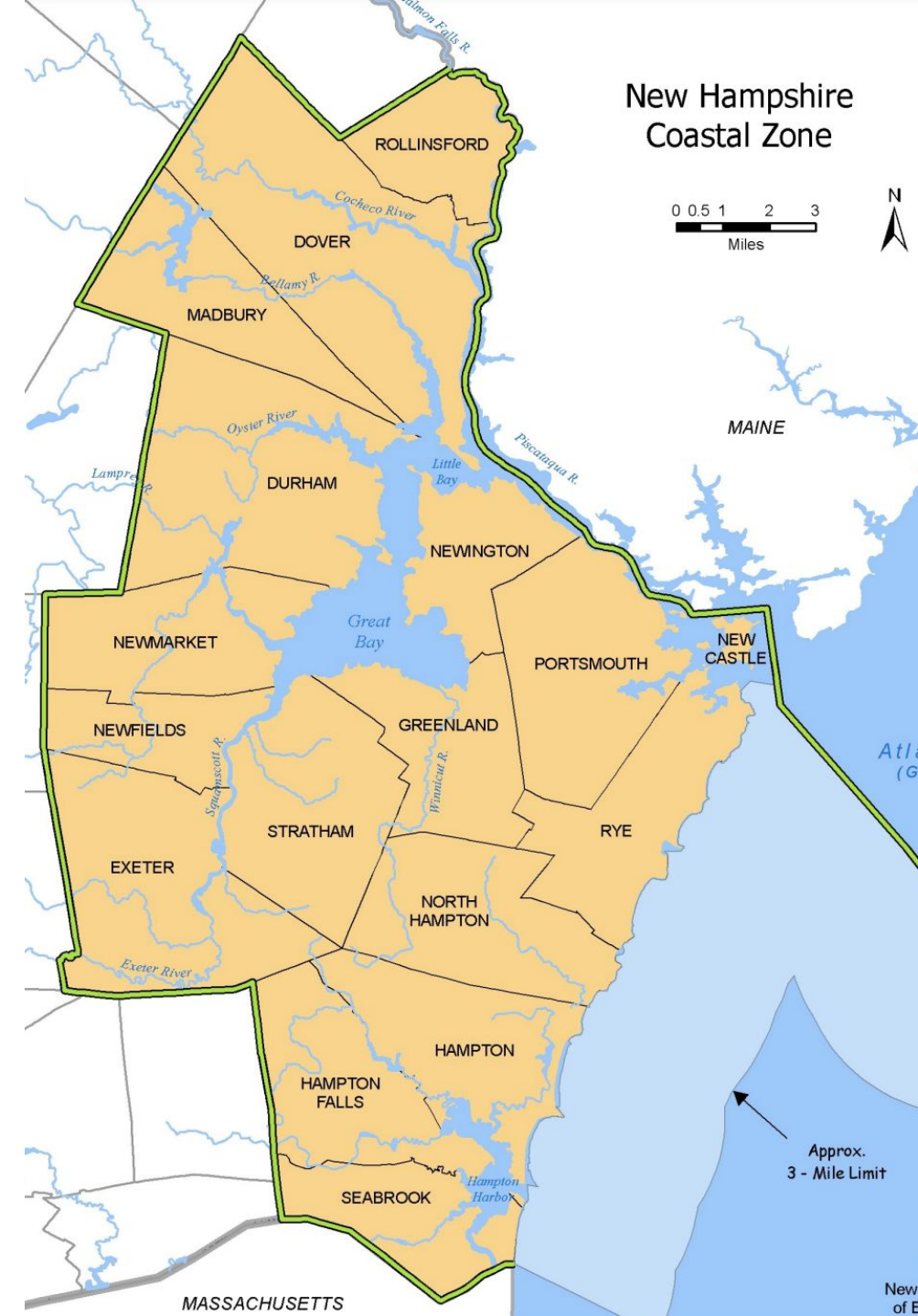




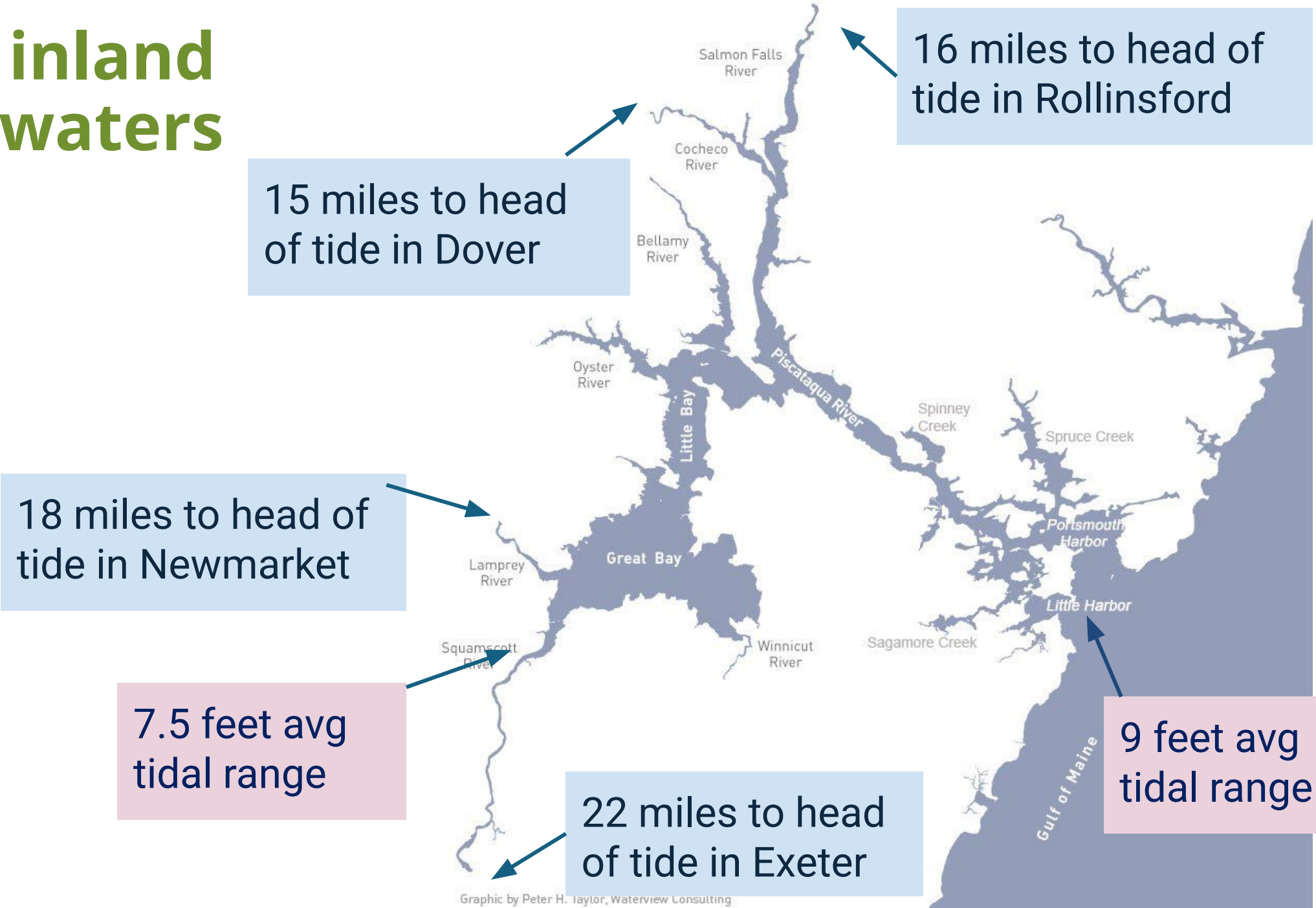
Local tidal patterns

Two high tides and two low tides per day

Average tidal range is around 9 feet



How far inland do tidal waters extend?



Great Bay Estuary



Graphic by Peter H. Taylor, Waterview Consulting

Fall 2021



January 2022



Great Bay Estuary



Great Bay
Discovery Center

Graphic by Peter H. Taylor, Waterview Consulting

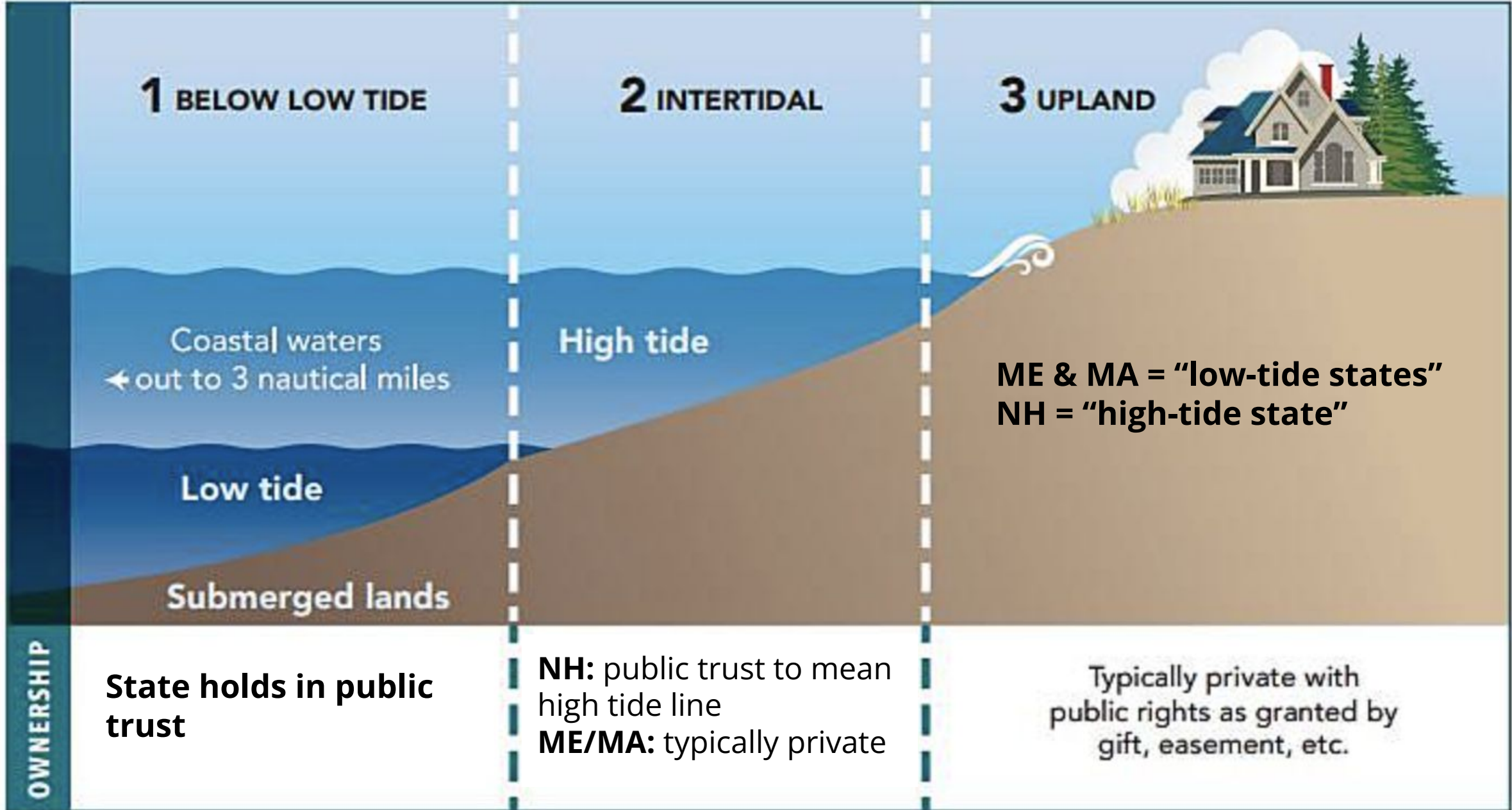


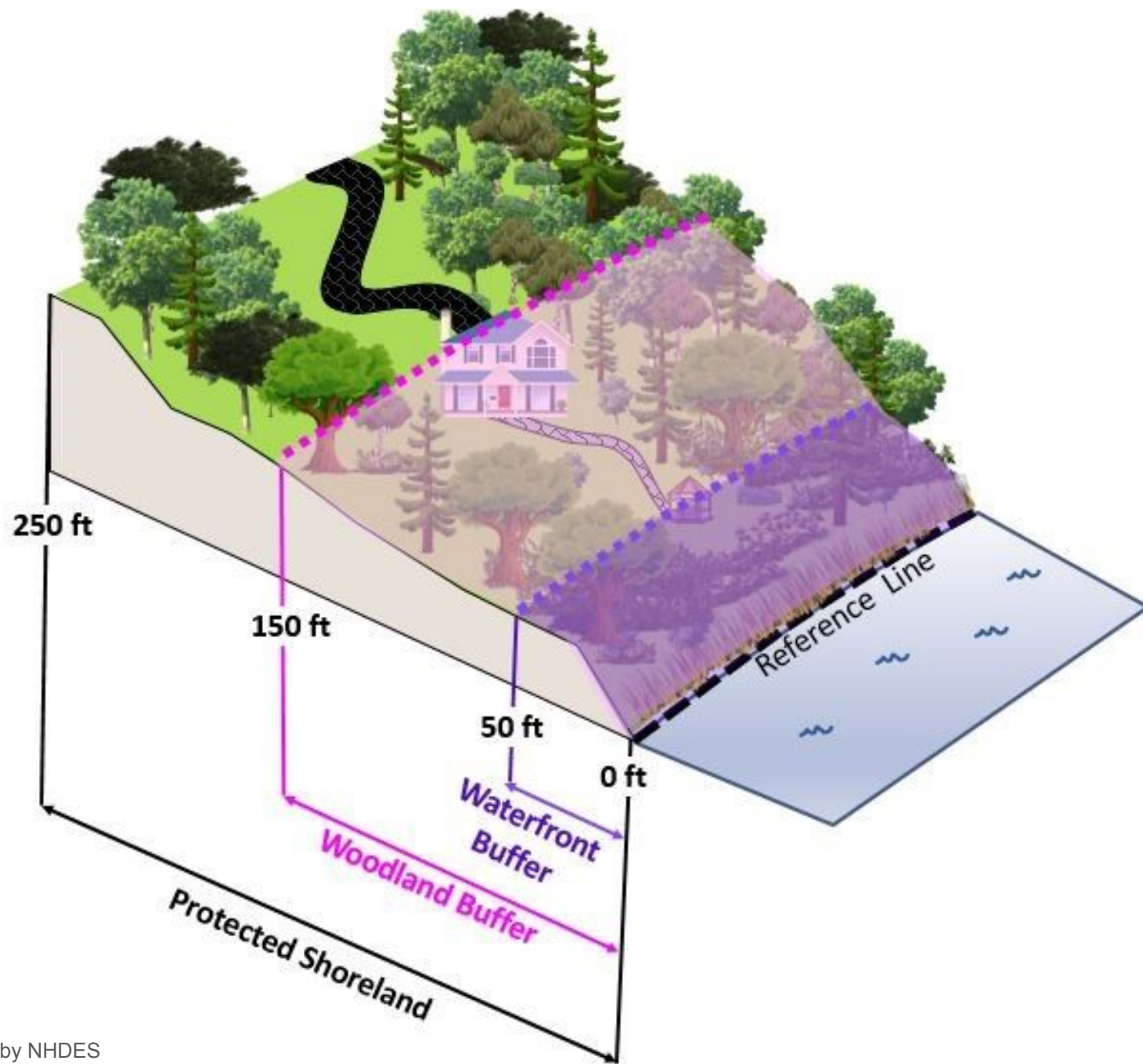
January 2024



Why is it helpful to know about tides?







Where to get local information about tides

ANNUAL TIDE TABLE:

For planning up to 12 months ahead

www.tidesandcurrents.noaa.gov

HYDROGRAPH:

For most accurate 3-day forecasts and real-time tide levels

www.water.noaa.gov

Choose a region on the map
to access your local water levels,
tide and current predictions, and
other oceanographic and
meteorological conditions, or
search below.

Search:



- Tides and Water Levels
- Currents
- PORTS®
- Sea Level and Coastal Flooding
- Meteorological and Oceanographic Data
- Coastal and Great Lakes Forecasts
- GIS and Web Services
- Datum Updates

Alaska



Hawaii & Pacific Islands



Caribbean Islands





Tides & Great Lakes Water Levels

The rising and falling of the sea, “the tides,” are a phenomenon upon which we can always depend. Caused by the gravitational pull of the moon and the sun, tides are very long-period waves that move through the ocean and progress toward the coastlines where they appear as the regular rise and fall of the sea surface. The same happens in the Great Lakes, although the largest tides in the Great Lakes are only about 5 cm and are mostly impacted by precipitation, evaporation and runoff.

CO-OPS maintains the National Water Level Observation Network (NWLON), an observation network with more than 200 permanent water level stations on the coasts and Great Lakes. This system allows NOAA to provide the **official tidal predictions for the nation**. Accurate water level data is critical for safe and efficient marine navigation and for the protection of infrastructure along the coast. The NWLON also provides the national standards for tide and water level reference datums used for nautical charting, coastal engineering, international treaty regulation, and boundary determination. The NWLON is also widely recognized as the key federal component of the Integrated Ocean Observing System (IOOS).

NOAA Tide Predictions

NOAA's official tide predictions.

Water Levels

Real-time water level information updated every 6 minutes.

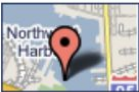


This NWLON station is specially reinforced to withstand hurricanes and other major storm events. The reinforced stations are better able to keep functioning during these events, providing critical information on water levels and winds that aids emergency response organizations.

NOAA Tide Predictions

[About NOAA Tide Predictions](#)

Choose a station using our [Tides and Currents Map](#), click on a state below, or search by station name, ID, or latitude/longitude.



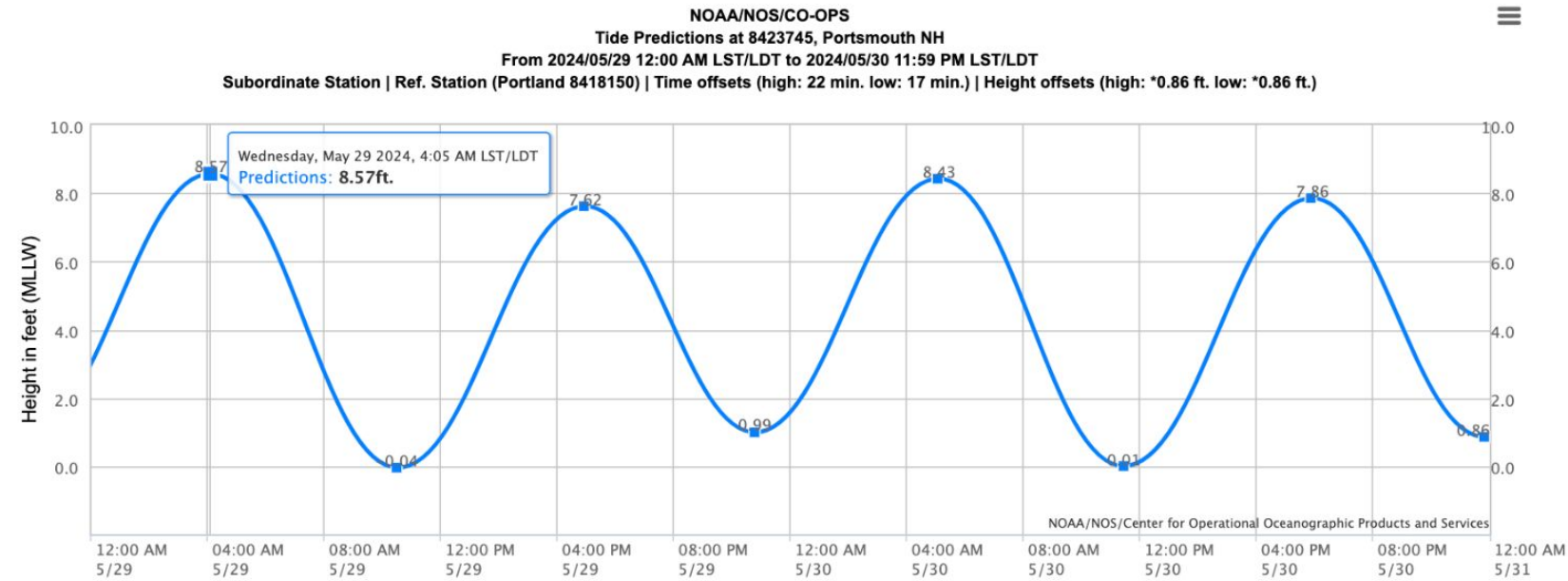
Or search:

Go

[search help](#)

New Hampshire

Name	Id	Lat	Lon	Predictions
MAINE and NEW HAMPSHIRE				
Portsmouth Harbor				
Jaffrey Point	8424601	+43.0567	-70.7133	Subordinate
Gerrish Island	8419688	+43.0667	-70.6967	Subordinate
Fort Point	8423898	+43.0714	-70.7106	Harmonic
Kittery Point	8419807	+43.0817	-70.7033	Subordinate
Seavey Island	8419870	+43.0797	-70.7411	Harmonic
Portsmouth	8423745	+43.0783	-70.7517	Subordinate
Piscataqua River				
Atlantic Heights	8423635	+43.0900	-70.7633	Subordinate
Dover Point	8421897	+43.1217	-70.8333	Subordinate
Dover, Cocheco River	8420411	+43.1983	-70.8683	Harmonic
Salmon Falls River	8419997	+43.1917	-70.8250	Subordinate
Squamscott River RR. Bridge	8422687	+43.0533	-70.9133	Subordinate
Gosport Harbor, Isles of Shoals	8427031	+42.9783	-70.6150	Subordinate
Hampton Harbor	8429489	+42.8950	-70.8167	Subordinate



Today's Tides (LST/LDT)

next tide at

4:05 AM

high

3:11 AM	high	8.69 ft.
9:38 AM	low	-0.08 ft.
4:02 PM	high	7.47 ft.
9:48 PM	low	1.05 ft.

Options for

8423745 Portsmouth

From: May 29 2024

To: May 30 2024

Note: The maximum range is 31 days.

Units

Feet

Timezone

LST/LDT

Datum

MLLW

12 Hour/24 Hour Clock

12 Hour

Data Interval

High/Low

Shift Dates

Back 1 Day Forward 1 Day

Threshold Direction

>=

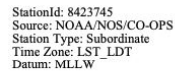
Threshold Value

Update

Plot Daily

Plot Calendar

Data Only

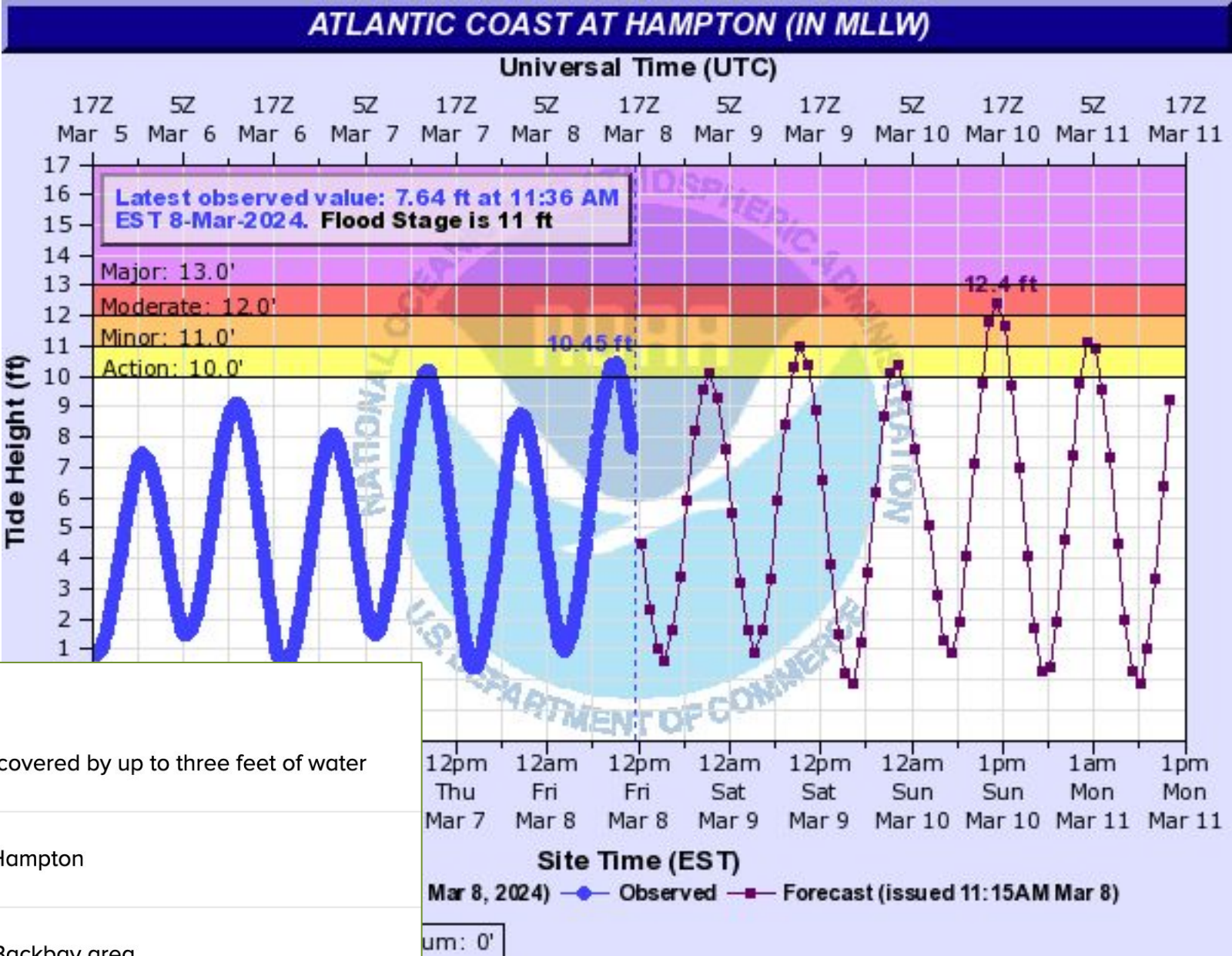
Portsmouth, NH, 2024
(43 04.7N / 70 45.1W)

Time	Height
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October					November					December														
Time		Height			Time		Height			Time		Height			Time		Height							
1	h m ft cm	16	h m ft cm	1	h m ft cm	17	h m ft cm	16	h m ft cm	1	h m ft cm	17	h m ft cm	16	h m ft cm	17	h m ft cm	16	h m ft cm					
05:16 AM	0.4	12	04:28 AM	-0.6	-18	05:46 AM	0.9	27	04:41 AM	-0.4	-12	04:48 AM	1.1	34	05:15 AM	0.1	24	05:15 AM	0.1					
11:31 AM	8.0	244	10:47 AM	9.3	263	10:12 PM	8.3	253	11:01 AM	10.0	305	11:06 AM	8.4	256	11:36 AM	9.6	29	11:36 AM	9.6					
Tu 05:31 PM	0.6	18	W 04:54 PM	-0.9	-27	F 06:16 PM	0.2	6	Sa 05:22 PM	-1.5	-46	Su 05:27 PM	0.1	3	M 06:00 PM	-9.1	-3	06:00 PM	-9.1					
11:47 PM	8.1	247	11:14 PM	9.3	283				11:43 PM	8.7	265	11:48 PM	8.3	223										
2	05:50 AM	0.5	15	17	05:16 AM	-0.8	-24	2	12:34 AM	7.6	232	17	05:31 AM	-0.3	-9	2	05:25 AM	1.1	34	17	12:21 AM	8.2		
12:05 PM	8.1	247	11:35 AM	9.8	299	06:19 AM	1.0	30	11:51 AM	9.9	302	2	05:25 AM	1.1	34	17	06:06 AM	0.1	24	17	12:26 PM	9.3		
W 06:05 PM	0.4	12	Th 05:46 PM	-1.4	-43	Sa 12:35 PM	8.3	253	Su 06:13 PM	-1.4	-43	M 06:05 PM	8.4	256	0	06:06 AM	0.1	24	17	12:26 PM	9.3			
●			O			06:50 PM	0.2	6							0	06:50 PM	-0.8	-28	17	12:26 PM	9.3			
3	12:24 AM	8.0	244	18	12:06 AM	9.4	287	3	01:10 AM	7.5	229	18	12:35 AM	8.5	259	3	12:26 AM	7.2	219	18	01:10 AM	7.9		
06:22 AM	0.6	18	06:04 AM	-0.8	-24	05:52 AM	1.1	34	M 12:41 PM	9.6	293	3	12:26 AM	7.2	219	06:04 AM	7.2	219	18	01:10 AM	7.9			
Th 12:38 AM	8.2	250	F 12:23 PM	10.0	305	Su 12:08 PM	8.3	253	07:05 PM	-1.0	-30	Tu 12:21 PM	8.5	259	06:44 PM	0.0	0	06:44 PM	0.0	0	18	01:15 PM	9.0	
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4	01:00 AM	7.9	241	19	12:59 AM	9.2	280	4	12:46 AM	7.3	223	19	01:10 AM	7.9	241	19	01:05 AM	7.2	219	19	01:59 AM	7.7		
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F 01:09 AM	8.2	250	Sa 01:12 PM	10.0	305	M 12:42 PM	8.2	250	M 12:42 PM	8.2	250	Tu 01:33 PM	9.6	292	W 01:02 PM	8.5	259	Th 02:04 PM	8.6	266	19	01:59 AM	7.7	
07:16 AM	0.4	12	07:30 PM	-1.5	-46	07:03 PM	0.3	9	07:03 PM	0.3	9	07:58 PM	-0.2	-18	07:26 PM	0.0	0	08:26 PM	-0.1	-	19	01:59 AM	7.7	
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			08:09 PM	7.7	235	07:03 PM	8.2	250	08:18 PM	1.2	319	26	01:32 AM	1.1	34	26	01:25 AM	1.5	46	26	01:25 AM	1.5		
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Sa 12:57 PM	1.4	43	Su 02:50 PM	1.2	37	Tu 01:46 PM	0.1	3	W 02:53 PM	7.8	238	27	02:17 AM	7.1	219	27	02:13 AM	1.5	46	27	02:13 AM	1.5		
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Su 02:03 PM	1.0	30	M 03:41 PM	1.0	30	W 04:42 PM	-0.5	-15	09:49 PM	7.2	219	28	02:58 AM	8.1	34	28	02:58 AM	8.1	34	28	02:58 AM	8.1		
08:26 AM	8.4	256	09:55 PM	7.7	235	09:04 PM	8.7	265	09:49 PM	7.2	219	28	02:58 AM	8.1	34	28	02:58 AM	8.1	34	28	02:58 AM	8.1		
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M 03:05 PM	0.4	12	Tu 04:25 PM	0.7	21	Th 03:38 PM	-1.1	-34	F 04:13 PM	0.3	9	29	03:36 AM	1.1	34	29	03:40 AM	1.3	4	29	03:40 AM	1.3		
09:26 PM	8.8	268	10:38 PM	7.7	235	09:57 PM	8.8	268	10:30 PM	7.3	223	29	03:36 AM	1.1	34	29	03:40 AM	1.3	4	29	03:40 AM	1.3		
15	03:38 AM	-0.3	-9	30	04:02 AM	0.8	24	15	03:51 AM	-0.5	-15	30	04:12 AM	1.1	34	30	04:21 AM	1.1	34	30	04:21 AM	1.1		
09:58 AM	8.6	262	10:56 AM	8.1	247	10:11 AM	9.9	302	10:10 AM	8.3	253	30	04:12 AM	1.1	34	30	04:21 AM	1.1	34	30	04:21 AM	1.1		
Tu 04:01 PM	-0.3	-9	W 05:05 PM	0.5	15	F 04:30 PM	-1.4	-43	Sa 04:50 PM	0.2	6	30	04:12 AM	1.1	34	30	04:21 AM	1.1	34	30	04:21 AM	1.1		
10:21 PM	9.1	277	11:19 PM	7.7	235	O 10:50 PM	8.8	268	11:09 PM	7.3	223													

	h	m	ft	cm
17	12:21	AM	8.1	247
	06:06	AM	0.2	6
Tu	12:26	PM	9.3	283
	06:50	PM	-0.8	-24

Hampton hydrograph



Flood Impacts ¹

- 13.3 - Cars flooded with low lying Backbay roads in Hampton covered by up to three feet of water
- 12 - Roads flooded up to a foot deep in the Backbay area of Hampton
- 11 - Onset of flooding along low lying streets in the Hampton Backbay area

Seavey Island hydrograph

Flood Impacts ⓘ

13.5 - Record flooding. Expect inundation of roads and buildings along the waterfront and back bays that has never occurred in previous events. Several vulnerable coastal roads inundated with several feet of water. Route 1 in Portsmouth inundated near Sagamore Creek. Route 1B inundated in multiple locations on all access points to New Castle.

13 - Near flood of record with major widespread coastal flooding expected. Numerous buildings inundated along Portsmouth waterfront and the North Mill Pond area. Residential roads in Kittery flooded, isolating neighborhoods. Route 1B on the causeway and Wentworth Road leading to New Castle are most impacted.

12.5 - Flooding impacts roads in New Castle with water approaching the 1B causeway and Wentworth Road.

12 - Moderate flooding of low lying coastal areas in Kittery, Portsmouth, New Castle, and Newington. Flooding expands in Portsmouth with numerous streets inundated along the waterfront. Some commercial and residential buildings in Portsmouth and Kittery impacted.

11.5 - Flooding impacts Ceres and Mechanic Street in Portsmouth.

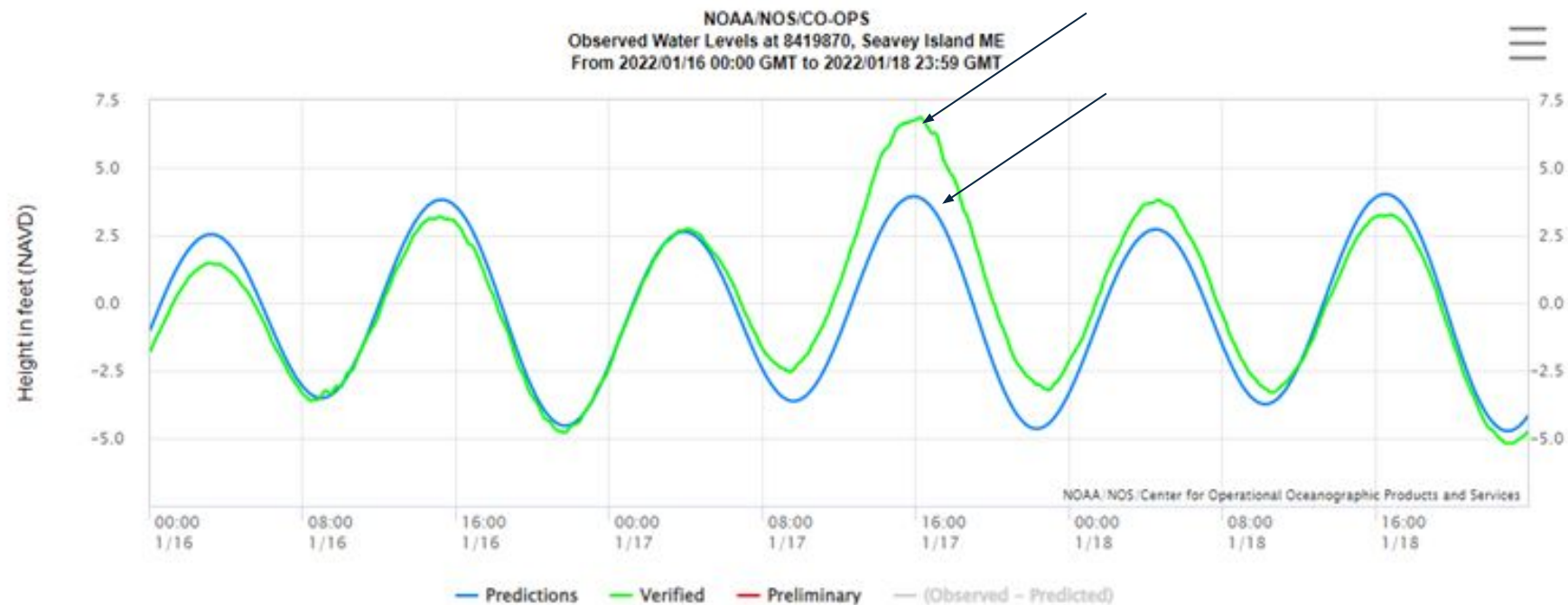
11 - Minor flooding of low lying coastal locations in Kittery, Portsmouth, New Castle, and Newington. Vulnerable waterfront pier locations, low lying causeways, and roads could see up to 1 foot of inundation.

→ tidesandcurrents.noaa.gov/waterlevels.html?id=8419870&units=standard&...

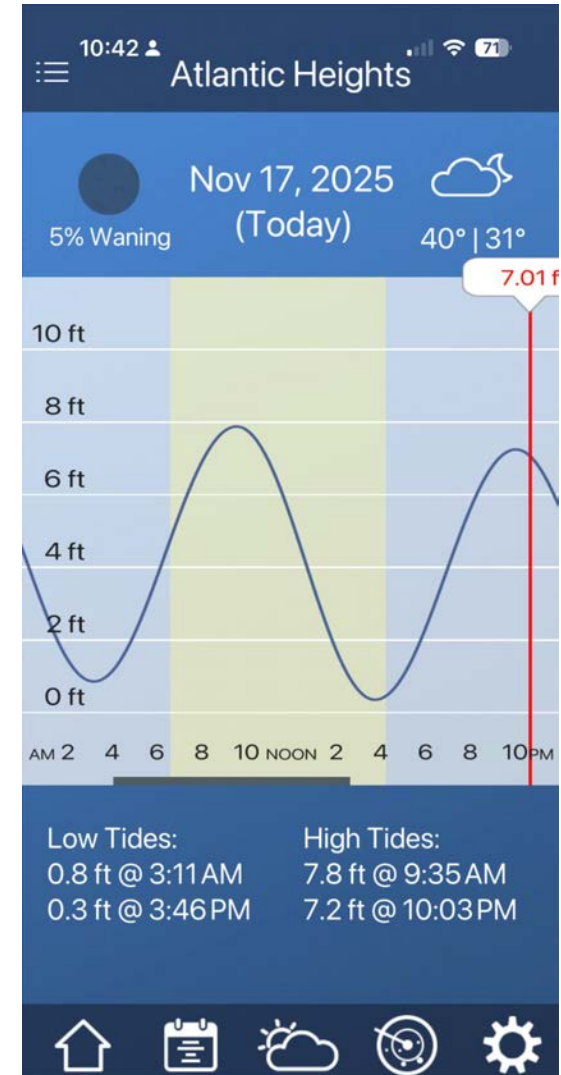
Home / Products / Water Levels / 8419870 Seavey Island, ME ☆ Favorite St

Station Info ▾ Tides/Water Levels ▾ Meteorological Obs. Phys. Oceanography

A storm caused water levels to be 3 feet higher than predicted



Tide info on the go



Rising sea levels

Local sea level rose about **8.5 inches** over the last century

Future projections:

- 1.3' by 2060
- 3.4' by 2100
(compared to 2000 levels)



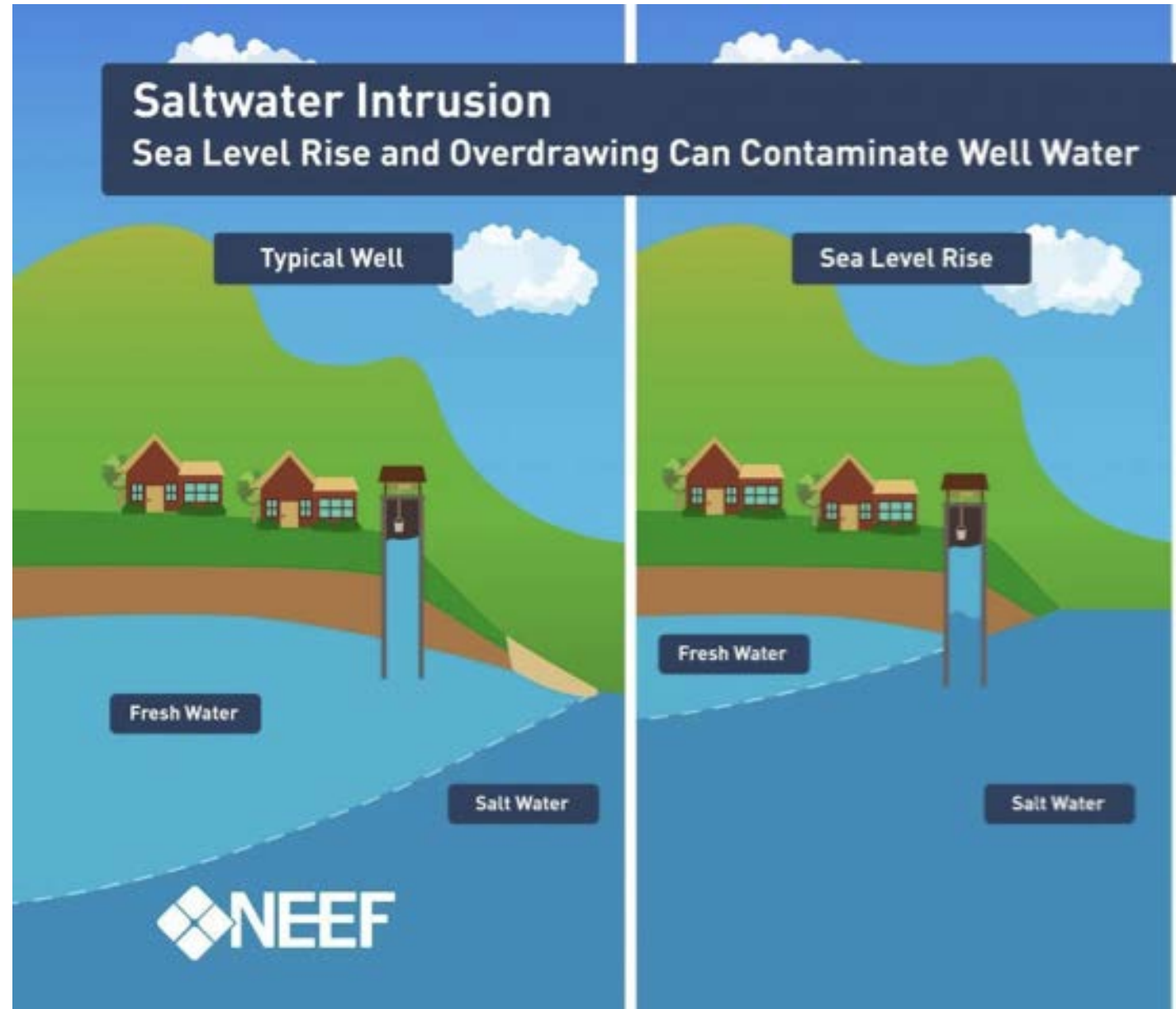
Hampton Tide Gauge Study

- At least 1 high tide over 10 feet was recorded on **30-40% of days each year**
- High tide flooding occurs approximately **3x more frequently than NOAA tide charts predict**

(Chin and Howard, 2021)



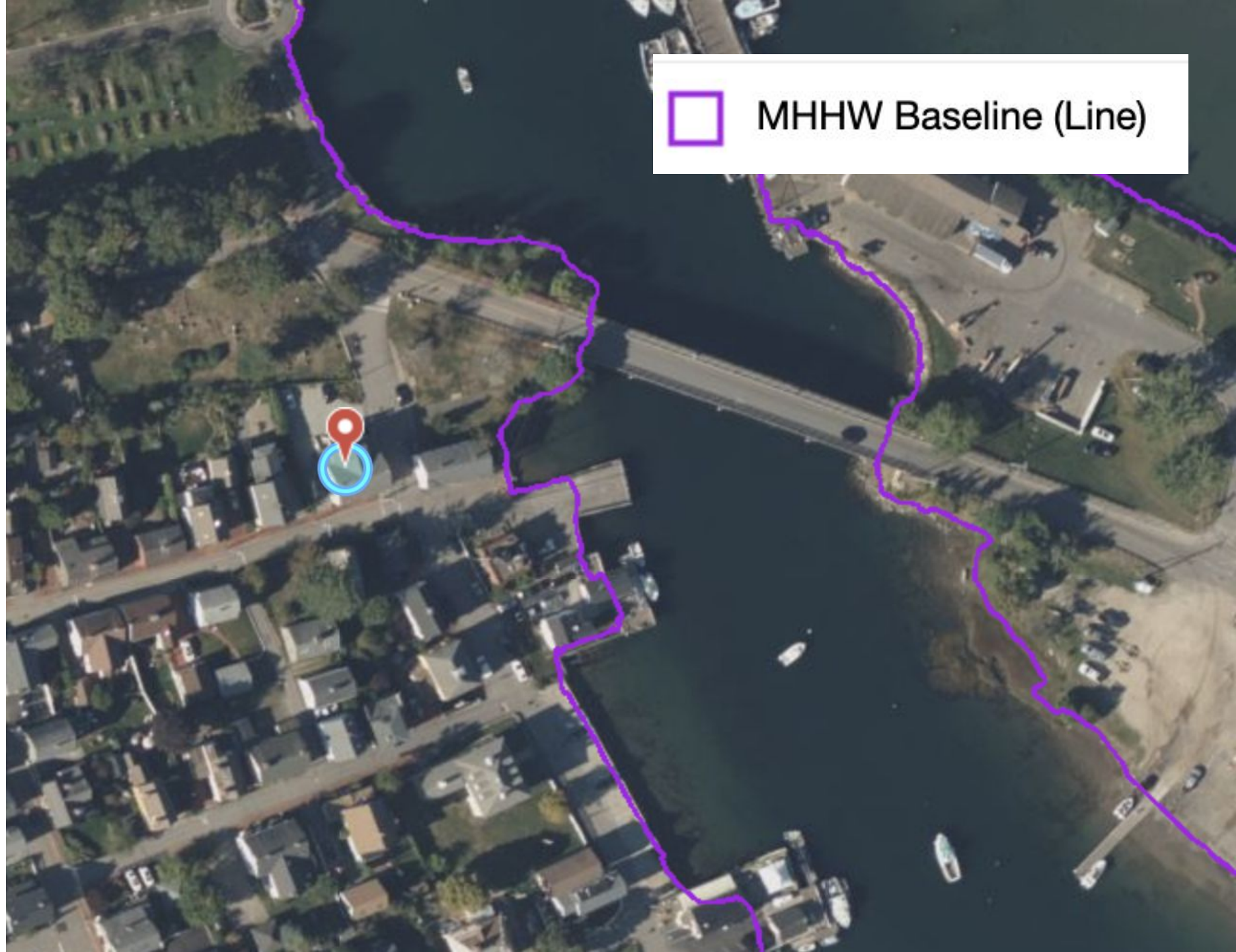
Groundwater rise



RESOURCE: NH Coastal Viewer

Oceans and Coasts
> Sea Level Rise
Scenarios

Purple line =
MHHW - Mean
Higher High Water
(average of the
higher high tide)



RESOURCE: NH Coastal Viewer

Oceans and
Coasts > Sea
Level Rise
Scenarios

+2' sea-level rise



RESOURCE: NH Coastal Viewer

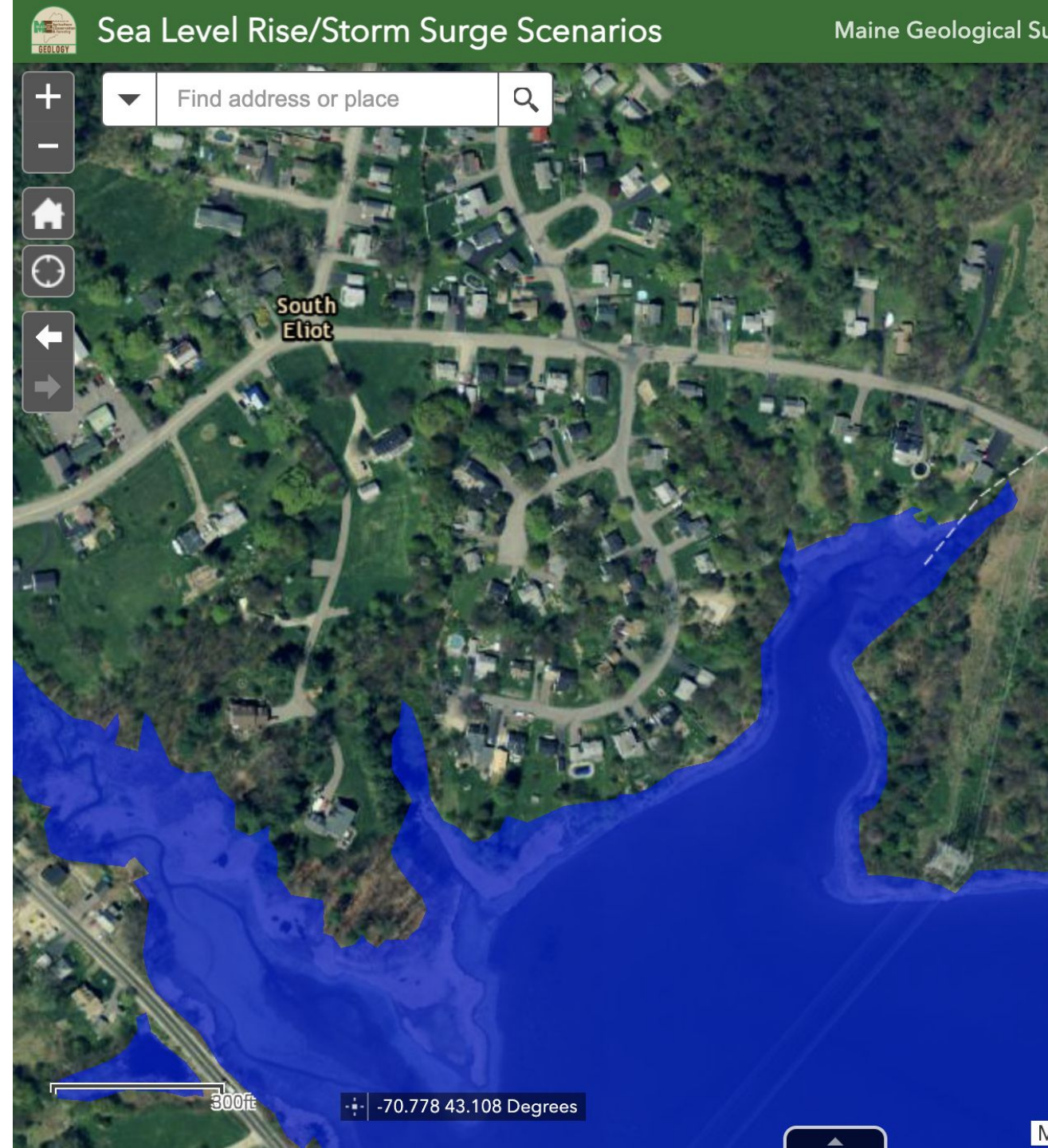
Oceans and
Coasts > Sea
Level Rise
Scenarios

+2' sea-level rise
+ storm



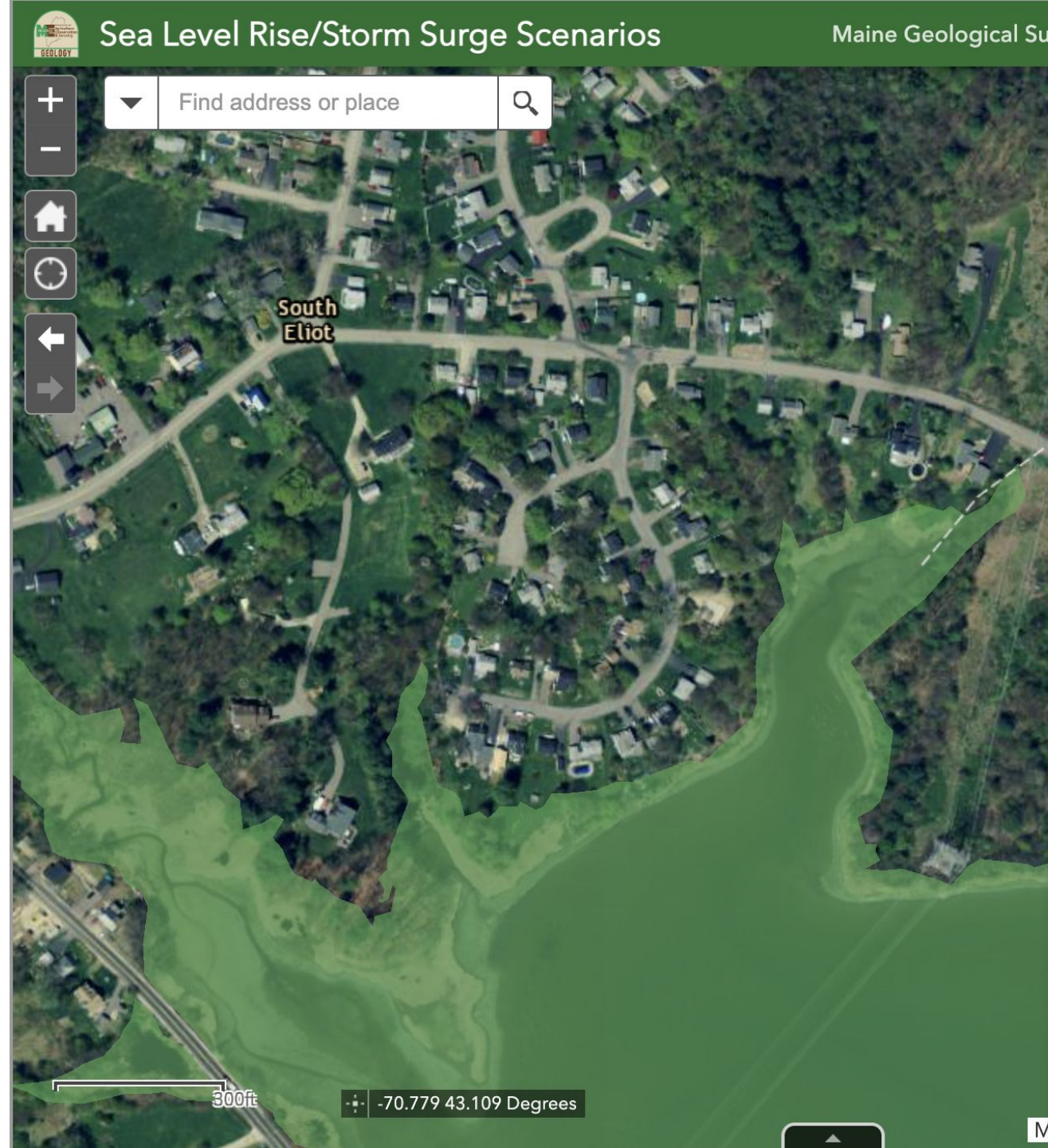
RESOURCE: ME Sea Level Rise Mapper

Highest Astronomical Tide (HAT)



RESOURCE: ME Sea Level Rise Mapper

Highest Astronomical Tide (HAT)
+1.6' of sea-level rise



RECAP: Tides and Water Levels

Knowing local tide information is helpful for a variety of reasons

High tide extent is increasing with sea level rise, and frequency of flooding is increasing

A variety of resources and tools are available



The background is a solid green color. On the left side, there is a complex, abstract white line drawing. It consists of numerous overlapping, irregular, and somewhat organic shapes, some of which are enclosed by single lines, resembling a stylized map or a series of interconnected paths. The lines are thin and white, contrasting sharply with the green background.

QUESTIONS?



Part 2B. Determining Flood Risk



Poll Question

What percent of National Flood Insurance Program claims are from damaged buildings located outside of a high-risk flood zone?

- a. 10%
- b. 20%
- c. 30%
- d. 40%
- e. 50%

Flood Risk

- Anywhere it can rain, it can flood.
- Everyone lives in a flood zone with some level of flood risk.
- Chance of flooding over 30 years are 5 times higher than a home fire.
- A property does not have to be near water to flood.
- Floods can result from storms, melting snow, hurricanes, drainage system backups, broken water mains or fire hydrants, and changes to land from new construction.

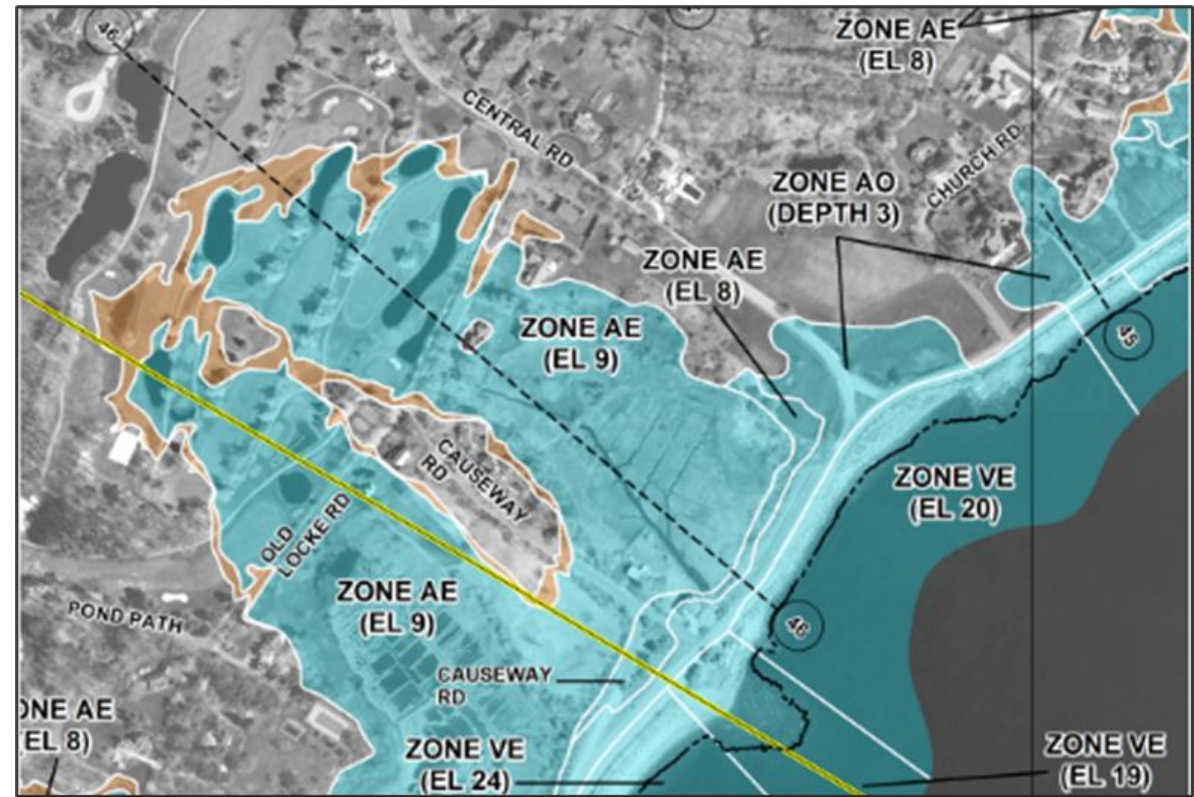
40%
Over 40% of NFIP claims are from outside
the high-risk zones



Determining Flood Risk

FEMA Floodplain Maps are the source for:

- Federal lender requirements
- NH and ME flood disclosure
- Development requirements within floodplain areas



Lender Floodplain Requirements and Notification of Flood Risk

- Flood Disaster Protection Act of 1973
- Lending institutions cannot make, increase, extend, or renew a loan for a building located in the FEMA mapped floodplain without flood insurance (NFIP or private insurance).
- It is the responsibility of the lender to:
 - determine if the property is in the Special Flood Hazard Area as shown on FEMA's map,
 - document the determination, and
 - ensure the insurance is maintained through the life of the loan.

NH Flood Disclosure Notification

Effective 7/19/24:

RSA 477:4-d Notification Required. –

I. Prior to or during the preparation of an offer for the purchase and sale of any interest in real property to be used or proposed to be used for a one to 4 family dwelling, the seller shall disclose, in writing, the following information to the buyer. **The buyer shall acknowledge receipt of the disclosure by signing a copy of the disclosure:**

(a) Information relative to the type of private water supply system...

(b) Information relative to the private sewage disposal system...

(c) Information relative to the insulation...

(d) Information relative to the property's location within a flood zone and whether or not the seller has flood insurance.

NH Flood Disclosure Notification

Effective 1/1/25: the addition of flood (and PFAS) to RSA 477:4-a:

Flood: Properties in coastal areas and along waterways may be subject to increased risk of flooding over time. A standard homeowners insurance policy typically does not cover flood damage. **The buyer is encouraged to determine whether separate flood insurance is required and consult the Federal Emergency Management Agency's flood maps (FEMA.GOV) in order to determine if the property is in a designated flood zone.**

NEW HAMPSHIRE BUYER'S NOTIFICATION DISCLOSURE

In accordance with New Hampshire law (Section 477:4-a), it is required prior to the execution of any contract for the purchase and sale of any interest in real property, which includes a building, that the seller, or the seller's agent, provide this notification to the buyer.

- I. **Radon:** Radon, the product of decay of radioactive materials in rock, may be found in some areas of New Hampshire. Radon gas may pass into a structure through the ground or through water from a deep well. Testing of the air by a professional certified in radon testing and testing of the water by an accredited laboratory can establish radon's presence and equipment is available to remove it from the air or water.
- II. **Arsenic:** Arsenic is a common groundwater contaminant in New Hampshire that occurs at unhealthy levels in well water in many areas of the state. Tests are available to determine whether arsenic is present at unsafe levels, and equipment is available to remove it from water. The buyer is encouraged to consult the New Hampshire department of environmental services private well testing recommendations (www.des.nh.gov) to ensure a safe water supply if the subject property is served by a private well.
- III. **Lead:** Before 1978, paint containing lead may have been used in structures. Exposure to lead from the presence of flaking, chalking, chipping lead paint or lead paint dust from friction surfaces, or from the disturbance of intact surfaces containing lead paint through unsafe renovation, repair or painting practices, or from soils in close proximity to the building, can present a serious health hazard, especially to young children and pregnant women. Lead may also be present in drinking water as a result of lead in service lines, plumbing and fixtures. Tests are available to determine whether lead is present in paint or drinking water.

The buyer shall acknowledge receipt of this notification by signing below:

Buyer's Signature: _____ Date: _____

Print Name: _____

Buyer's Signature: _____ Date: _____

Print Name: _____

Maine Flood Disclosure Notification

7. Flood hazard. Information regarding potential flood risks, including:

A. Whether, at the time the seller provides the information to the purchaser, **the property is located wholly or partly within an area of special flood hazard mapped on the effective flood insurance rate map** issued by the Federal Emergency Management Agency on or after March 4, 2002; the federally designated flood zone for the property indicated on that flood insurance rate map; and a copy of the relevant panel of that flood insurance rate map.

B. Whether, **during the time that the prospective seller has owned the property:**

- (1) **Any flood events affected the property or a structure on the property;**
- (2) **Any flood-related damage to a structure occurred on the property;**
- (3) **Any flood insurance claims were filed for a structure on the property** and, if so, the date of each claim; and
- (4) **Any past disaster-related aid was provided related to the property or a structure** on the property from federal, state or local sources for the purposes of flood recovery and, if so, the date of each payment.



MAINE ASSOCIATION OF
REALTORS®
Your Real Estate Experts

FLOOD HAZARD DISCLOSURE &

FIRMette Step by Step How To

effective AUGUST 9, 2024

The Flood Hazard disclosure requirement applies to **ALL property types!**

On the Flood Hazard section of the Property Disclosure and the 2024 Addendum, answer ALL of the questions fully.

For the following question—*Is the property currently located wholly or partially within an area of special flood hazard mapped on the effective flood insurance rate map issued by the Federal Emergency Management Agency on or after March 4, 2002?* ****You will need a FIRMette to answer this question****

Follow these steps to generate a FIRMette:

1. Visit [Maine Floodplain Management Program website](https://www.maine.gov/dacf/flood/index.shtml): (<https://www.maine.gov/dacf/flood/index.shtml>)

Click on "Floodplain Mapping Resources" on the left column -----



2. Click on the "Maine Floodplain Maps" link. Here a window will open to [FEMA Flood Map Service Center: Search By Address](#)

- Accessing Preliminary Pending and Effective Flood Insurance Rate Maps on the FEMA Map Service Center and Maine Flood Hazard Map (PDF 0.5MB)
- View the [Maine Flood Hazard Map](#) application. This interactive web map contains the following flood hazard layers:
 - National Flood Hazard Layers (NFHL): This layer contains the most current digital FIRM maps accepted and approved by FEMA
 - Q3 Flood Maps: This is a layer of digitized flood zone should be used with confirmation from the official, printed maps.
- The [FEMA Map Service Center](#) is an excellent source of flood hazard data and maps. The home page has a helpful index of commonly used links are provided below:
 - [Effective Date for Floodplain Maps \(alphabetical listing\)](#)
 - Online access to [Maine Flood Hazard Map](#)
 - [Check for changes to floodplain maps](#)
 - [Flood Insurance Rate Studies \(FIS\)](#) provide the basis for establishing floodplains. The FIS has several sections but most importantly it details:
 - The study area
 - Engineering methods used to determine base flood elevations
 - Exhibits showing flood profiles
 - Tables showing floodway data, summary of discharges and still water elevations.

How to check the property and create a FIRMette

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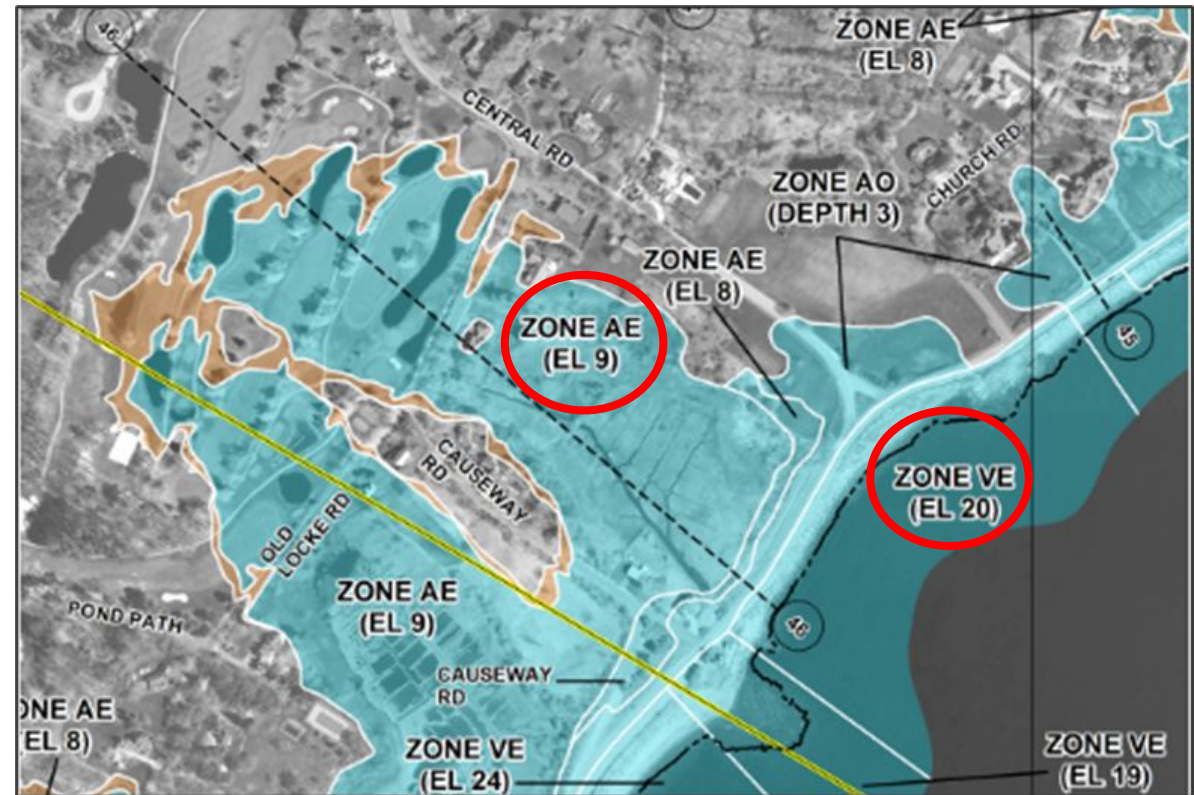
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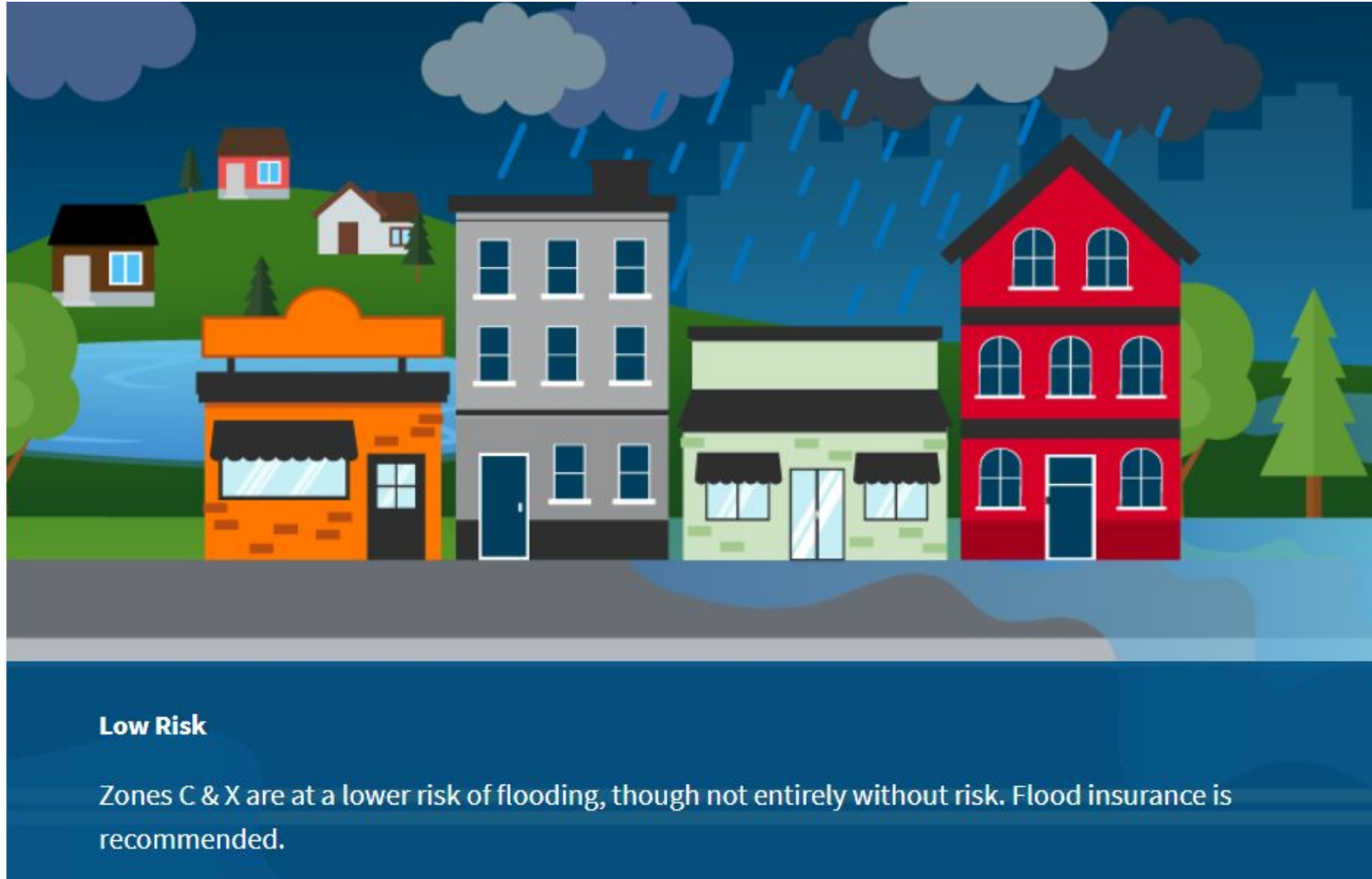
1

FEMA Floodplain Maps

- Floodplain maps have been developed since 1970s
- Shows the 1% annual chance flood and in some areas the base flood elevation
- Updates to the engineering analyses generally occur in more developed and high risk areas
- Do not account for future conditions



Low Flood Risk



Moderate Flood Risk



Moderate Risk

B & X Zones represent areas with a moderate risk of flooding. These areas may have reduced their risk with mitigation efforts such as levees, or experience shallow flooding, with water usually less than 1 foot deep or covering less than 1 square mile. Flood insurance is recommended.



High Flood Risk (Non-Coastal)



High Risk

Zones A, AE, AH, AO, AR and A99 are high-risk flood areas, due to proximity to a pond, stream, river or protective barrier under construction. In communities that participate in the NFIP, flood insurance is mandatory if mortgages are federally backed.

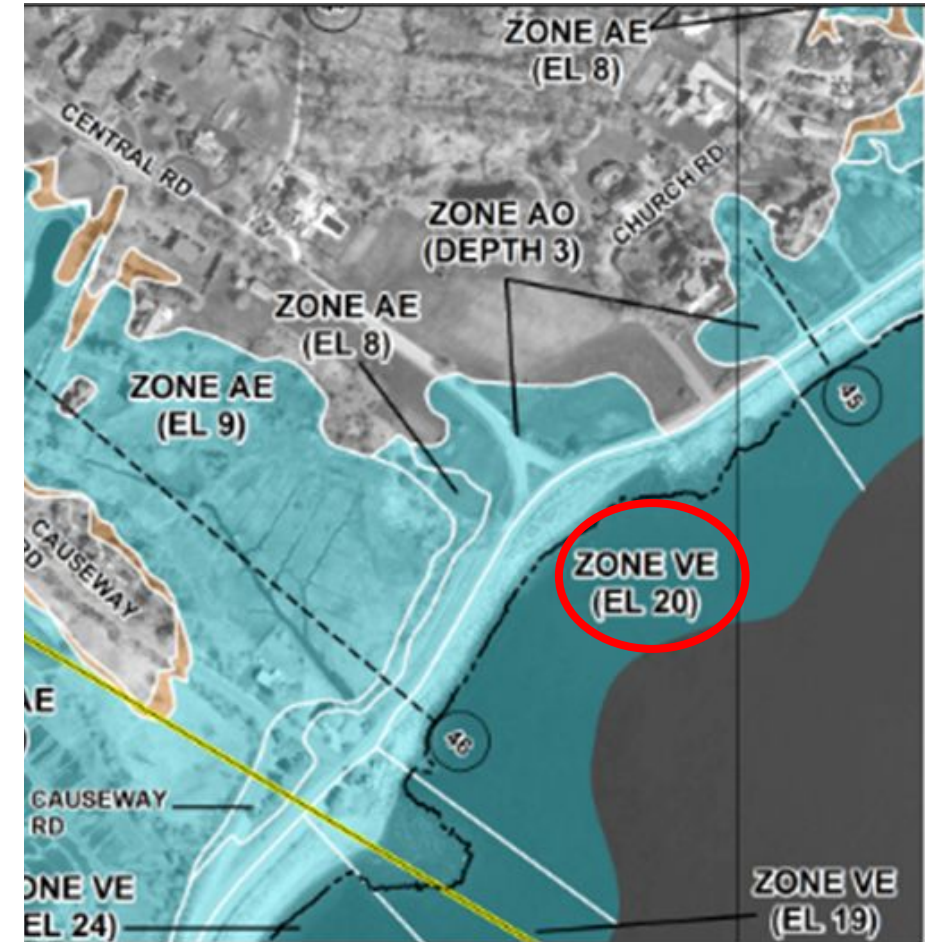


High Flood Risk (Coastal)



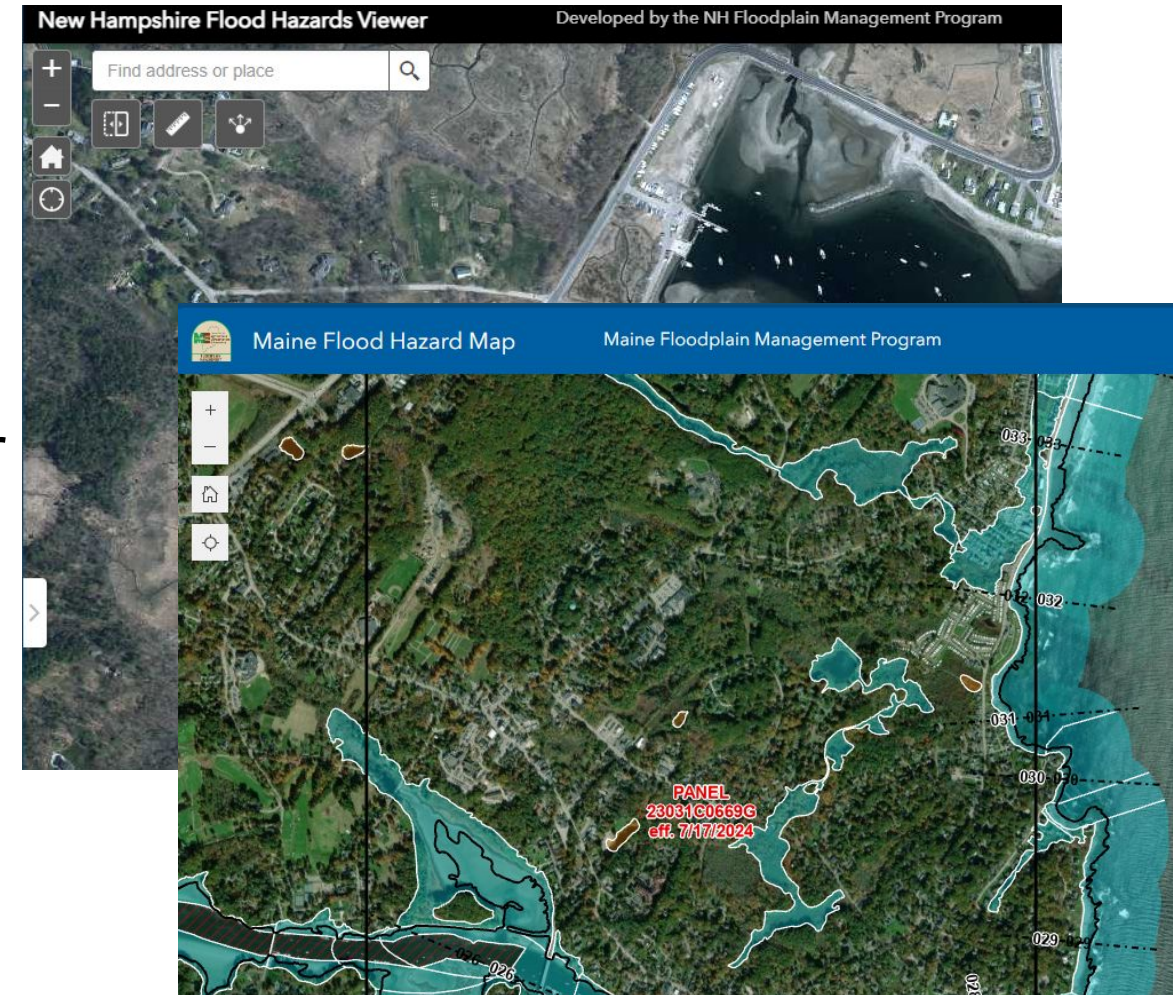
High Risk Coastal

Zones V and VE are high-risk coastal areas with an additional hazard from storm waves. These areas have a 26% chance of flooding over the life of a 30-year mortgage. In communities that participate in the NFIP, flood insurance is mandatory for federally backed mortgages.

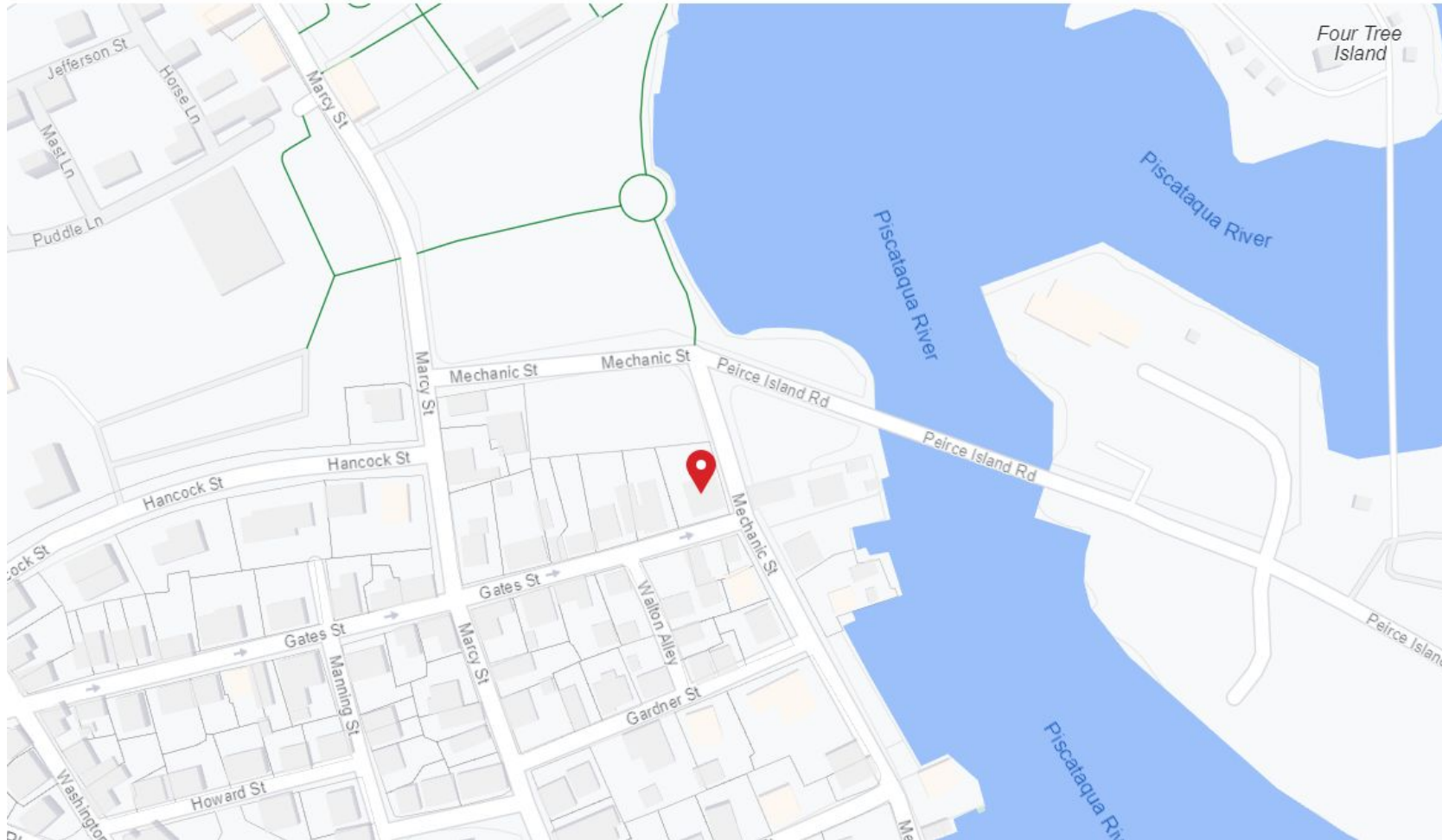


Where to View FEMA Maps

- FEMA Map Service Center
 - Historic, Preliminary, and Effective FIRMs and FIS
 - GIS Data
- FEMA National Flood Hazard Viewer
- NH Coastal Viewer
- ME Flood Hazard Map Viewer



Mapping Demonstration: 213 Gates St. Portsmouth, NH



FEMA Map Service Center

Step 1. Go to the FEMA Map Service Center at: <https://msc.fema.gov/portal/home>

Step 2. Enter address and click Search

FEMA Flood Map Service Center: Search By Address

Enter an address, place, or coordinates: ?

213 Gates Street, Portsmouth, NH

Search



Whether you are in a high risk zone or not, you may need [flood insurance](#) because most homeowners insurance doesn't cover flood damage. If you live in an area with low or moderate flood risk, you are 5 times more likely to experience flood than a fire in your home over the next 30 years. For many, a National Flood Insurance Program's flood insurance policy could cost less than \$400 per year. Call your insurance agent today and protect what you've built.

Learn more about [steps you can take](#) to reduce flood risk damage.

Search Results—Products for PORTSMOUTH, CITY OF

[Show ALL Products »](#)

The flood map for the selected area is number **33015C0259F**, effective on **1/29/2021**

DYNAMIC MAP



PRINT MAP/
FIRMette

MAP IMAGE



DOWNLOAD
FIRM PANEL

Changes to this FIRM ?

- Revisions (0)
- Amendments (2)
- Revalidations (1)

To create a printable PDF copy of map, click on Dynamic Map

Map panel number and map effective date for property

Step 3. Verify location is correct (zoom in/out)



National Flood Hazard Layer FIRMette



70°45'21"W 43°4'44"N



Legend

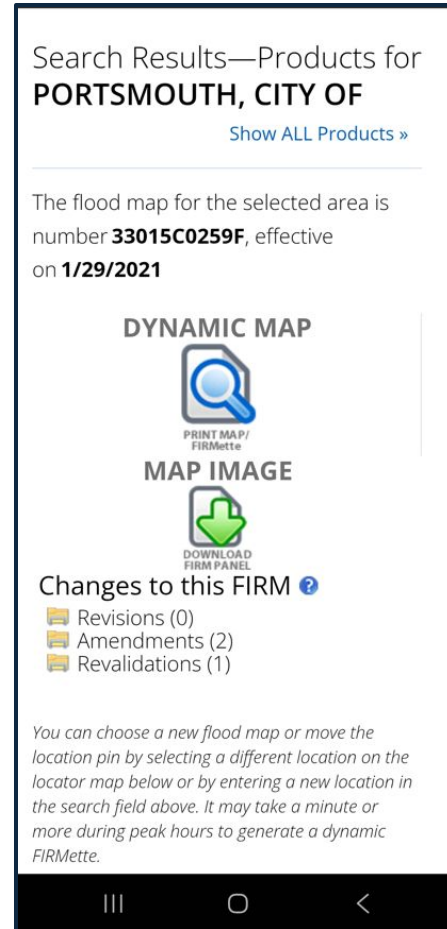
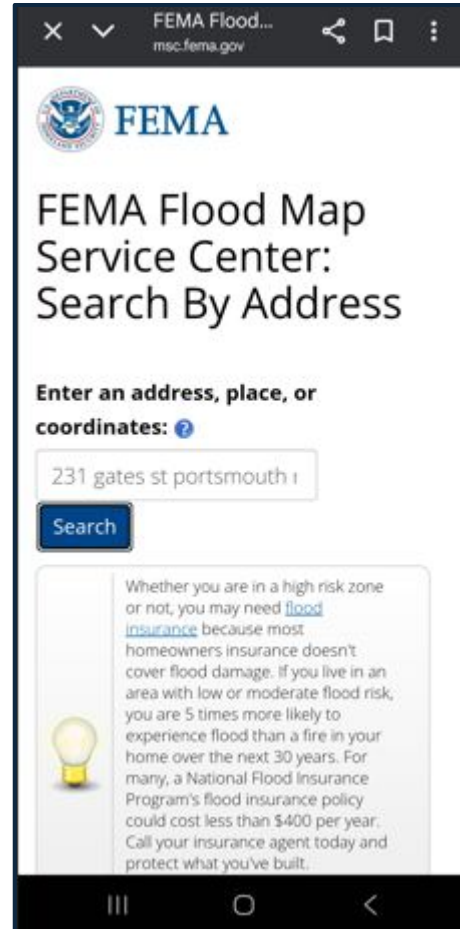
KFF FIRM REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

High Risk	Without Base Flood Elevation (BFE) Zone A, V, A99
SPECIAL FLOOD HAZARD AREAS	With BFE or Depth Zone AE, AO, AH, VE, AR
	Regulatory Floodway
Moderate Risk	0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
	Future Conditions 1% Annual Chance Flood Hazard Zone X
	Area with Reduced Flood Risk due to Levee. See Notes, Zone X
OTHER AREAS OF FLOOD HAZARD	Area with Flood Risk due to Levee Zone D
Low Risk	NO SCREEN Area of Minimal Flood Hazard Zone X
	Effective LOMRs
OTHER AREAS	Area of Undetermined Flood Hazard Zone D
GENERAL STRUCTURES	Channel, Culvert, or Storm Sewer
	Levee, Dike, or Floodwall
OTHER FEATURES	Cross Sections with 1% Annual Chance Water Surface Elevation
	Coastal Transect
	Base Flood Elevation Line (BFE)
	Limit of Study
	Jurisdiction Boundary
	Coastal Transect Baseline
	Profile Baseline
	Hydrographic Feature
MAP PANELS	Digital Data Available
	No Digital Data Available
	Unmapped

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards.

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 10/21/2024 at 10:31 AM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

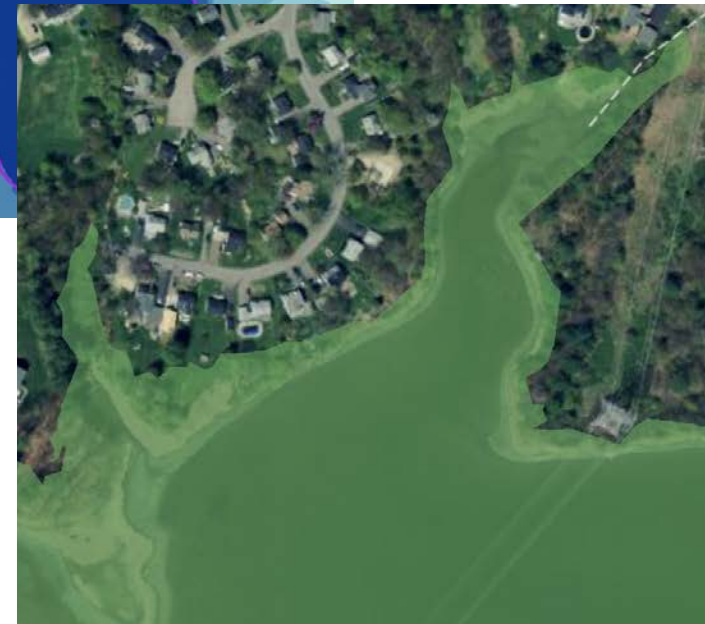


Key Questions for Buyers to Ask Sellers about Flooding

1. Has the home flooded before? If so, how often and which parts of the property did the flooding impact (e.g., basement, ground floor, etc.)?
2. Can the property withstand storm surge or flood waters?
3. If there has been previous flooding, where did the water enter the home?
4. If there has been previous flooding, roughly how much water impacted the interior of the house?
5. If there was previous flooding, what remediations did you put in place?
6. Has there been flooding on adjacent streets?
7. Does the property have a generator and sump pumps?
8. Do you have a mold inspection report available for review?
9. What flood risk mitigations have you put in place on the property?

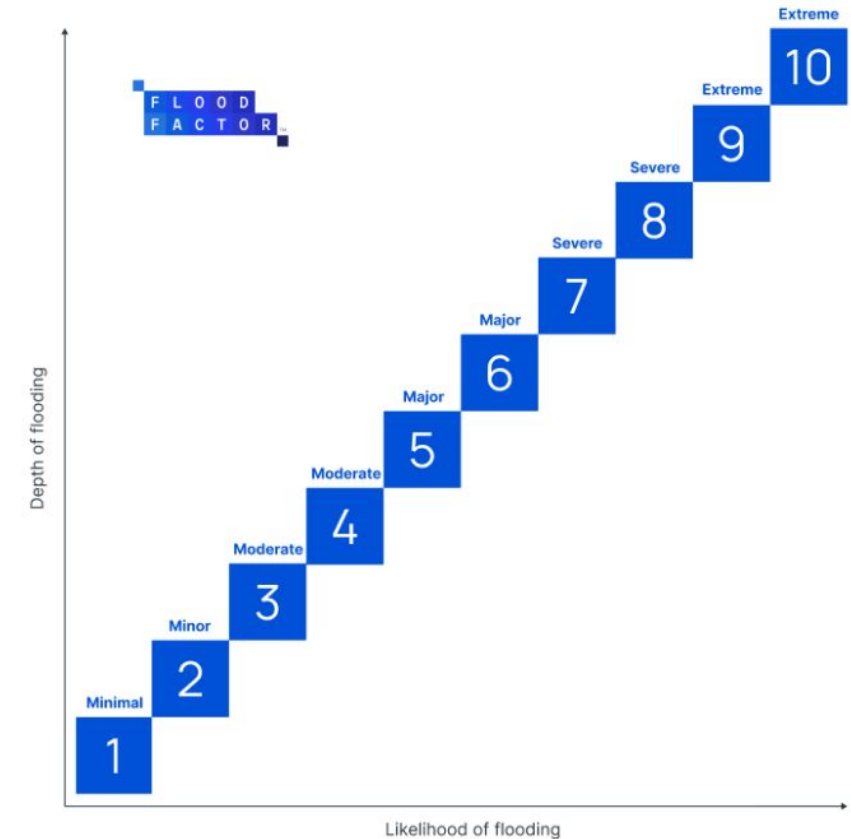
Future Flood Risk Tools

- Sea Level Rise Mapping Viewers
 - NH Coastal Viewer
 - ME Sea Level Rise Mapper
- Flood Factor[®] - First Street Foundation
 - Used by Realtor.com and Zillow



Flood Factor[®]

- Created by the First Street Foundation
- Publicly available flood risk (and other climate risk) assessments for individual properties.
- Shows the risk of flooding and forecasts how these risks will change over time
- A home's risk assessment can differ from its FEMA flood zone designation



Flood Factor[®]

The Data Behind Flood Factor[®]

First Street's physically-based flood model

The First Street Flood Model (FSF-FM) is a nationwide model that allows us to determine the potential flood risk from rain, streamflow, sea level rise, tide, and storm surge for any location. The FSF-FM is a complex system comprised of various water models and qualified input components. It is built on decades of peer-reviewed research and can forecast how flood risks will change over time due to environmental changes.

Watch the methodology explainer video

<https://firststreet.org/methodology/flood>

Climate Risks on Zillow

Climate risks

Source: First Street®

Flood Factor

7/10

FEMA Zone AE, a high-risk Special Flood Hazard Area

Fire Factor

3/10

Wind Factor

8/10

Air Factor

2/10

Heat Factor

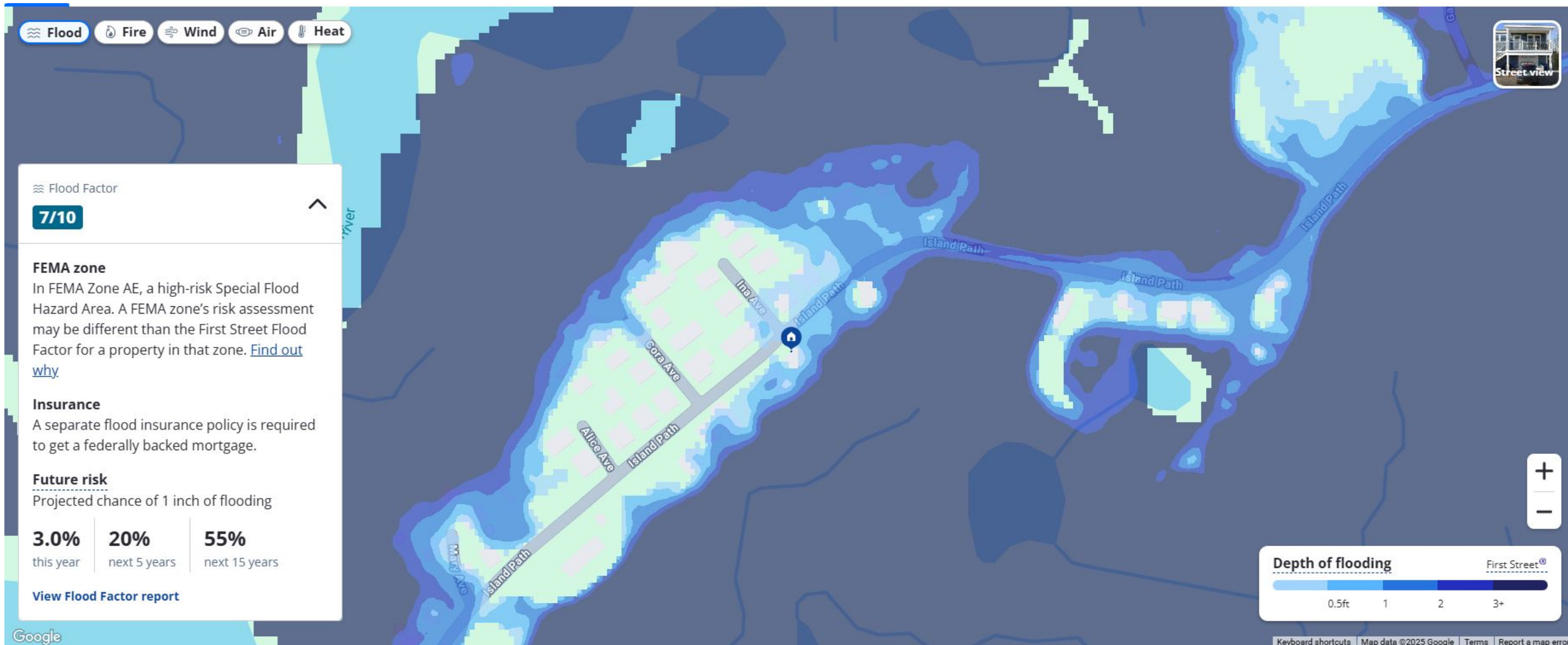
5/10

Show more >



<https://www.zillow.com/>

Climate Risks on Zillow



<https://www.zillow.com/>

Environmental Risk on Realtor.com

Environmental risk

Flood Factor Severe

This property's flood risk is increasing.



Fire Factor Moderate

This property's wildfire risk is increasing.



Heat Factor Major

7 days above 92°F this year



Wind Factor Severe

Severe risk of severe winds over next 30 years



Air Factor Minor

Risk of poor air quality is not changing



[View Flood Factor™ report](#)

Flood Factor™

This property has a **88.90% risk** of flooding over 30 years. This property's risk of flood is **increasing** as weather patterns change. Flooding in this area is caused by precipitation, sea level rise, and hurricane storm surge.



FEMA rating: This property is located in FEMA zone AE

Understand this data

Realtor.com® empowers you with flood data so you can understand your risk and your options. [Learn more](#)

Flood insurance may impact your budget

As this property is located in a FEMA Zone AE Special Flood Hazard Area, homeowners are **required** to purchase flood insurance to obtain a mortgage from federally-backed or regulated lenders. Explore quotes for flood insurance from **\$435** to **\$708** per year.

[Click to compare quotes](#)

Flood risk data including FEMA ratings is provided by **First Street®**, a product of First Street Foundation®. The Flood Factor® model is designed to approximate flood risk and not intended to include all possible flood risks. Flood insurance quotes are based on \$250k in building and \$100k in contents coverage.

RECAP: Determining flood risk

- Everyone lives in a flood zone with some level of flood risk (e.g. low, moderate, or high)
- Important for buyers and property owners to determine and understand the past, current and future flood risk for a property and have an understanding of their level of tolerance to deal with flood risk and all that comes with it.
- Recent flood disclosure notifications in New Hampshire and Maine
- FEMA maps are good starting points but other sources including future flood risk tools should also be reviewed and considered



Part 2C. Flood Resiliency

Floodplain Regulations

- Local floodplain regulations require how development of new and substantially improved structures in a floodplain are to be built
 - Determined by what flood zone the structure is located in on the FEMA map and the associated base flood elevation



Floodplain Regulations

- Building or improving a structure to higher floodplain standards increases the home's flood resiliency and decreases its chances of being damaged by flooding
- Flood provisions in the State Building Code include higher floodplain standards



FEMA Elevation Certificate

- Helps determine a building's flood risk
- Not required to purchase flood insurance but can lower a premium in some cases
- Provides property-specific grade elevations
- Used by community officials to ensure compliance with community's floodplain regulations

U.S. DEPARTMENT OF HOMELAND SECURITY
Federal Emergency Management Agency
National Flood Insurance Program

OMB No. 1660-0008
Expiration Date: November 30, 2022

ELEVATION CERTIFICATE

Important: Follow the instructions on pages 1-3.

Copy all pages of this Elevation Certificate and all attachments for (1) community official, (2) insurance agent/company, and (3) building owner.

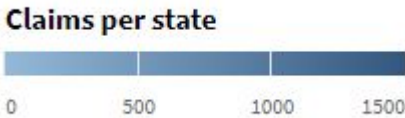
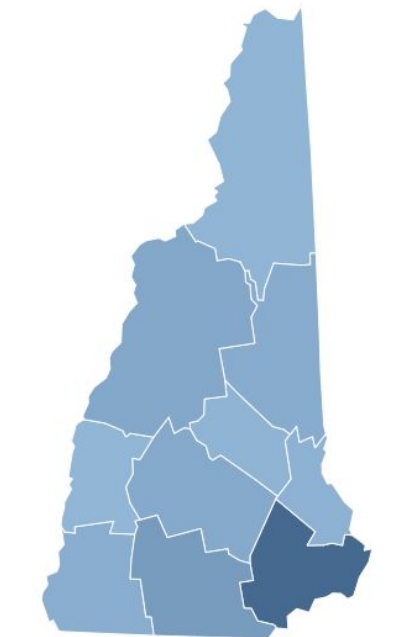
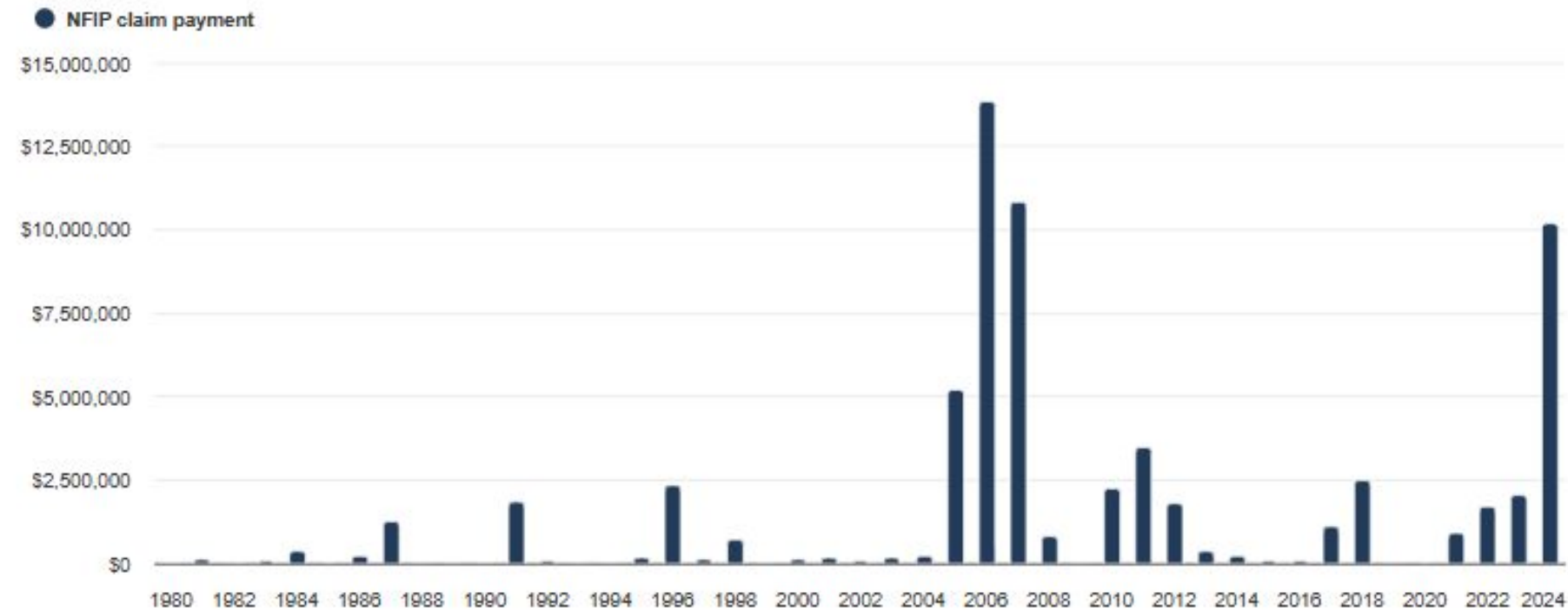
SECTION A - PROPERTY INFORMATION				FOR INSURANCE COMPANY USE	
A1. Building Owner's Name				Policy Number:	
A2. Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No.				Company NAIC Number:	
City		State	ZIP Code		
A3. Property Description (Lot and Block Numbers, Tax Parcel Number, Legal Description, etc.)					
A4. Building Use (e.g., Residential, Non-Residential, Addition, Accessory, etc.)					
A5. Latitude/Longitude: Lat. _____ Long. _____ Horizontal Datum: ☐ NAD 1927 ☐ NAD 1983					
A6. Attach at least 2 photographs of the building if the Certificate is being used to obtain flood insurance.					
A7. Building Diagram Number _____					
A8. For a building with a crawlspace or enclosure(s):					
a) Square footage of crawlspace or enclosure(s) _____ sq ft					
b) Number of permanent flood openings in the crawlspace or enclosure(s) within 1.0 foot above adjacent grade _____					
c) Total net area of flood openings in A8.b _____ sq in					
d) Engineered flood openings? ☐ Yes ☐ No					
A9. For a building with an attached garage:					
a) Square footage of attached garage _____ sq ft					
b) Number of permanent flood openings in the attached garage within 1.0 foot above adjacent grade _____					
c) Total net area of flood openings in A9.b _____ sq in					
d) Engineered flood openings? ☐ Yes ☐ No					
SECTION B - FLOOD INSURANCE RATE MAP (FIRM) INFORMATION					
B1. NFIP Community Name & Community Number		B2. County Name		B3. State	
B4. Map/Panel Number	B5. Suffix	B6. FIRM Index Date	B7. FIRM Panel Effective/Revised Date	B8. Flood Zone(s)	B9. Base Flood Elevation(s) (Zone AO, use Base Flood Depth)
B10. Indicate the source of the Base Flood Elevation (BFE) data or base flood depth entered in item B9: ☐ FIS Profile ☐ FIRM ☐ Community Determined ☐ Other/Source: _____					
B11. Indicate elevation datum used for BFE in item B9: ☐ NGVD 1929 ☐ NAVD 1988 ☐ Other/Source: _____					
B12. Is the building located in a Coastal Barrier Resources System (CBRS) area or Otherwise Protected Area (OPA)? ☐ Yes ☐ No Designation Date: _____ ☐ CBRS ☐ OPA					

FEMA Form 086-0-33 (12/19) Replaces all previous editions. Form Page 1 of 6

Cost of Flooding in NH

Historical NFIP claims payments paid

This bar chart shows the total dollar amount of NFIP claim payments in New Hampshire from 1980 through 2024. Use this chart to see insurance claim trends in your area and understand your long-term flood risk.



New Hampshire

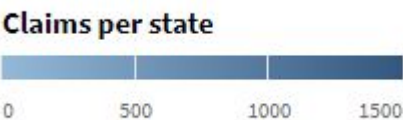
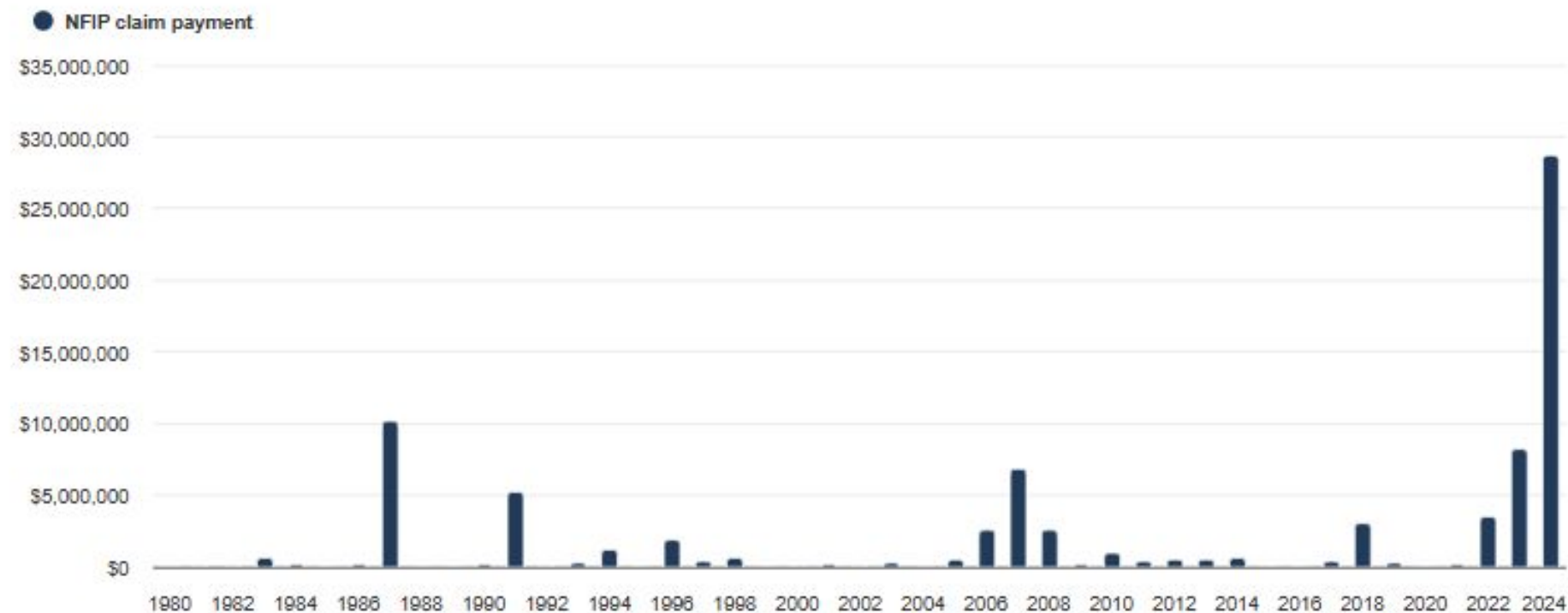
\$65,571,088.84
Dollar amount of claims paid by NFIP

3,029
Number of NFIP claims paid

Cost of Flooding in ME

Historical NFIP claims payments paid

This bar chart shows the total dollar amount of NFIP claim payments in Maine from 1980 through 2024. Use this chart to see insurance claim trends in your area and understand your long-term flood risk.



Maine

\$78,463,168.11
Dollar amount of claims paid by NFIP

3,440
Number of NFIP claims paid

FEMA National Flood Insurance Program (NFIP)

- Any resident or business owner is eligible to purchase NFIP flood insurance in a participating community.
- Homeowners and renters insurance does not typically cover flood damage.
- Flood insurance can pay regardless of whether or not there is a Presidential Disaster Declaration for Individual Assistance.



Poll Question

How many day(s) is the waiting period between the submittal of a flood insurance policy application and premium and the policy effective date when a lender is not requiring flood insurance?

- a. 1 day
- b. 7 days
- c. 15 days
- d. 30 days

Obtaining a Flood Policy

- Generally policies become effective in 30 days unless a lender is involved
- Seller with an NFIP building policy can usually transfer it to the buyer upon sale
- Recommend talking to current insurance agent about obtaining a policy



FEMA



Visit [FloodSmart.gov](https://www.floodsmart.gov)

Cost of Flood Insurance

Factors considered in determining a premium:

- Flood risk
- The type of coverage being purchased (e.g., building and contents coverage)
- The deductible and amount of building and contents coverage
- The location of the structure
- The design and age of the structure
- The location of the structure's contents



Flood Insurance Coverage

- Building Coverage
- Contents Coverage
 - Renters: Content Only



NATIONAL FLOOD INSURANCE PROGRAM

QUESTIONS & ANSWERS

FLOOD INSURANCE FOR REAL ESTATE PROFESSIONALS

MOST HOMEOWNERS INSURANCE DOES NOT COVER FLOOD DAMAGE.

But with flood insurance, you're covered.



NATIONAL FLOOD INSURANCE PROGRAM

A Real Estate Professional's Guide to Discussing Flood Insurance

NATIONAL FLOOD INSURANCE PROGRAM

PROTECT THE LIFE YOU'VE BUILT

WITH FLOOD INSURANCE

FLOODING IS THE MOST COMMON AND COSTLY NATURAL DISASTER IN THE U.S.

The National Flood Insurance Program (NFIP), overseen by the Federal Emergency Management Agency (FEMA), offers flood insurance to help you replace property damaged by floods. Learn more about how flood insurance can give you peace of mind after a disaster.



NATIONAL FLOOD INSURANCE PROGRAM

PUBLICATIONS ORDER FORM

The National Flood Insurance Program (NFIP) offers a variety of resources to help policyholders, agents and the public. Topics range from navigating flood insurance policies to guidance before, during and after a disaster. Printed copies of these publications can be ordered for free from FEMA's Publications Warehouse using this form, which is updated on a monthly basis. Visit [floodsmart.gov/puborderform](https://agents.floodsmart.gov/puborderform) to ensure you complete and submit the most recent version.

Enter your requested quantity in the blank spaces below. Detailed descriptions of each publication are included after the order form, beginning on page 3.

POLICY DOCUMENTS

	English	Quantity	Spanish	Quantity
NFIP Claims Handbook	F-687		F-687S	
NFIP Summary of Coverage	P-2144		P-2144S	
NFIP Summary of Coverage Commercial Property	F-778		F-778S	
NFIP Summary of Coverage Residential Condominium Buildings	P-2180		P-2180S	

QUICK-REFERENCE MATERIALS

NFIP Flood Insurance for Condominium Associations Brochure	P-2223			
NFIP Flood Insurance for Renters Brochure 	P-2108		P-2108S	
NFIP Map Changes and Flood Insurance: What Property Owners Need to Know Brochure	FP-2019		FP-2019S	
NFIP Questions & Answers: Flood Insurance for Real Estate Professionals Brochure	F-435		F-435S	
NFIP Why Do I Need Flood Insurance? Brochure 	F-002		F-002S	

PROMOTIONAL RESOURCES

Condo Owners Protect the Life You've Built with Flood Insurance Postcard	P-2081			
Most Homeowners Insurance Does Not Cover Flood Damage Postcard	F-061		F-061S	
NFIP Pocket Folder	F-010			
Protect the Life You've Built with Flood Insurance Door Hanger	P-2076			
Resources for Marketing & Selling Flood Insurance from the NFIP Postcard	F-2053			

 This publication is available in the following additional languages: Traditional Chinese (TC), Simplified Chinese (SC), Korean (K) and Vietnamese (V). If you would like to order copies of these, please note the publication number with the aforementioned language code in the Notes field of the order form.

<https://agents.floodsmart.gov/puborderform>

Strategies to Reduce Flood Risk

Reduce Flood Risk

- Developed by the Association of State Floodplain Managers
- Assists property owners and buyers in floodprone areas identify strategies to reduce their property's risk of flooding
- 40 strategies
- Interactive tool to filter and search for strategies
- Available in English and Spanish
- <https://www.reducefloodrisk.org>

Identify what actions you can take today to lower your risk of flooding tomorrow:

EXPLORE STRATEGIES FOR

Property Owners or Buyers

[Learn More](#) →

EXPLORE AND

Browse All Strategies

[Learn More](#) →

Not a property owner or buyer?

Explore strategies for:

Renters

→

**Community Association
Representatives**

→

Government Officials

→

Everyone Else

→

Filter & Search

→ [Reset Filters](#)

Annual Maintenance Required ⓘ

- ☐ Low
- ☐ Medium

Action Required If Flood Is Imminent ⓘ

- ☐ No, Passive
- ☐ Yes, Active

Relative Cost ⓘ

- ☐ \$
- ☐ \$\$
- ☐ \$\$\$
- ☐ \$\$\$\$
- ☐ \$\$\$\$\$

Level of Effort ⓘ

- ☐ Professional
- ☐ DIY

^ [Hide filters](#)

Scale

- ☐ Single Property
- ☐ Neighborhood
- ☐ Community

Real Estate Type ⓘ

- ☐ Single-family residence
- ☐ Multi-family residence
- ☐ Manufactured home
- ☐ Business
- ☐ Government building
- ☐ Agricultural building

Foundation Type ⓘ

- ☐ Crawlspace
- ☐ Basement
- ☐ Slab-on-Grade
- ☐ Piers/Piles/Posts/Columns

Coastal Property ⓘ

- ☐ Yes
- ☐ No

Past Flood Depth ⓘ

- ☐ Shallow (less than 3 feet)
- ☐ Moderate (3 to 6 feet)
- ☐ Deep (more than 6 feet)
- ☐ Unsure

Debris Flow Potential ⓘ

- ☐ Yes
- ☐ No
- ☐ Unsure

Structure Condition ⓘ

- ☐ Fair-to-excellent condition
- ☐ Less than fair condition

Sort by:

Highest Effort ▾

Lowest Cost ▾



Single Property

Follow flood-free site selection

New structures should be located on a site that ensures that the structure will remain dry in the event of a flood

Professional

\$

☐ Compare

Single Property

Install a rain barrel

Rain barrels collect and store rainwater from a building's roof that would otherwise be lost to runoff and diverted to storm drains and streams

Professional

\$

☐ Compare

Single Property

Create an Emergency Operations Plan

An emergency operations plan identifies flood risks and prepares for them to help protect human lives and property in the event of a flood

Professional

\$ - \$\$

☐ Compare

Single Property

Install a rain garden

A rain garden is a low-lying area in the landscape that is planted with wetland or wet-tolerant plants to address drainage issues and reduce flooding

Professional

\$ - \$\$

☐ Compare

Single Property

Install flood vents

Flood vents are small permanent openings that allow floodwater to flow freely through a crawlspace or other enclosed area below the BFE.

Professional

\$ - \$\$\$

☐ Compare

Single Property

Install a sump pump with secondary power source

Sump pumps are designed to remove water from below-grade (underground) areas.

Professional

\$ - \$\$\$

☐ Compare

RECAP: Flood Resiliency

- Building or renovating a home to higher floodplain standards can increase the home's flood resiliency, reduce the flood insurance premium, and decrease its chances of being damaged by flooding
- FEMA Elevation Certificate can help determine a building's flood risk and help reduce premium costs
- Flood insurance is one of the best ways to have a resilient home - it helps to rebuild and recover faster and more fully
- Reduce flood risk strategies tool - a great resource for property owners and buyers

The background is a solid green color. On the left side, there is a complex, abstract white line drawing. It consists of numerous overlapping, irregular, and somewhat organic shapes, some of which are nested or elongated, resembling a stylized map or a series of interconnected paths. The lines are thin and white, creating a high-contrast visual against the green background.

QUESTIONS?

LAST Question

Please share one interesting and (hopefully) useful thing you learned today.



Kaleigh
Johnson,
Portsmouth
Atlantic
Insurance



Thank You!

www.nhcaw.org/living-with-water-resources-for-realtors/





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