

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 *VISIT THE EXHIBIT: WATER HAS A MEMORY*

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

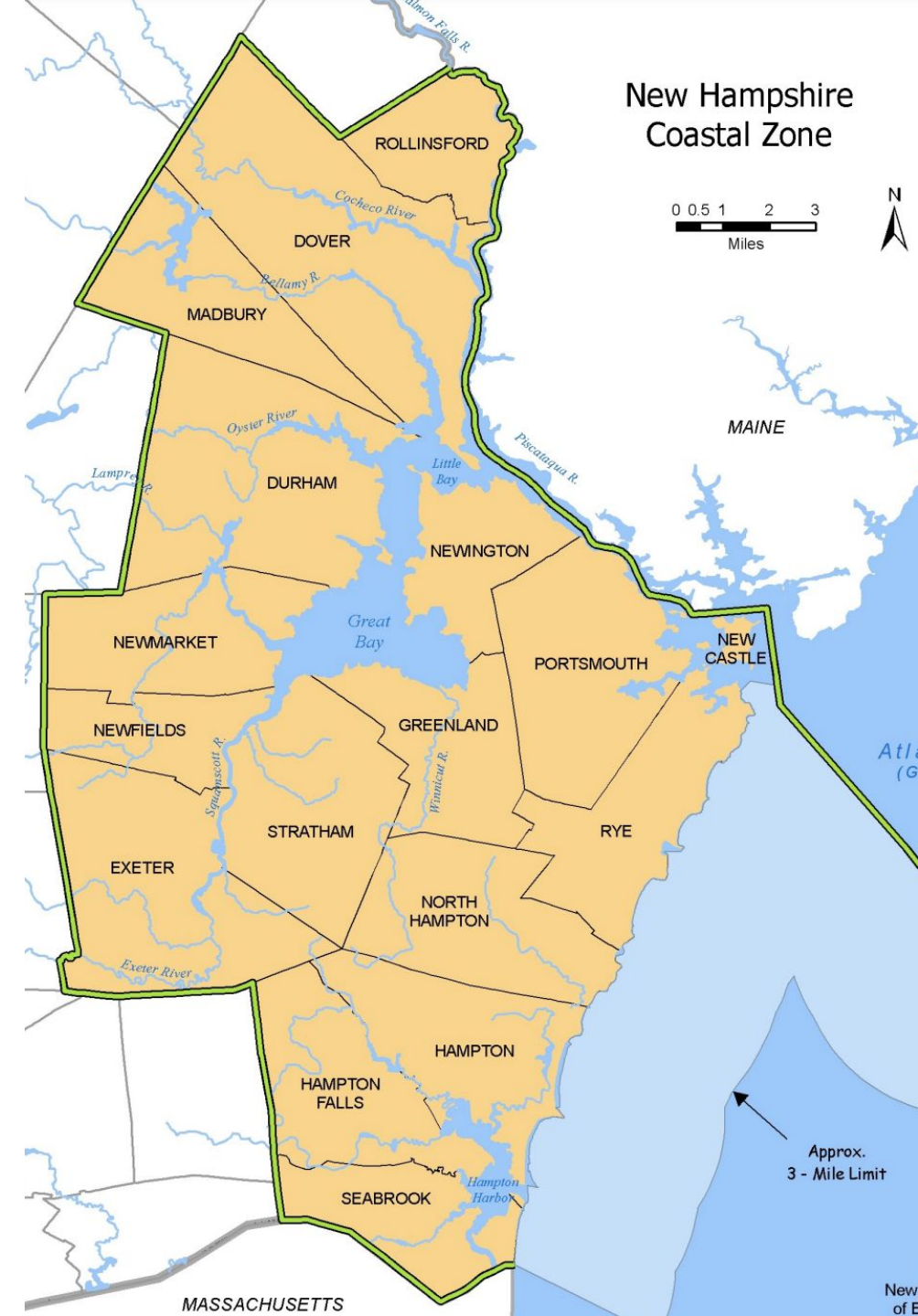
- Background on local tides
- Where to get local information about tide predictions and water levels
- How water levels are expected to change in the future



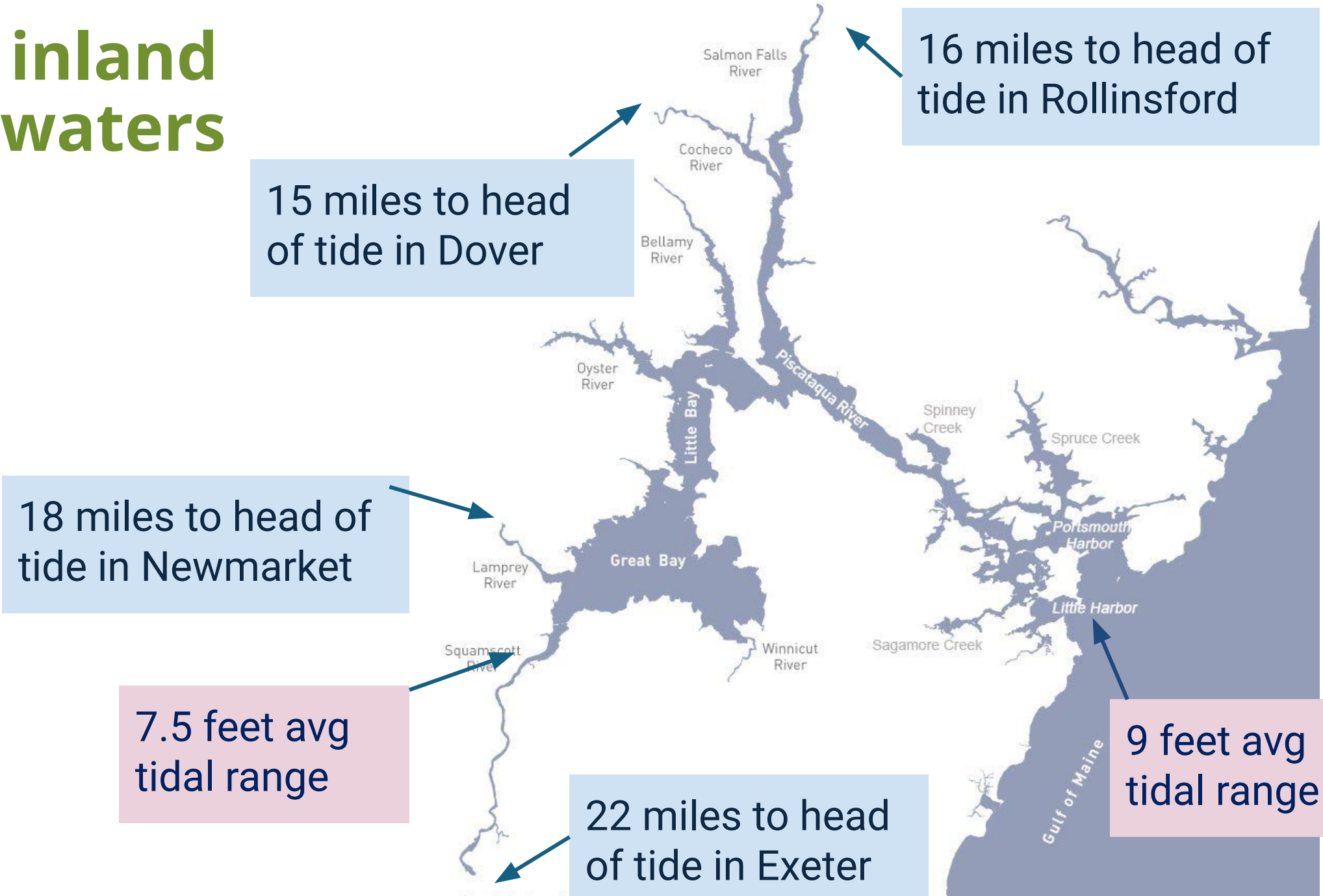
Local tidal patterns

Two high tides and two low tides per day

Average tidal range is around 9 feet



How far inland do tidal waters extend?



16 miles to head of tide in Rollinsford

15 miles to head of tide in Dover

18 miles to head of tide in Newmarket

7.5 feet avg tidal range

22 miles to head of tide in Exeter

9 feet avg tidal range

Graphic by Peter H. Taylor, Waterview Consulting

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

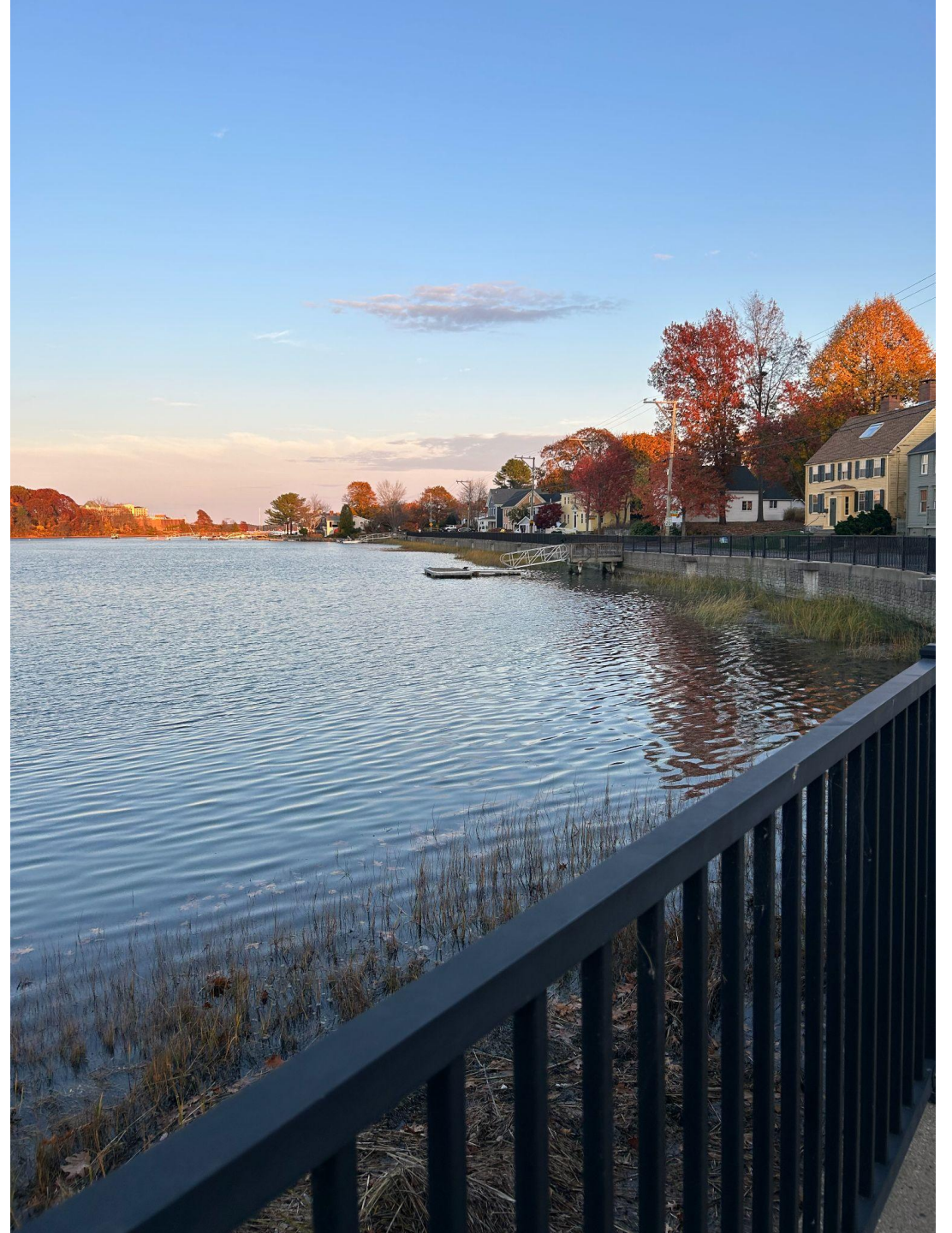


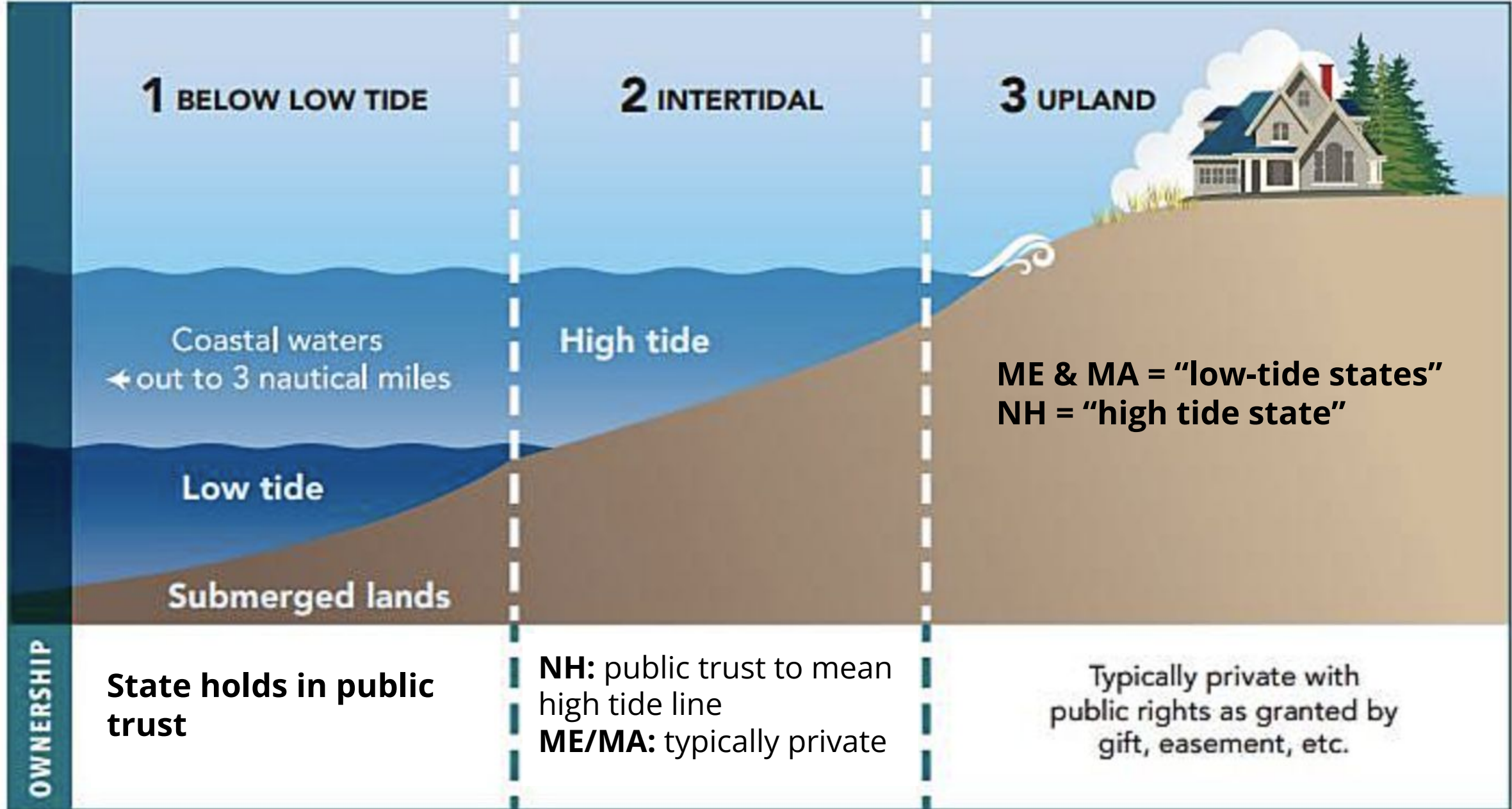
January 2024

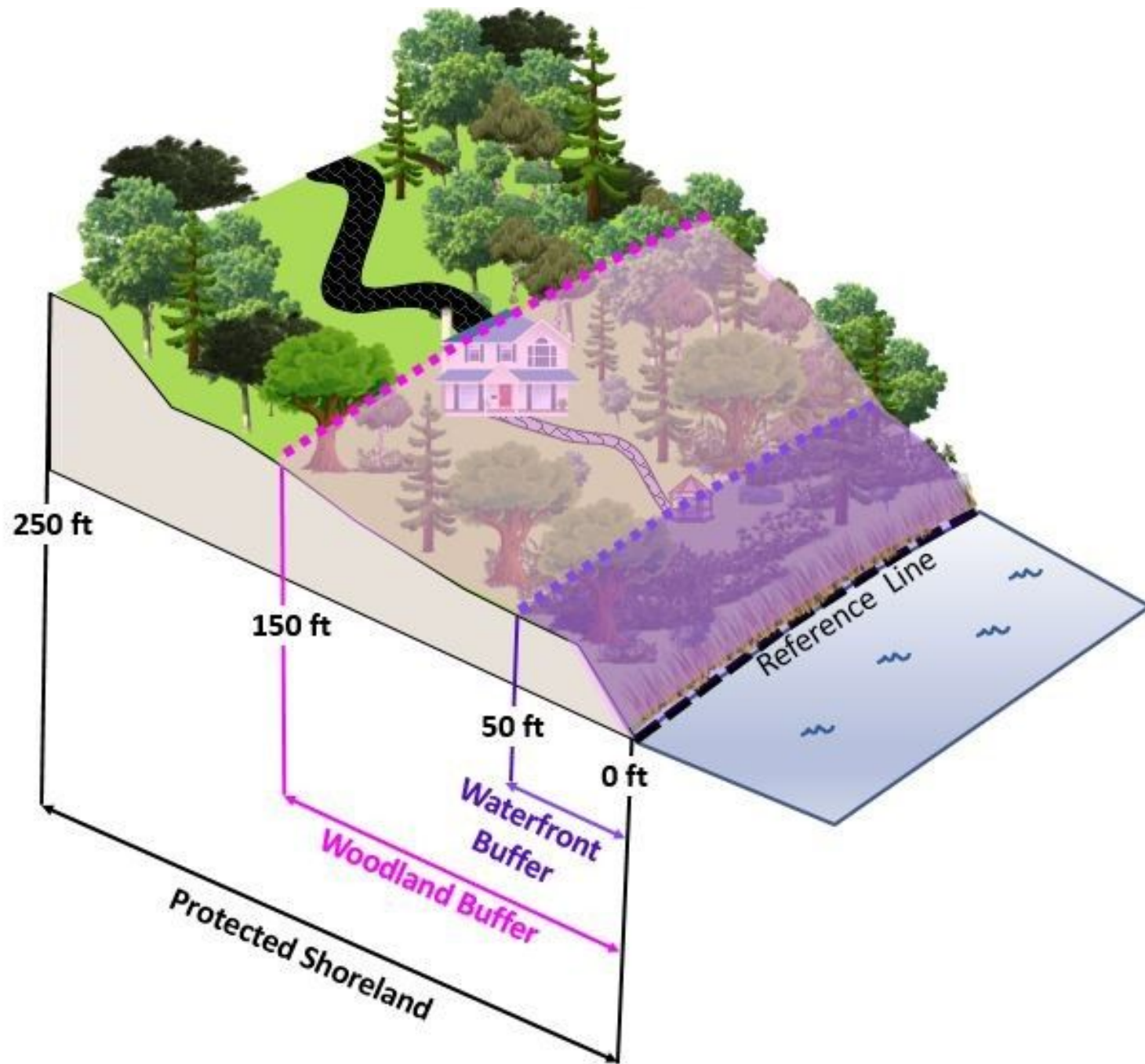


Why is it helpful to know about tides?









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

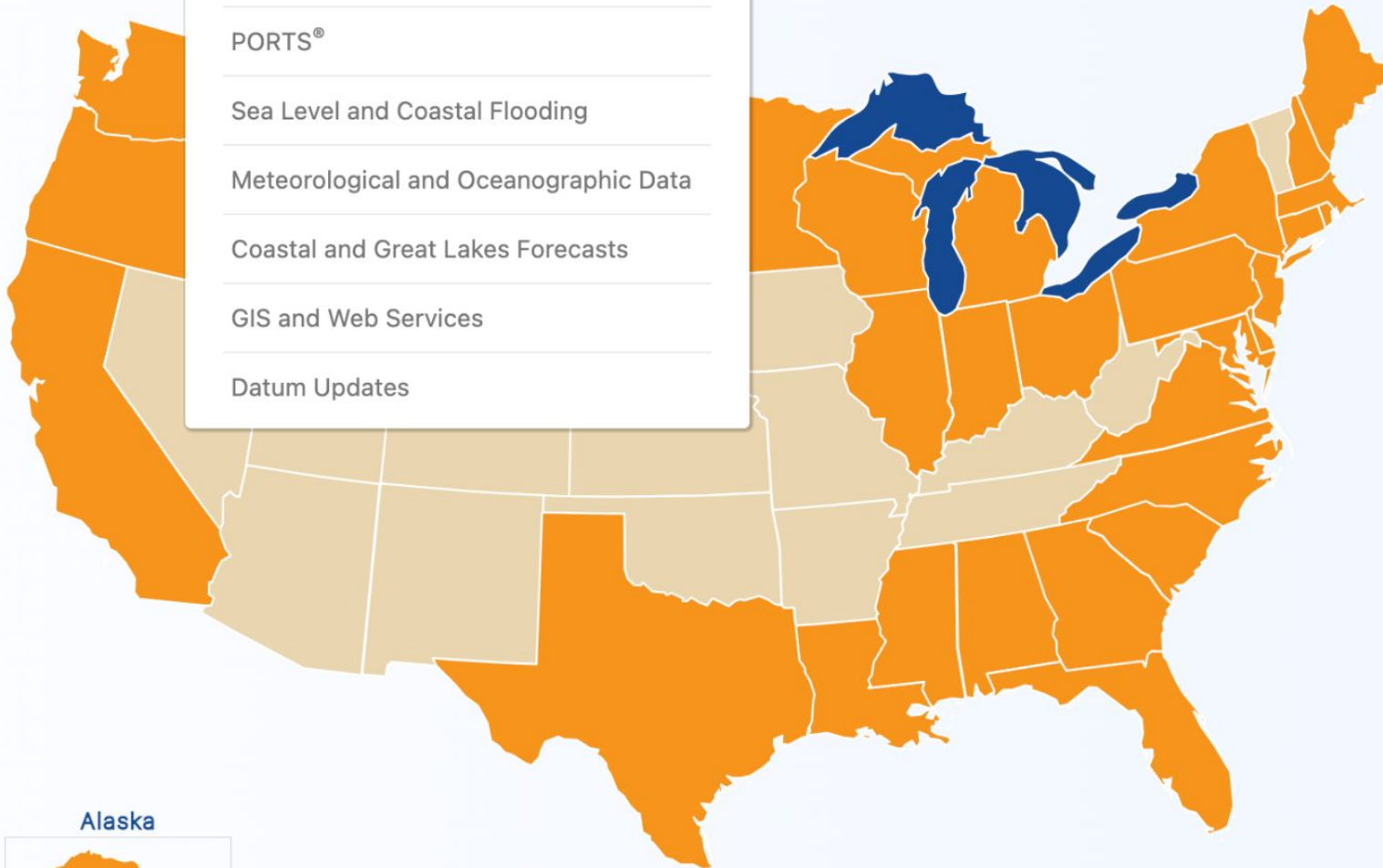


- Tides and Water Levels
- Currents
- PORTS®
- Sea Level and Coastal Flooding
- Meteorological and Oceanographic Data
- Coastal and Great Lakes Forecasts
- GIS and Web Services
- Datum Updates

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:

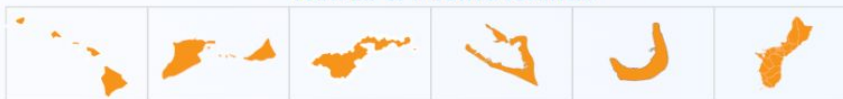
Station ID/City/State/Territory/Zip



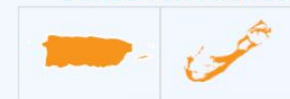
Alaska



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.

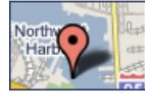


This NWLON station is specially reinforced to withstand hurricanes and other major storm events. The reinforced stations are better able to keep functioning during these events, providing critical information on water levels and winds that aids emergency response organizations.

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

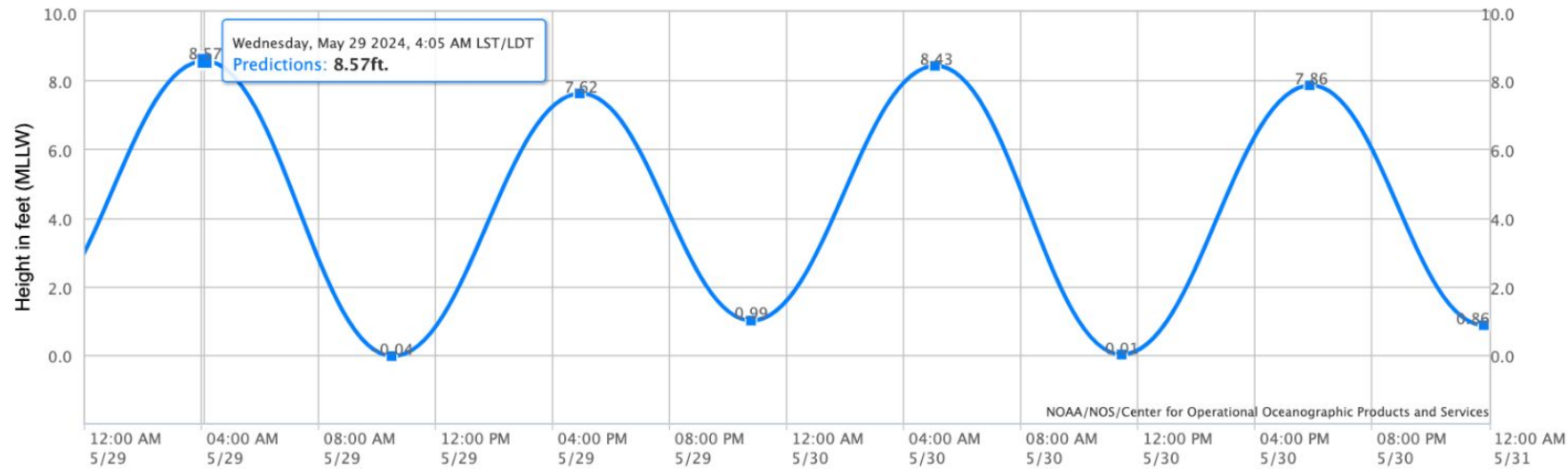
Name	Id	Lat	Lon	Predictions
MAINE and NEW HAMPSHIRE				
Portsmouth Harbor				
Jaffrey Point	8424601	+43.0567	-70.7133	Subordinate
Gerrish Island	8419688	+43.0667	-70.6967	Subordinate
Fort Point	8423898	+43.0714	-70.7106	Harmonic
Kittery Point	8419807	+43.0817	-70.7033	Subordinate
Seavey Island	8419870	+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

[Back to Station Listing](#) | [Help](#)

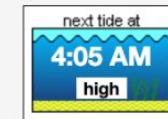
Printer View

[Click Here for Annual Published Tide Tables](#)

NOAA/NOS/CO-OPS
Tide Predictions at 8423745, Portsmouth NH
From 2024/05/29 12:00 AM LST/LDT to 2024/05/30 11:59 PM LST/LDT
Subordinate Station | Ref. Station (Portland 8418150) | Time offsets (high: 22 min. low: 17 min.) | Height offsets (high: *0.86 ft. low: *0.86 ft.)



Today's Tides (LST/LDT)



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

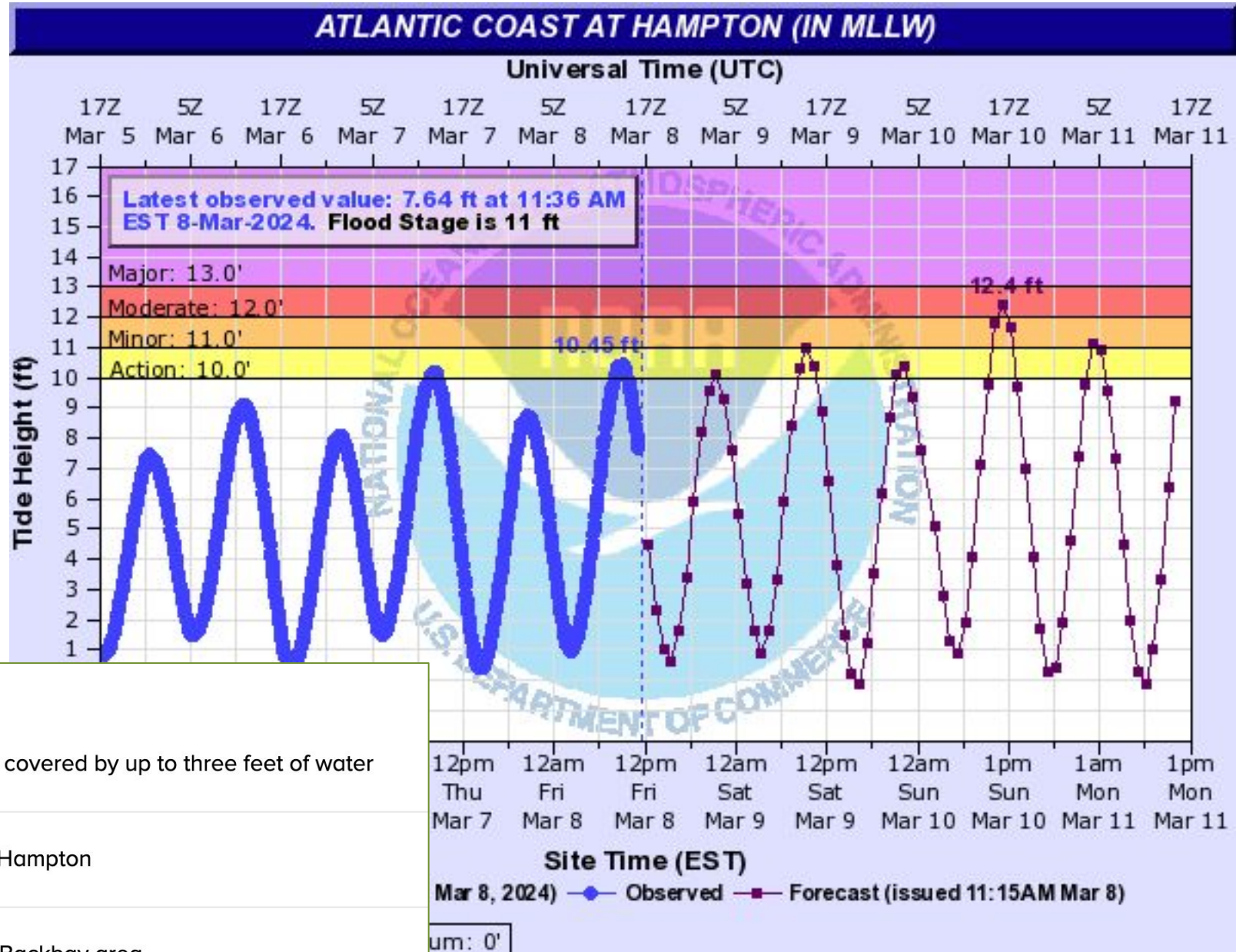
Update

Plot Daily

Plot Calendar

Data Only

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.

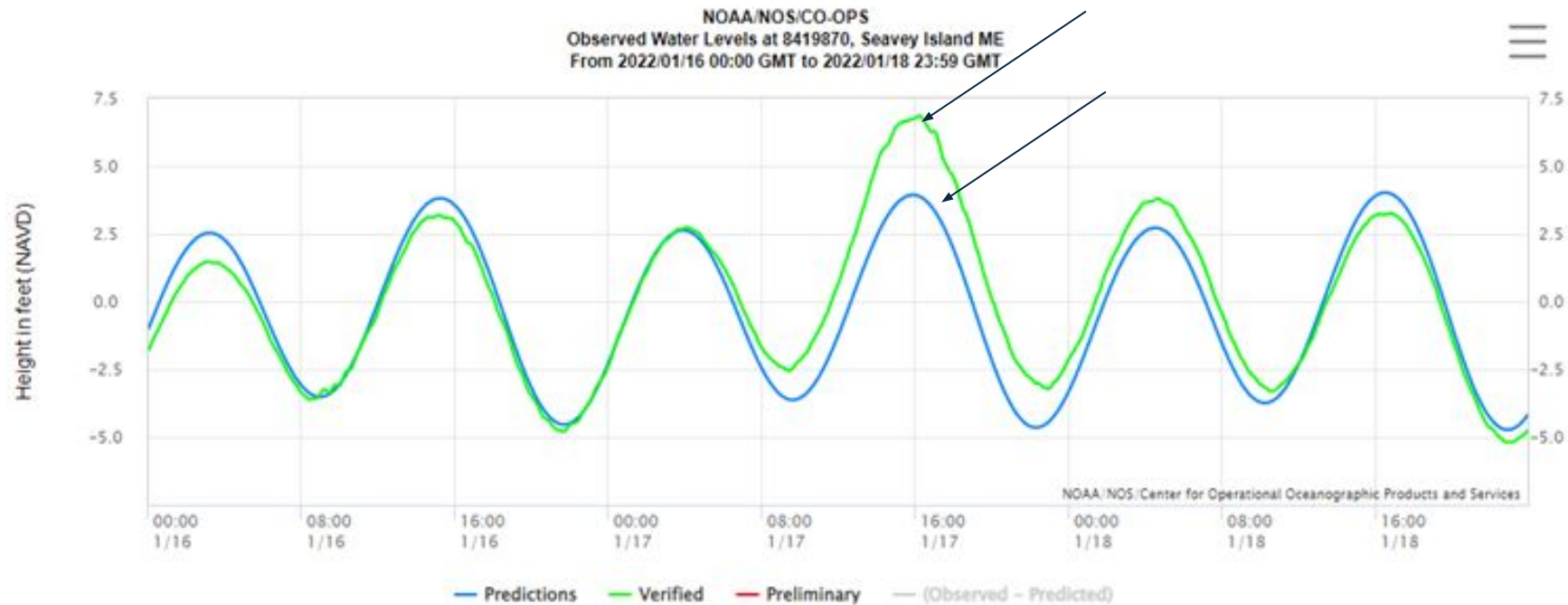
11 - Minor flooding of low lying coastal locations in Kittery, Portsmouth, New Castle, and Newington. Vulnerable waterfront pier locations, low lying causeways, and roads could see up to 1 foot of inundation.

→ 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



Rising sea levels

Local sea level rose about **8 inches** over the last century

Future projections: 0.5 to 1.3' by 2050, and 1 to 3' by 2100

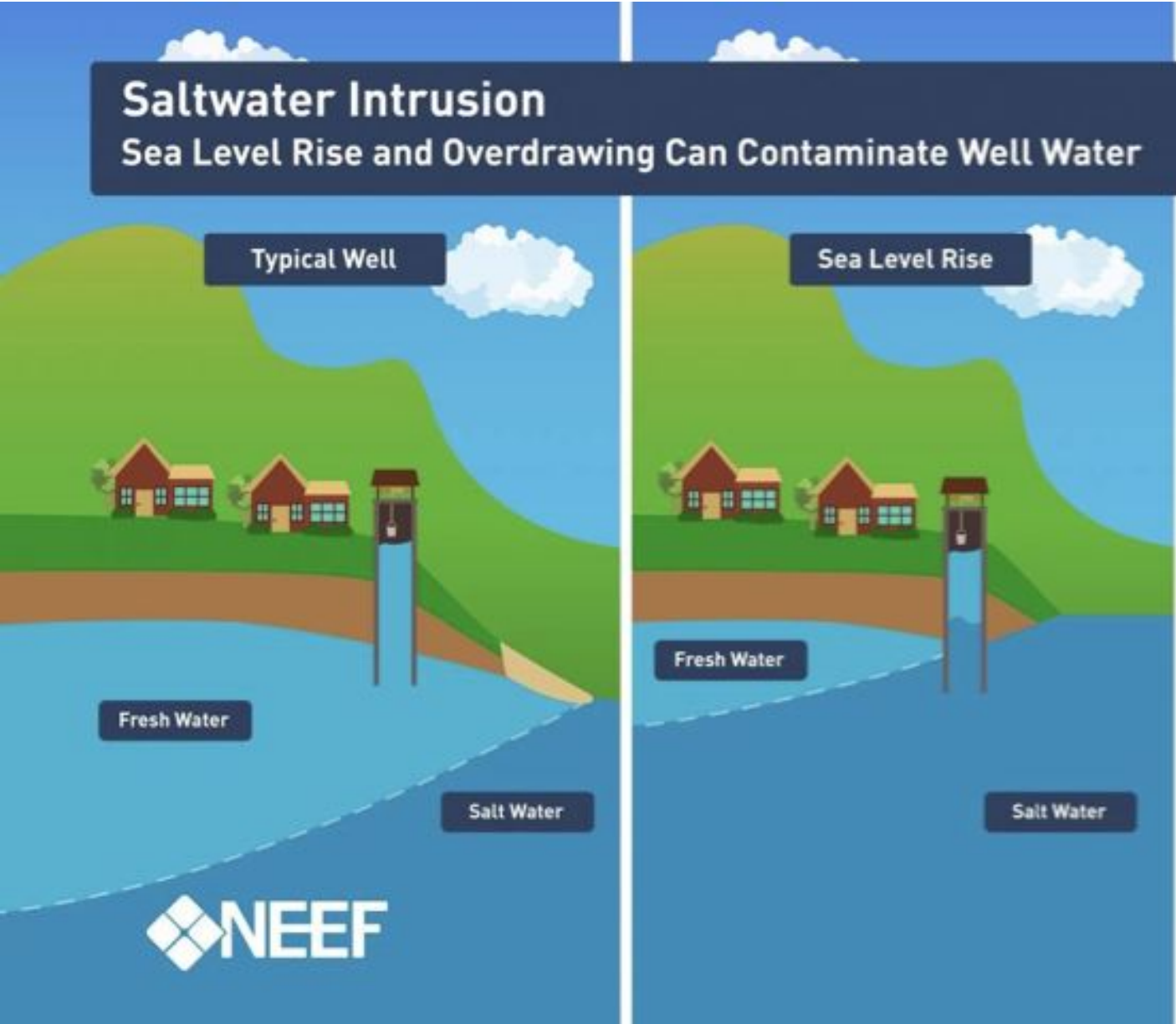


Hampton Tide Gauge Study

- 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**



Groundwater rise

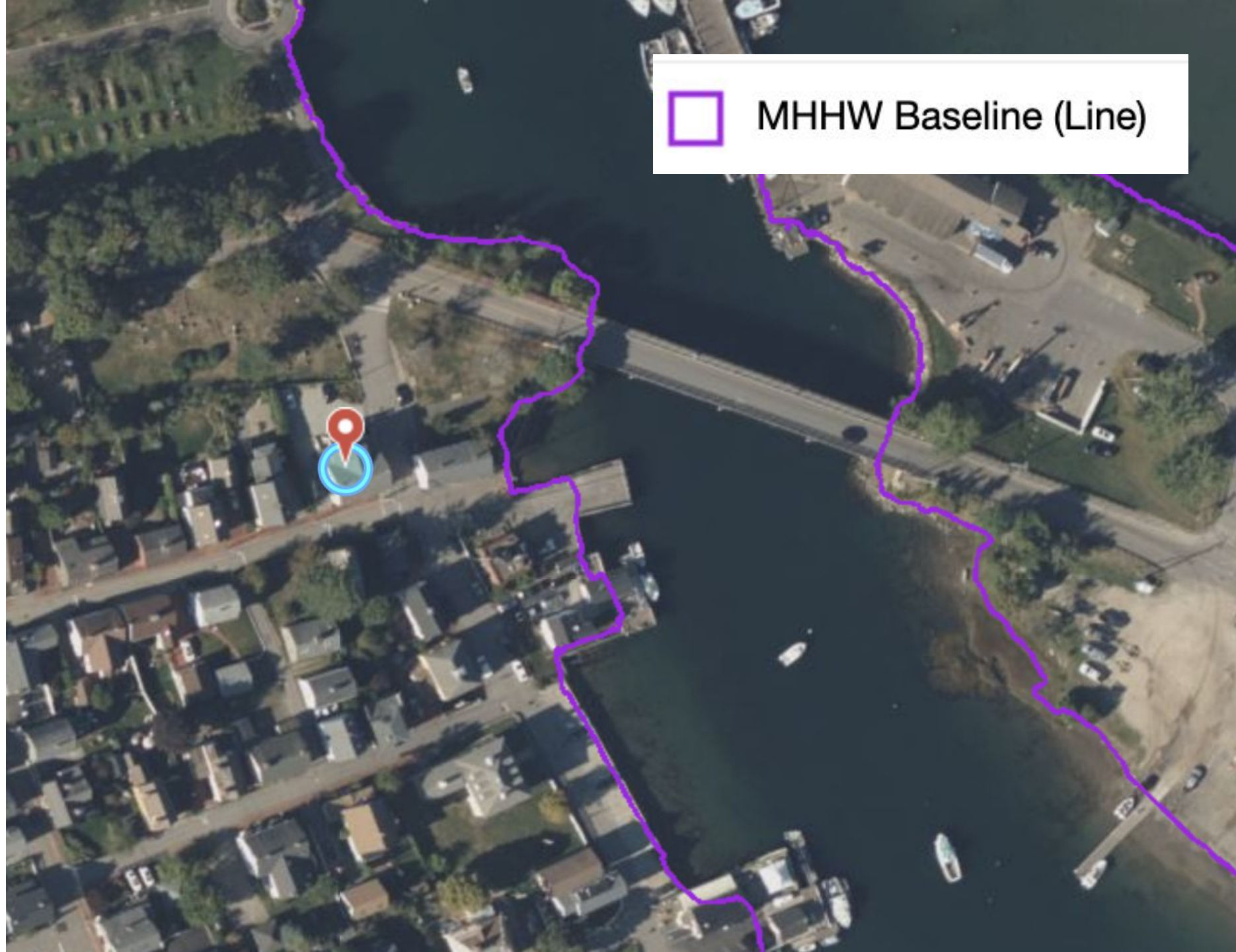


RESOURCE: NH Coastal Viewer

Oceans and Coasts
> Sea Level Rise
Scenarios

Purple line =
MHHW - Mean
Higher High Water

(average of the
higher high water
height)



MHHW Baseline (Line)

RESOURCE: NH Coastal Viewer

Oceans and
Coasts > Sea
Level Rise
Scenarios

+2' sea-level rise



RESOURCE: NH Coastal Viewer

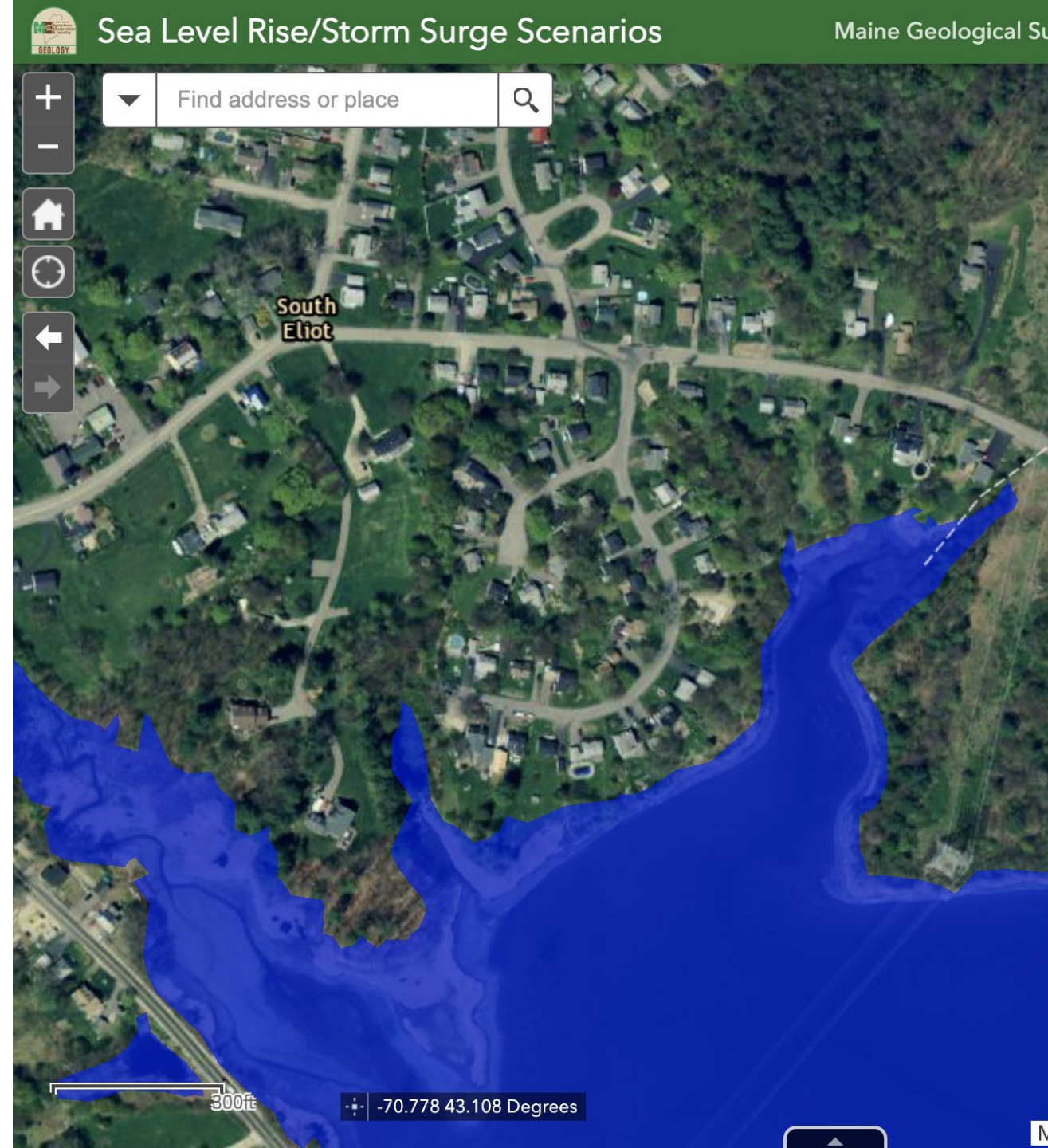
Oceans and
Coasts > Sea
Level Rise
Scenarios

+2' sea-level rise
+ storm



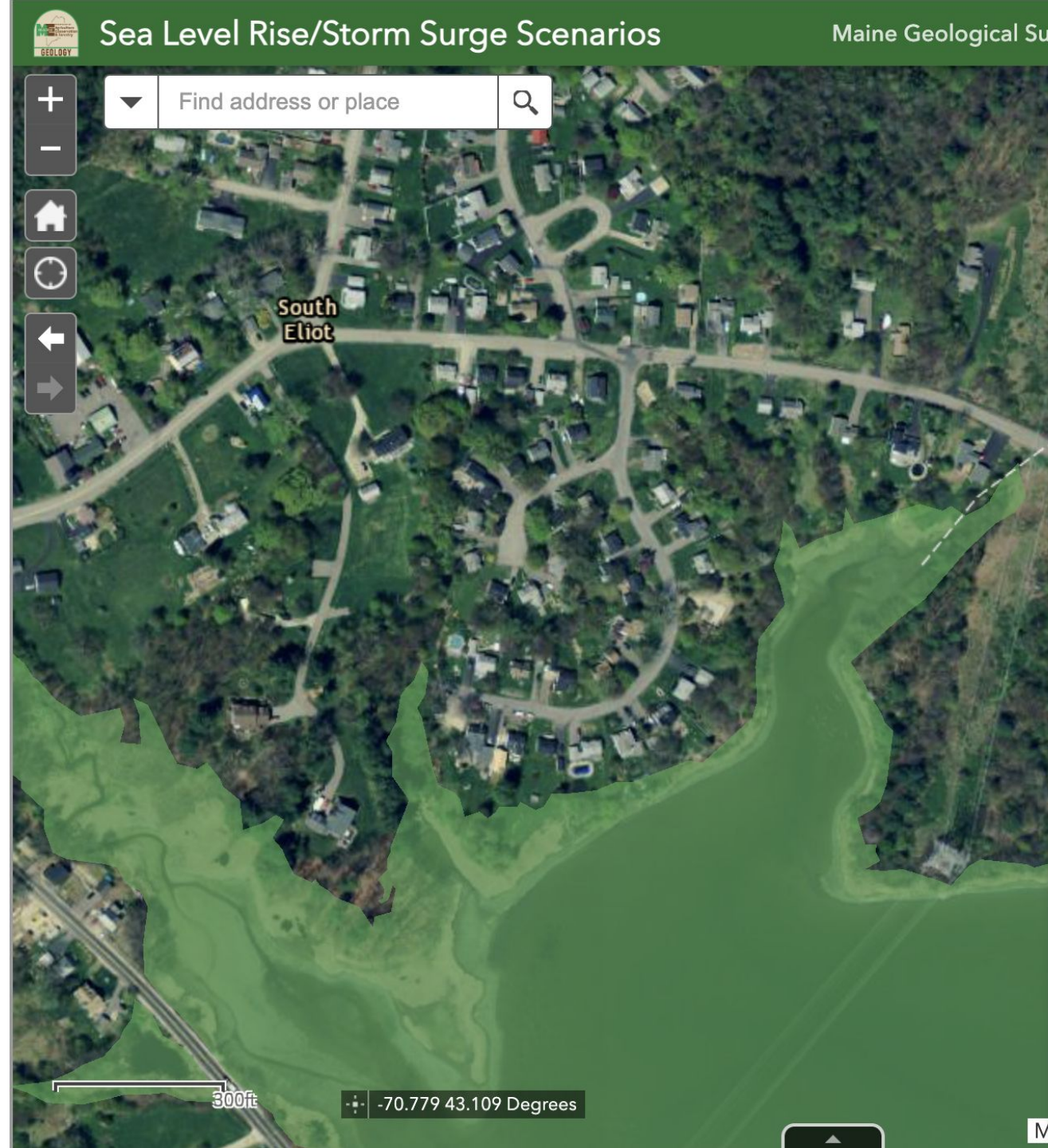
RESOURCE: ME Sea Level Rise Mapper

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 image features a solid green background with white topographic contour lines on the left side. These lines are irregular and wavy, representing elevation or depth. The word "QUESTIONS?" is centered in the right half of the image in a bold, white, sans-serif font.

QUESTIONS?



Part 2B. Determining Flood Risk

Poll Question

Please take out your phones and scan the QR code



6. 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 an area with some 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.

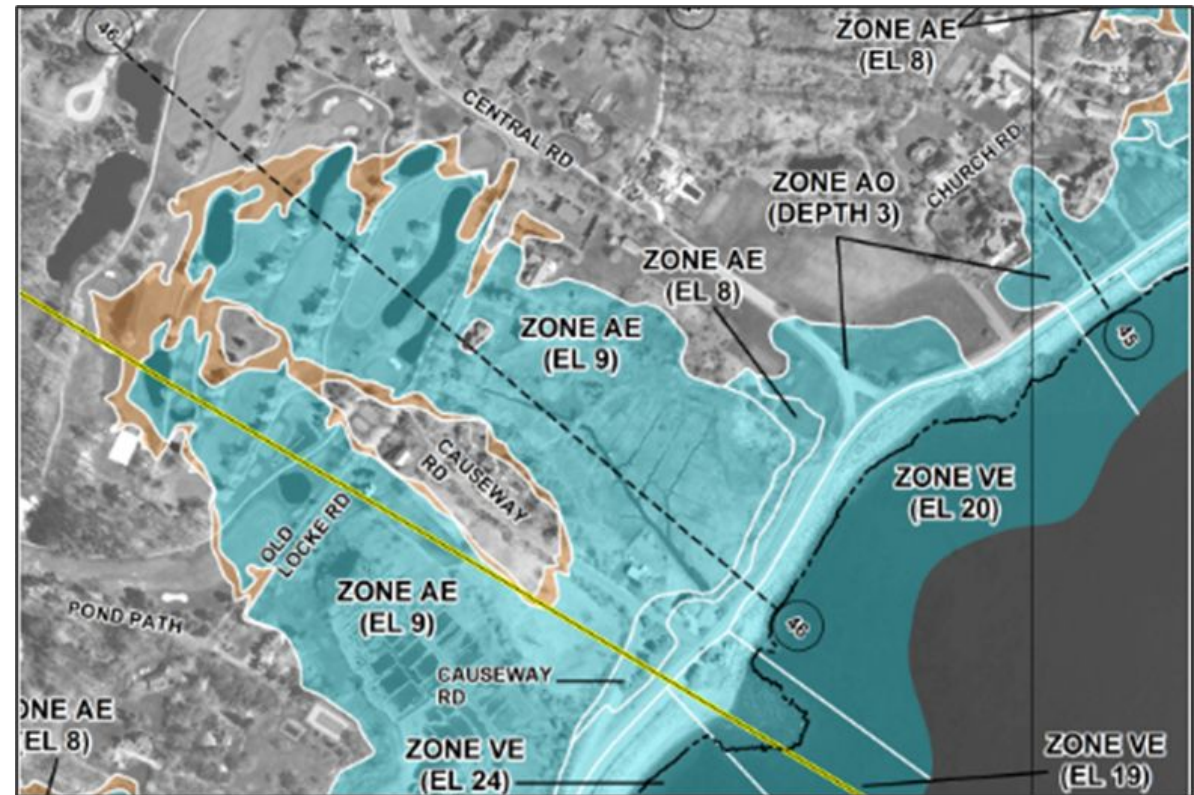
40%
Over 40% of NFIP claims are from outside
the high-risk zones



Determining Flood Risk

FEMA Floodplain Maps are the source for:

- Federal lender requirements
- NH and ME flood disclosure
- Development requirements in 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.**

The screenshot shows the website for the Maine Floodplain Management Program. At the top, it features the logo for the Maine Association of Realtors and the title 'FLOOD HAZARD DISCLOSURE & FIRMette Step by Step How To' with an effective date of August 9, 2024. The main content area explains that the disclosure requirement applies to all property types and provides instructions on how to use the website to generate a FIRMette. A red arrow points to the 'Floodplain Mapping Resources' link in the left-hand navigation menu. Another red arrow points to the 'How to check the property and create a FIRMette' link in the 'Mapping Resources' section. A third red arrow points to the 'Check for changes to floodplain maps' link in the 'Flood Insurance Rate Studies (FIS)' section.

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

Maine Floodplain Management Program

National Flood Insurance Program - NFIP

Maine Floodplain Management Program

Mapping Resources

Floodplain Maps Online

- 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 zones that should be used with confirmation from the official, printed Flood Insurance Rate Map (FIRM).
- The **FEMA Map Service Center** is an excellent source of information for floodplain mapping needs. The home page has a helpful index of commonly used links and provides the following specific links are provided below:
 - **Effective Date for Floodplain Maps (alphabetical list)**
 - **Online access to Maine Floodplain Maps**
 - **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,

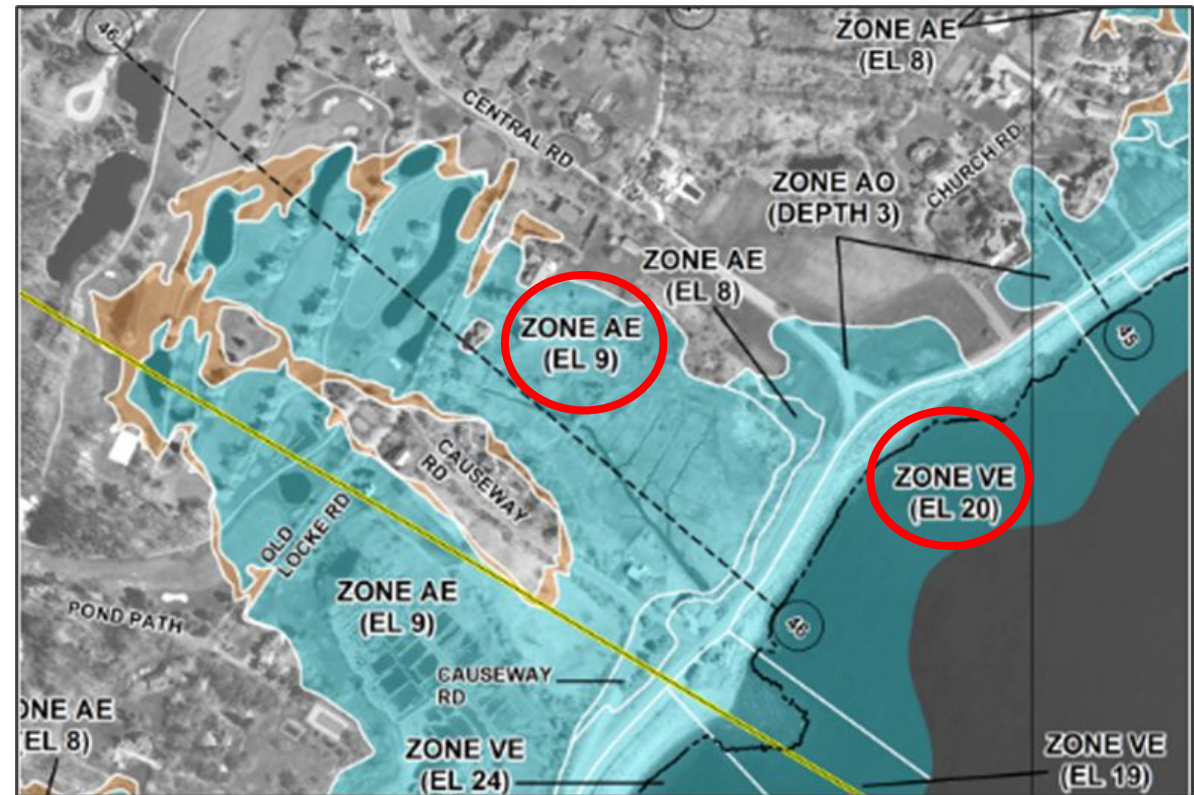
How to check the property and create a FIRMette

Check for changes to floodplain maps

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



FEMA Floodplain Maps Resources

Floods & Maps

Flood Maps

Risk MAP

Base Level Engineering Resources

RAM Access Portal

Lifecycle of a Risk MAP Project

Risk MAP Products

Risk MAP Success Stories

Coordinated Needs Management Strategy

Living With Levees

Coastal Flood Risk

Flood Map Open Houses

Story Maps

Flood Data Viewers & Geospatial Data

Change Your Flood Zone Designation

Products and Tools

Risk Mapping, Assessment and Planning (Risk MAP)

English Español

Not only is flooding one of the most common and costly disasters, flood risk can also change over time because of new building and development, weather patterns and other factors. Although the frequency or severity of impacts cannot be changed, FEMA is working with federal, state, tribal and local partners across the nation to identify flood risk and promote informed planning and development practices to help reduce that risk through the Risk Mapping, Assessment and Planning (Risk MAP) program.

What Is the Risk MAP Process?

FEMA is responsible for mapping our country's flood risk. The agency and its partners do this by making Flood Insurance Rate Maps, or flood maps. Risk Mapping, Assessment and Planning, Risk MAP, is the process used to make these maps. However, it creates much more than flood maps. It leads to more datasets, hazard mitigation analysis and communication tools. Each supports communities as they work to be resilient.

The fact sheets below explain the Risk MAP process in simple language and detail how FEMA, communities, and residents can collaborate throughout and after the flood



[An Introduction to FEMA Coastal Floodplain Mapping](#)

Low Flood Risk

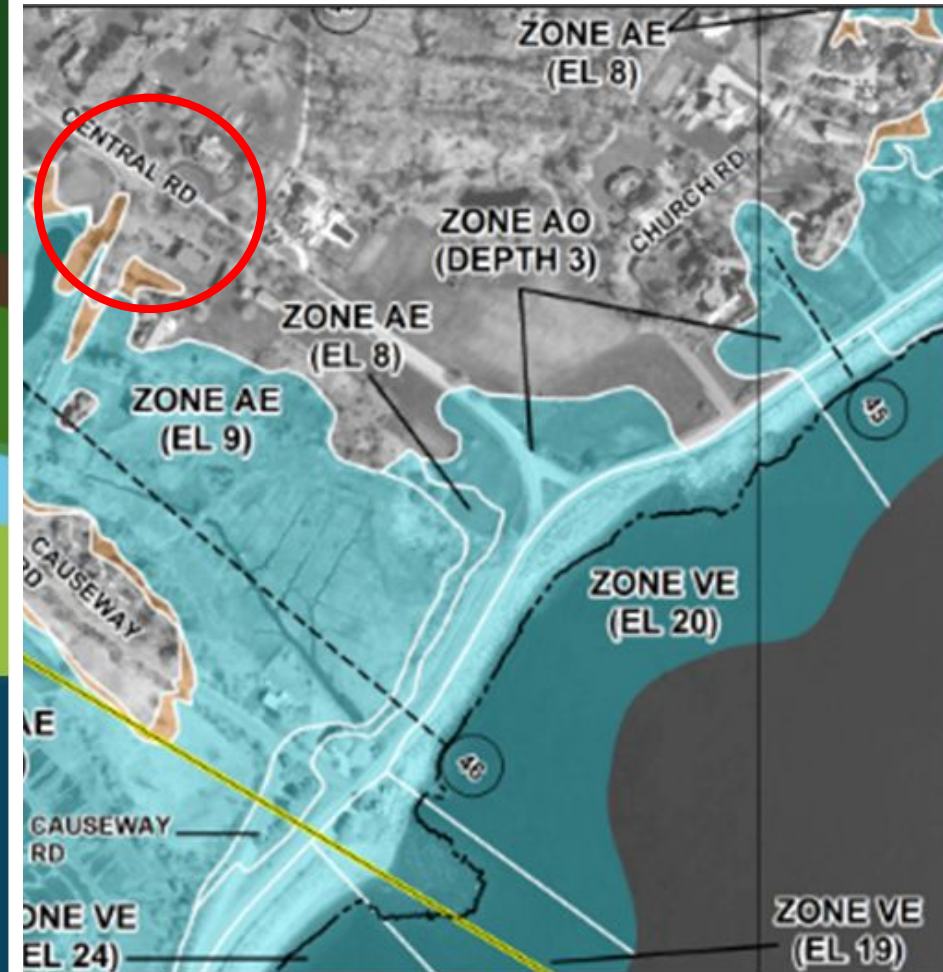


Moderate Flood Risk



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.

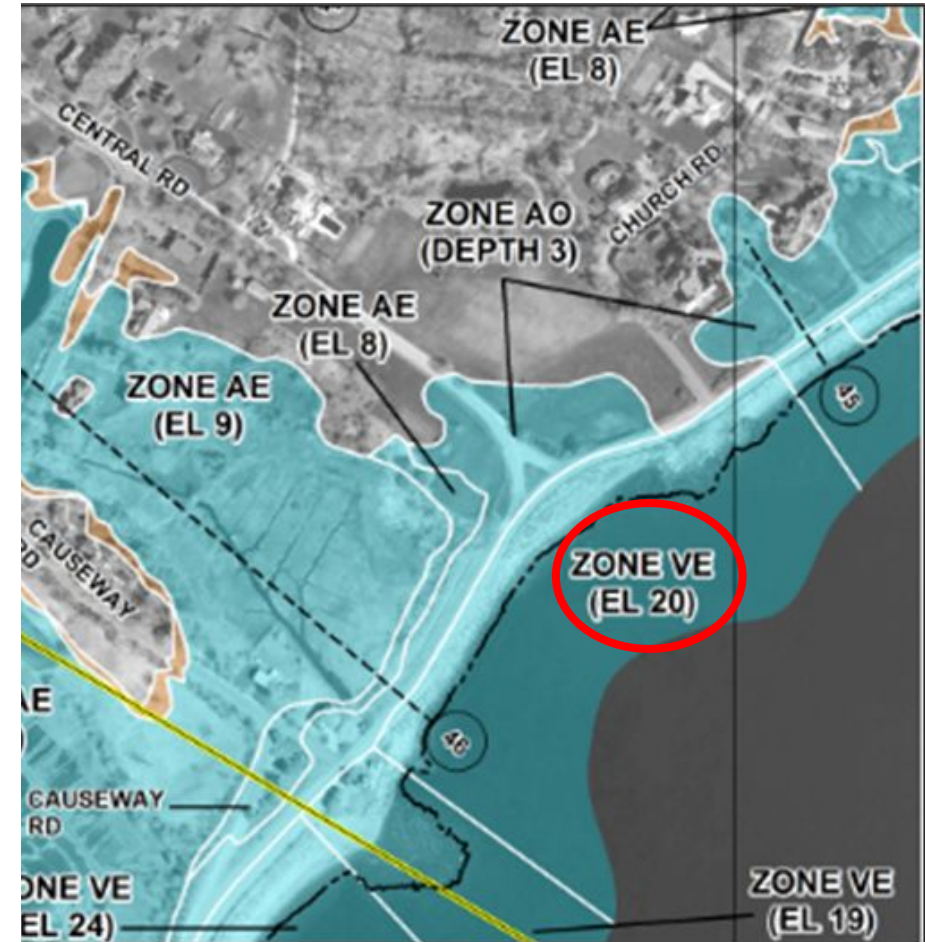


High Flood Risk (Coastal)



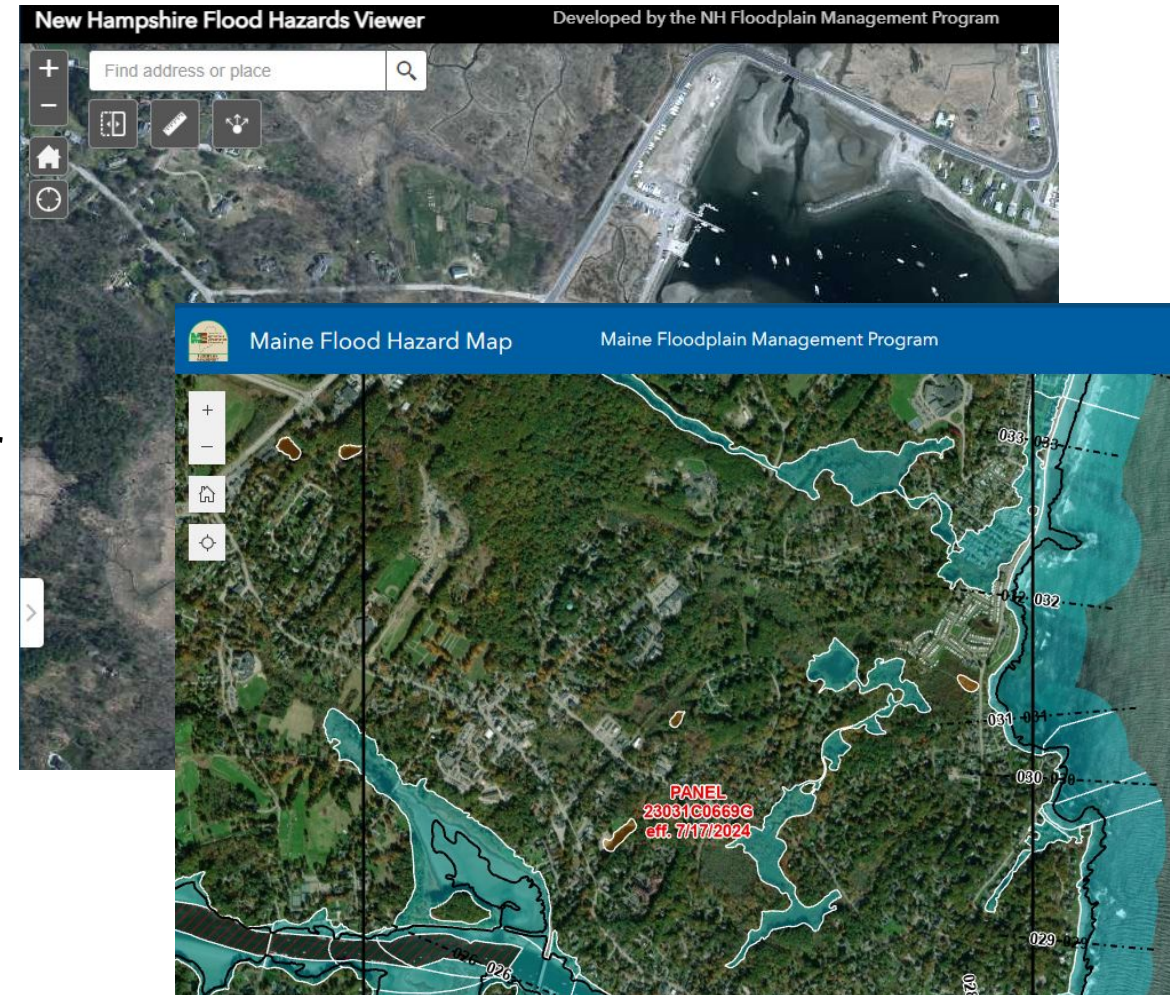
High Risk Coastal

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.

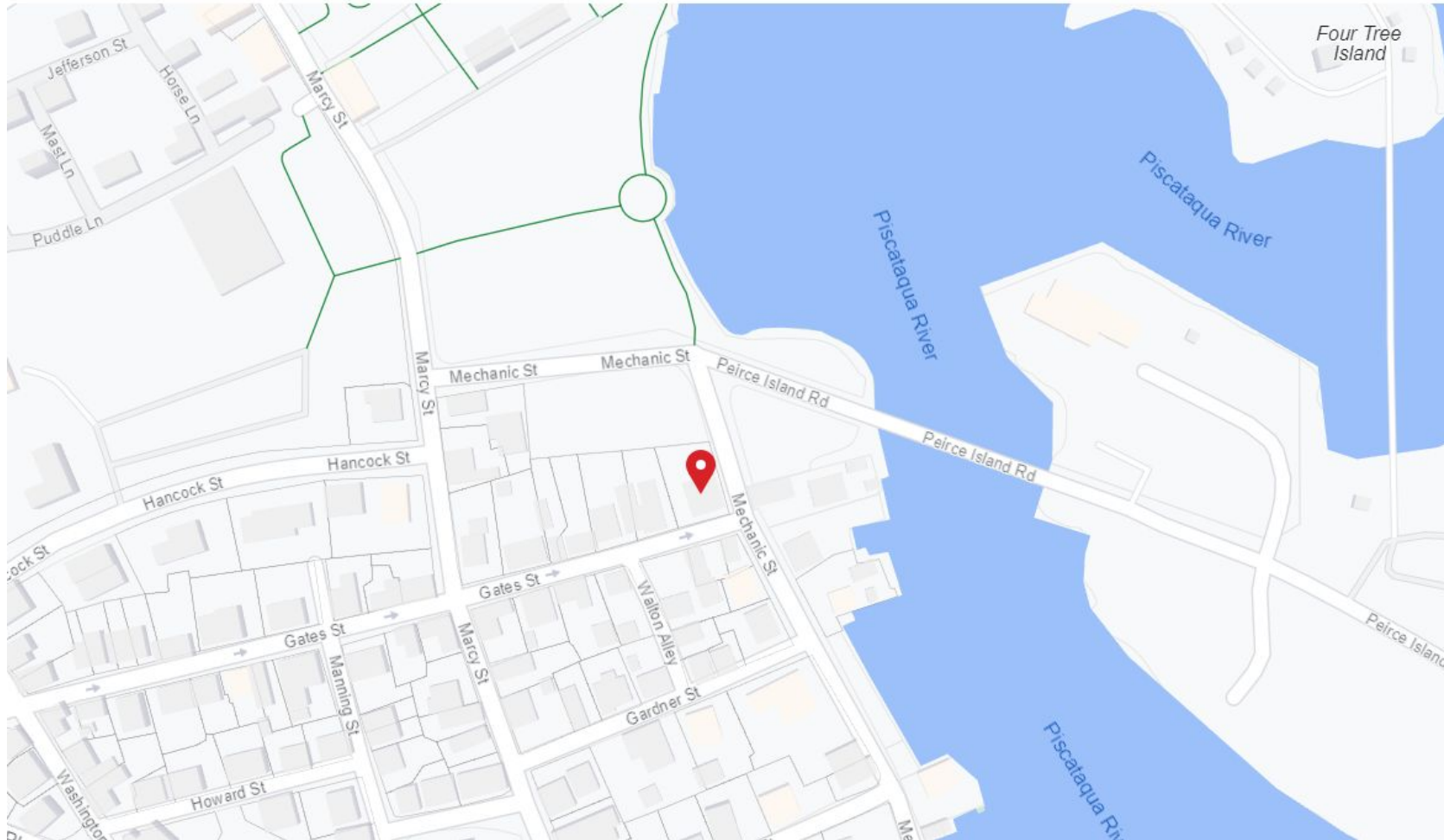


Where to View FEMA Maps

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



Mapping Demonstration: 213 Gates St. Portsmouth, NH



Mapping Demonstration: 213 Gates St. Portsmouth, NH



Navigation

Search

MSC Home

MSC Search by Address

MSC Search All Products

MSC Products and Tools

Hazus

LOMC Batch Files

Product Availability

MSC Frequently Asked Questions (FAQs)

MSC Email Subscriptions

Contact MSC Help

<https://msc.fema.gov/>

FEMA Flood Map Service Center: Welcome!

MSC Downtime for Site Upgrades

From Thursday, October 24, 2024 to Sunday, October 27, 2024, the Map Service Center (MSC) will be down for site upgrades. During this time, no MSC data, products or services will be available. The site will be back up Monday, October 28, 2024. Please contact fema-riskmap-outreach@fema.dhs.gov with questions or concerns.

Looking for a Flood Map?

Enter an address, a place, or longitude/latitude coordinates:

Looking for more than just a current flood map?

Visit [Search All Products](#) to access the full range of flood risk products for your community.



About Flood Map Service Center

The FEMA Flood Map Service Center (MSC) is the official public source for flood hazard information produced in support of

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 ?

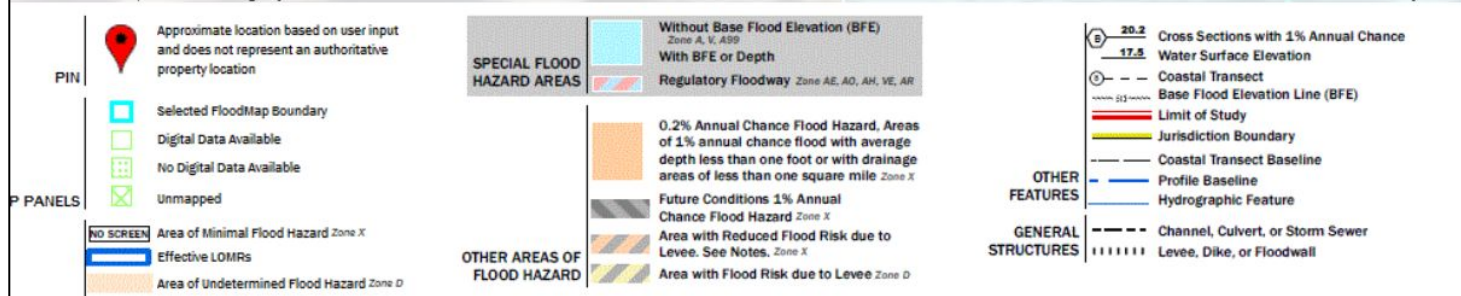
- Revisions (0)
- Amendments (2)
- Revalidations (1)

Go To NFHL Viewer »

You can choose a new flood map or move the location pin by selecting a different location on the locator map below or by entering a new location in the search field above. It may take a minute or more during peak hours to generate a dynamic FIRMette.



Powered by Esri



National Flood Hazard Layer FIRMette



70°45'21"W 43°4'44"N



Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

- | | |
|------------------------------------|--|
| SPECIAL FLOOD HAZARD AREAS | <ul style="list-style-type: none"> Without Base Flood Elevation (BFE)
<i>Zone A, V, A99</i> With BFE or Depth <i>Zone AE, AO, AH, VE, AR</i> Regulatory Floodway |
| OTHER AREAS OF FLOOD HAZARD | <ul style="list-style-type: none"> 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 <i>Zone X</i> Future Conditions 1% Annual Chance Flood Hazard <i>Zone X</i> Area with Reduced Flood Risk due to Levee. See Notes. <i>Zone X</i> Area with Flood Risk due to Levee <i>Zone D</i> |
| OTHER AREAS | <ul style="list-style-type: none"> NO SCREEN Area of Minimal Flood Hazard <i>Zone X</i> Effective LOMRs Area of Undetermined Flood Hazard <i>Zone D</i> |
| GENERAL STRUCTURES | <ul style="list-style-type: none"> Channel, Culvert, or Storm Sewer Levee, Dike, or Floodwall |
| OTHER FEATURES | <ul style="list-style-type: none"> 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 | <ul style="list-style-type: none"> Digital Data Available No Digital Data Available Unmapped |
- The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

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 9/6/2024 at 4:10 PM 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.

FEMA National Flood Hazard Layer Viewer



FEMA National Flood Hazard Layer Viewer

Click here to turn on Legend

The screenshot displays the FEMA's National Flood Hazard Layer (NFHL) Viewer interface. The main map area shows an aerial view of Portsmouth, NH, with various flood hazard overlays. A search bar at the top left contains the address "213 Gates St, Portsmouth, NH, 03801, USA". A search result popup is visible, showing the address and a "Zoom to" button. The legend panel on the right lists various flood hazard features, including Flood Hazard Boundaries, Flood Hazard Zones, and Primary Frontal Dunes. The map shows a large area of 1% Annual Chance Flood Hazard (light blue) and a smaller area of 0.2% Annual Chance Flood Hazard (orange). The map also shows various flood hazard boundaries and structures.

FEMA's National Flood Hazard Layer (NFHL) Viewer with Web AppBuilder for ArcGIS

Search: 213 Gates St, Portsmouth, NH, 03801, USA

Search result: 213 Gates St, Portsmouth, NH, 03801, USA

Zoom to




Legend

- Cross-Sections
- Base Flood Elevations
- Levees
- Coastal Transects
- Transect Baselines
- General Structures
 - Flood Structure
 - Bridge
 - Dam, Weir, Jetty
 - Other Structures
- River Mile Markers
- Limit of Moderate Wave Action
- Flood Hazard Boundaries
 - Limit Lines
 - SFHA / Flood Zone Boundary
 - Flowage Easement Boundary
- Flood Hazard Zones
 - 1% Annual Chance Flood Hazard
 - Regulatory Floodway
 - Special Floodway
 - Area of Undetermined Flood Hazard
 - 0.2% Annual Chance Flood Hazard
 - Future Conditions 1% Annual Chance Flood Hazard
 - Area with Reduced Risk Due to Levee
 - Area with Risk Due to Levee
- Primary Frontal Dunes

FEMA National Flood Hazard Layer Viewer

FEMA's National Flood Hazard Layer (NFHL) Viewer with Web AppBuilder for ArcGIS



Find address or place

Print   

NFHL Print Tool

Input Output

To print NFHL FIRMette or Full FIRM:
1) Click the pin tool, and click on the map to place the pin.
2) Choose to create a print-size FIRMette or full-size FIRM.
3) Press "Execute" - The process may take up to 1 minute.*

Size*
FIRMETTE

File Format*

City of Portsmouth 330139

33015C0259F eff. 1/29/2021

FEMA National Flood Hazard Layer Viewer

The screenshot displays the FEMA's National Flood Hazard Layer (NFHL) Viewer interface. The main map shows an aerial view of a coastal area with various flood hazard overlays in shades of blue and brown. A search bar at the top left contains the text "Find address or place". Below the search bar are navigation icons for zooming in (+), zooming out (-), home, and refresh. A "NFHL Print Tool" dialog box is open in the foreground, providing instructions for printing the map. The dialog box includes a "pin" icon, a "Size*" dropdown menu set to "FIRMETTE", and a "File Format*" dropdown menu set to "PDF". A "Run" button is located at the bottom right of the dialog box. The background map shows a coastal area with flood hazard overlays. A label "City of Portsmouth 330139" is visible on the map. In the bottom right corner of the map, the text "33015C0259F eff. 1/29/2021" is displayed.

FEMA's National Flood Hazard Layer (NFHL) Viewer with Web AppBuilder for ArcGIS

Find address or place

NFHL Print Tool

pin.
2) Choose to create a print-size FIRMette or full-size FIRM.
3) Press "Execute" - The process may take up to 1 minute.*

Size*
FIRMETTE

File Format*
PDF

Run

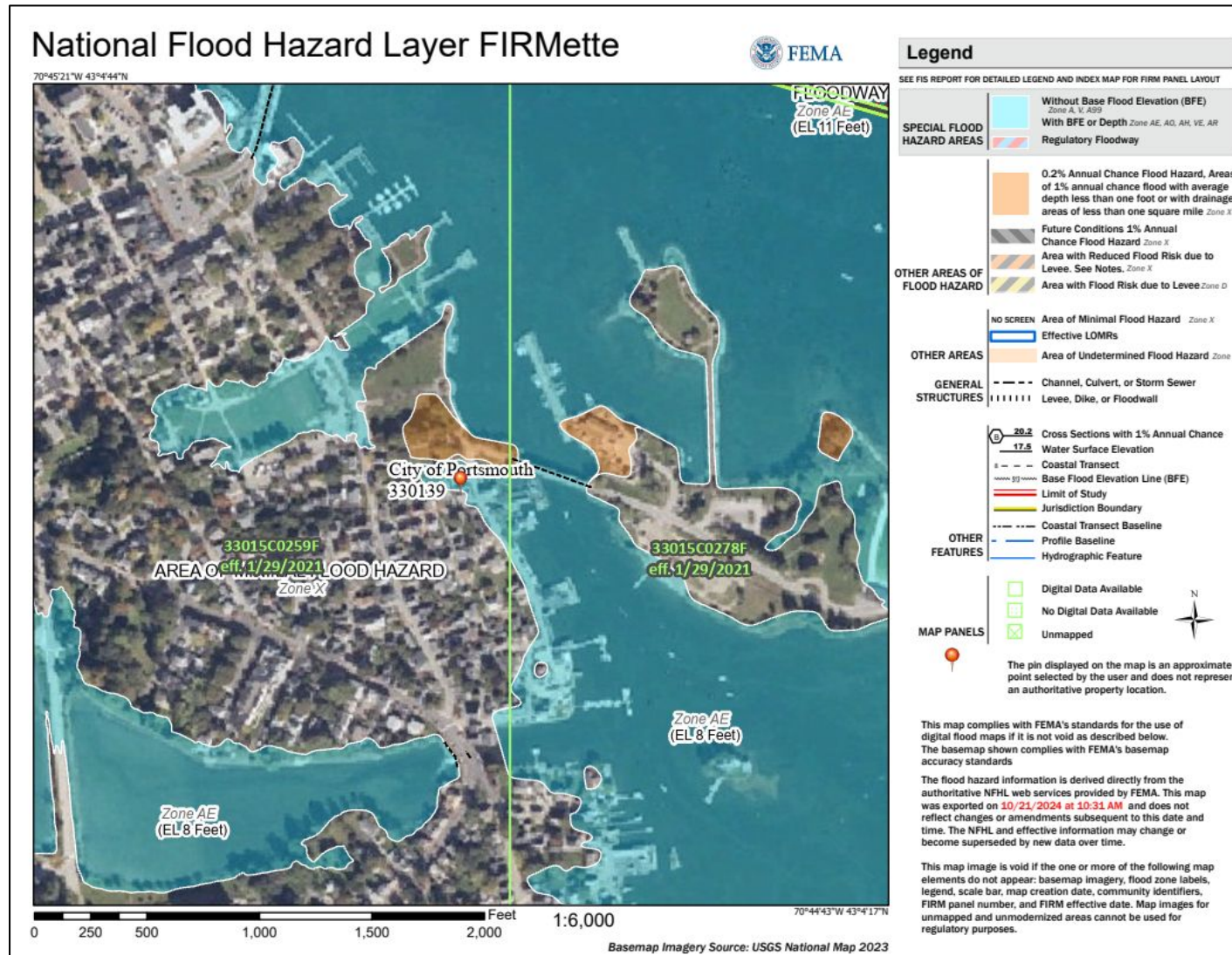
City of Portsmouth 330139

33015C0259F
eff. 1/29/2021

FEMA National Flood Hazard Layer Viewer

The screenshot displays the FEMA's National Flood Hazard Layer (NFHL) Viewer web application. The interface includes a search bar at the top with the text "Find address or place" and a magnifying glass icon. Below the search bar are navigation controls: a plus sign for zoom in, a minus sign for zoom out, a home button, and a refresh button. The main map area shows an aerial view of a residential area in Portsmouth, NH, with various flood hazard overlays in shades of blue and brown. A label "City of Portsmouth 330139" is visible on the map. In the bottom right corner of the map, the text "33015C0259F eff. 1/29/2021" is displayed. A "NFHL Print Tool" window is open on the left side of the map, featuring an "Input" tab and an "Output" tab. The "OutputMessage" section contains the text: "Click the link below to retrieve your NFHL FIRMETTE map in pdf format". The "OutputFile" section contains a URL: <http://msc.fema.gov/arcgis/rest/directories/arcgisjobs/nfhl/7993-4652-addb-be7377c20db1.pdf>. The application title "FEMA's National Flood Hazard Layer (NFHL) Viewer" and the text "with Web AppBuilder for ArcGIS" are visible at the top of the interface.

FEMA National Flood Hazard Layer Viewer

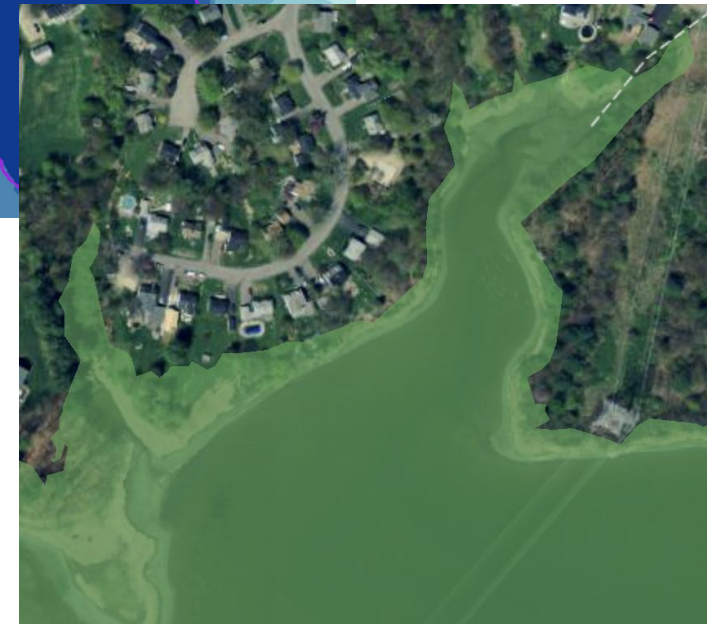


Key Questions for Buyers to Ask Sellers about Flooding

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?

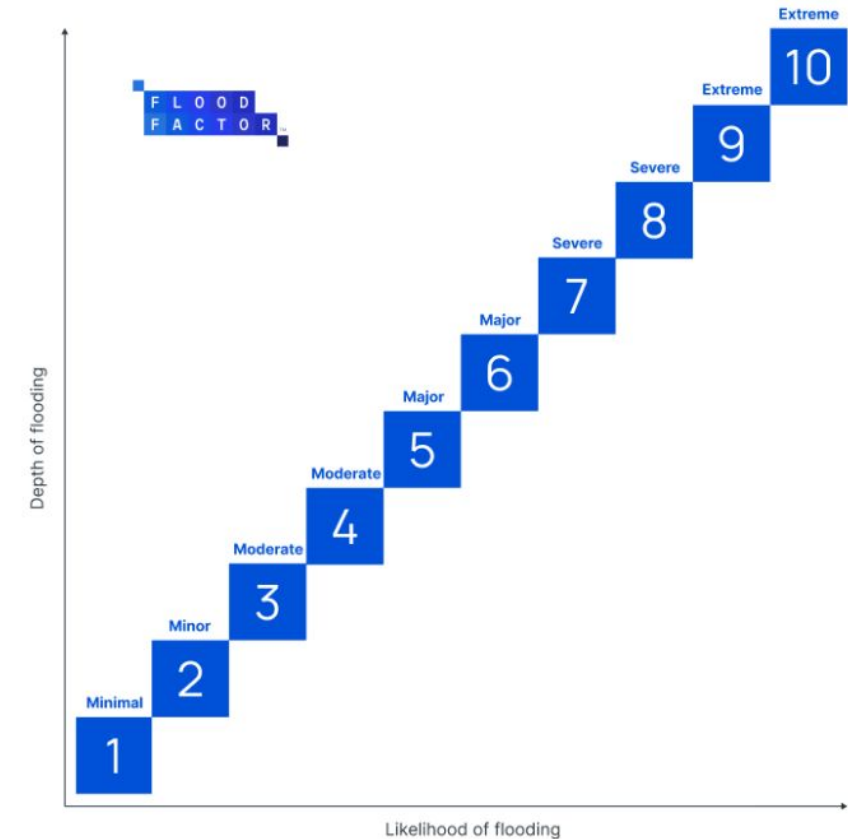
Future Flood Risk Tools

- 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.

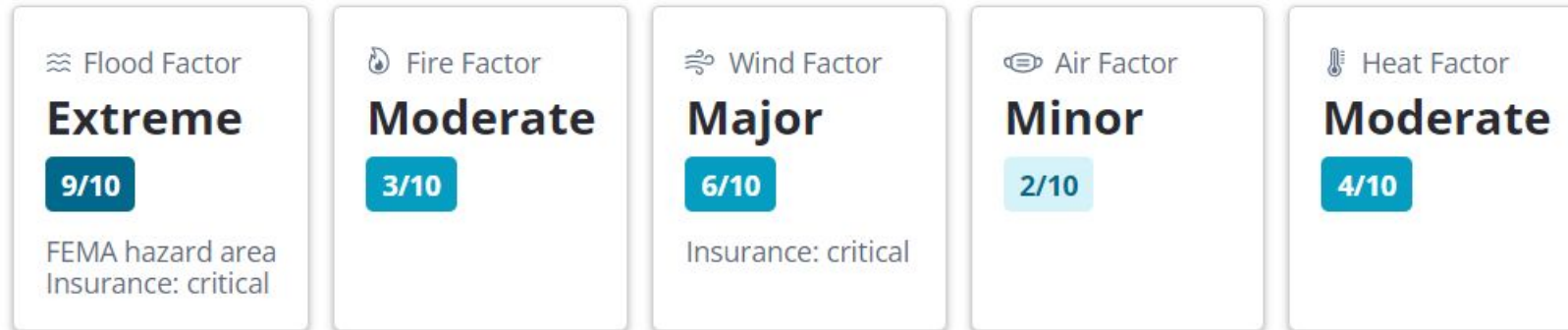
[Watch the methodology explainer video](#)

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

Climate Risks on Zillow

Climate risks

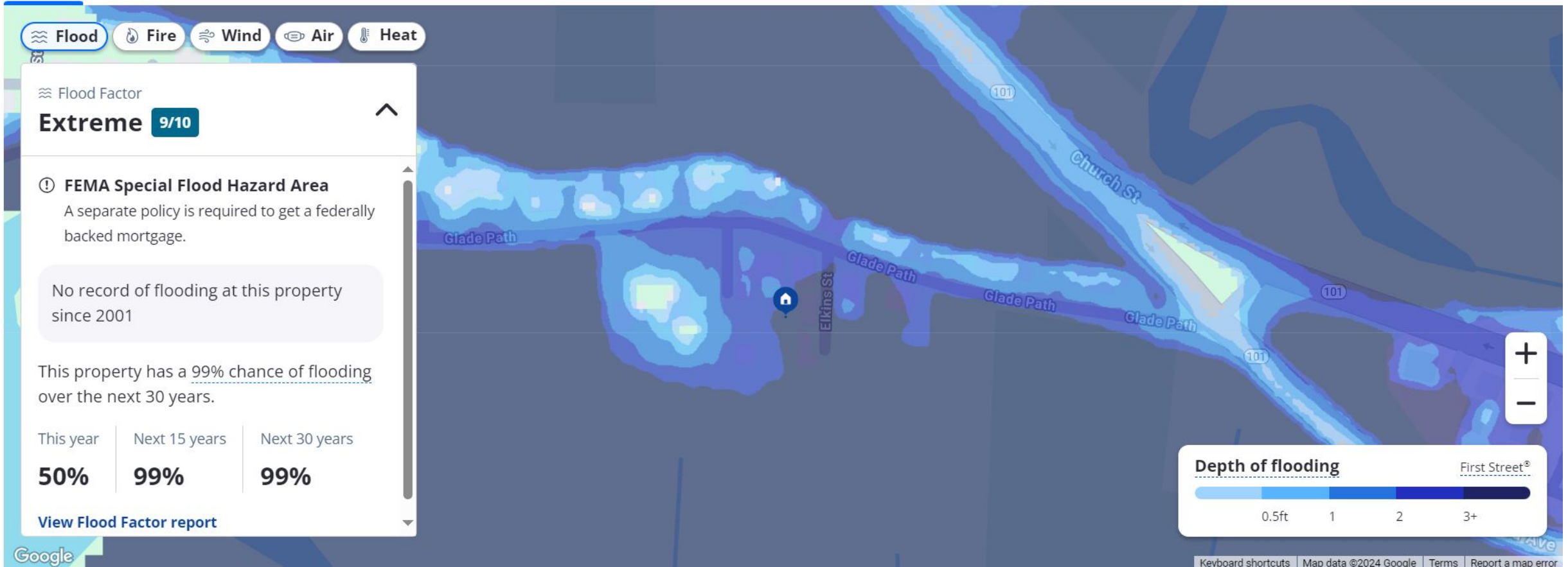
Source: First Street®



Show more >





Climate Risks on Zillow





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


Environmental Risk on Realtor.com


 **Environmental risk**


 **Flood Factor** Extreme >
This property's flood risk is increasing.

 **Fire Factor** Moderate >
This property's wildfire risk is increasing.


 **Heat Factor** Moderate >
7 days above 92°F this year

 **Wind Factor** Major >
Major risk of severe winds over next 30 years

 **Air Factor** Minor >
Risk of poor air quality is not changing

Provided by First Street Foundation 




 **9** /10 **Extreme**
FLOOD FACTOR™

[View Flood Factor™ report](#)

Flood Factor™

This property has a **100.00% 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** **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

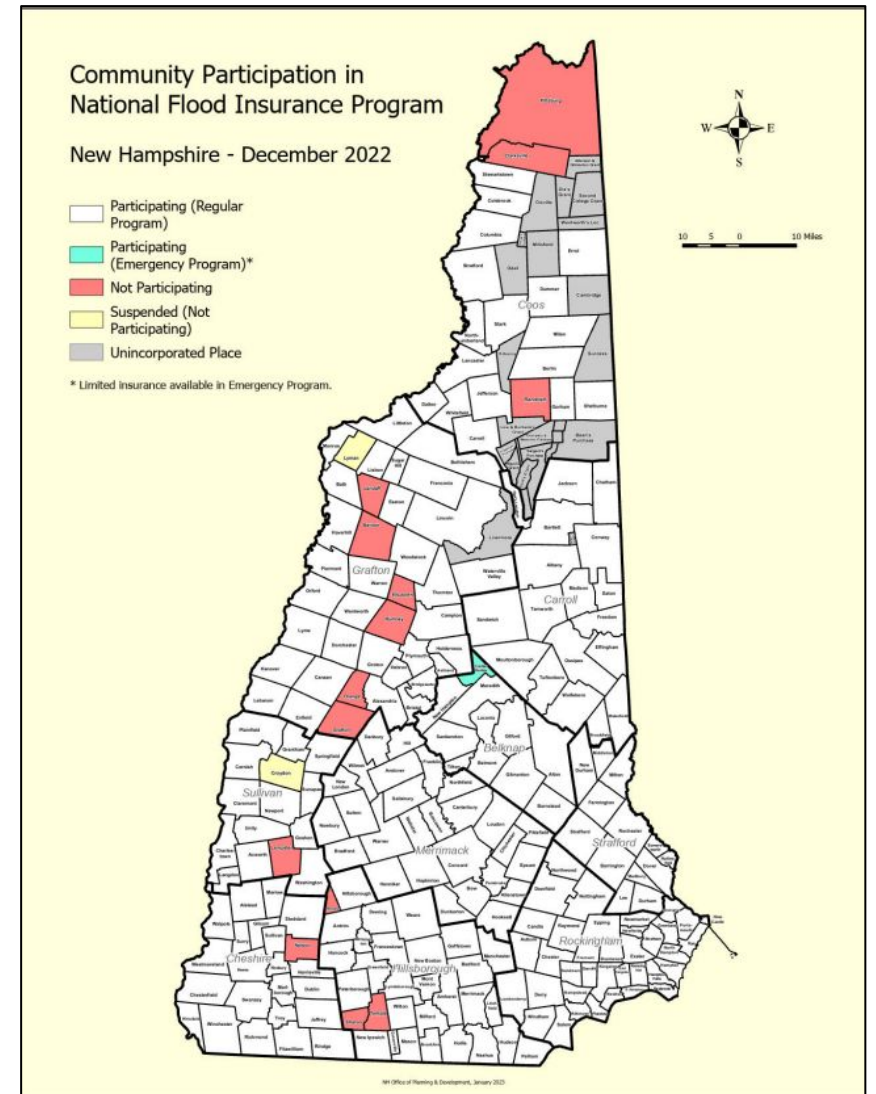
- Everyone lives in an area with flood risk (e.g. low, moderate, or high)
- Important for buyers and property owners to determine and understand the past, current and future flood risk for a property and have an understanding of their level of tolerance to deal with flood risk and all that comes with it.
- New 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

- Communities that voluntarily participate in the NFIP must adopt and enforce local floodplain regulations
- FEMA has developed floodplain regulations (Code of Federal Regulations)



<https://www.nheconomy.com/office-of-planning-and-development/what-we-do/floodplain-management-program>

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: <input type="checkbox"/> NAD 1927 <input type="checkbox"/> 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? <input type="checkbox"/> Yes <input type="checkbox"/> 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? <input type="checkbox"/> Yes <input type="checkbox"/> No		

SECTION B - FLOOD INSURANCE RATE MAP (FIRM) INFORMATION					
B1. NFIP Community Name & Community Number		B2. County Name		B3. State	
B4. Map/Parcel 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: <input type="checkbox"/> FIS Profile <input type="checkbox"/> FIRM <input type="checkbox"/> Community Determined <input type="checkbox"/> Other/Source: _____					
B11. Indicate elevation datum used for BFE in item B9: <input type="checkbox"/> NGVD 1929 <input type="checkbox"/> NAVD 1988 <input type="checkbox"/> Other/Source: _____					
B12. Is the building located in a Coastal Barrier Resources System (CBRS) area or Otherwise Protected Area (OPA)? <input type="checkbox"/> Yes <input type="checkbox"/> No Designation Date: _____ <input type="checkbox"/> CBRS <input type="checkbox"/> OPA					

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

Where to get a FEMA Elevation Certificate

- Check with City/Town building department if one is on file
- Ask sellers for a copy or ask if they can provide one before settlement
- If not available:
 - property owners or their representatives can complete it (flood insurance purposes only)
 - hire a surveyor/engineer

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

OMB No. 1680-0008
Expiration Date: November 30, 2022

ELEVATION CERTIFICATE

Important: Follow the instructions on pages 1-9.

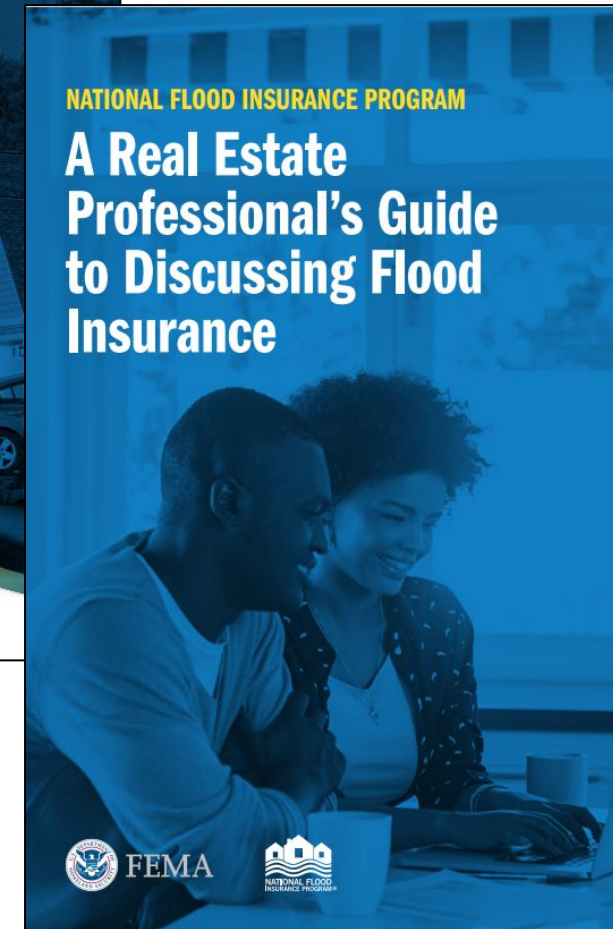
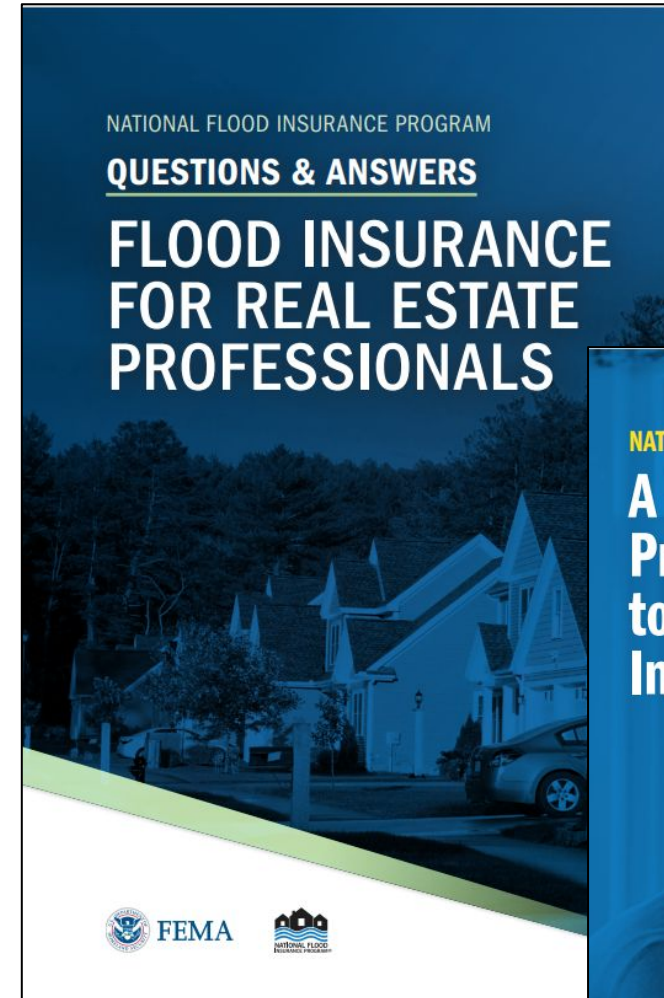
Copy all pages of this Elevation Certificate and all attachments for (1) community official, (2) insurance agent/company, and (3) building owner.

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: <input type="checkbox"/> NAD 1927 <input type="checkbox"/> 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? <input type="checkbox"/> Yes <input type="checkbox"/> 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? <input type="checkbox"/> Yes <input type="checkbox"/> No					
SECTION B - FLOOD INSURANCE RATE MAP (FIRM) INFORMATION					
B1. NFIP Community Name & Community Number		B2. County Name		B3. State	
B4. Map/Parcel Number	B5. Suffix	B6. FIRM Index Date	B7. FIRM Parcel 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: <input type="checkbox"/> FIS Profile <input type="checkbox"/> FIRM <input type="checkbox"/> Community Determined <input type="checkbox"/> Other/Source: _____					
B11. Indicate elevation datum used for BFE in item B9: <input type="checkbox"/> NGVD 1929 <input type="checkbox"/> NAVD 1988 <input type="checkbox"/> Other/Source: _____					
B12. Is the building located in a Coastal Barrier Resources System (CBRS) area or Otherwise Protected Area (OPA)? <input type="checkbox"/> Yes <input type="checkbox"/> No Designation Date: _____ <input type="checkbox"/> CBRS <input type="checkbox"/> OPA					

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

Flood Insurance

- Not an easy topic to discuss but an important one
- Don't need to be an expert, just need to know the right resources and people
- Many FEMA brochures and resources available for free



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

Please take out your phones and scan the QR code



7. 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

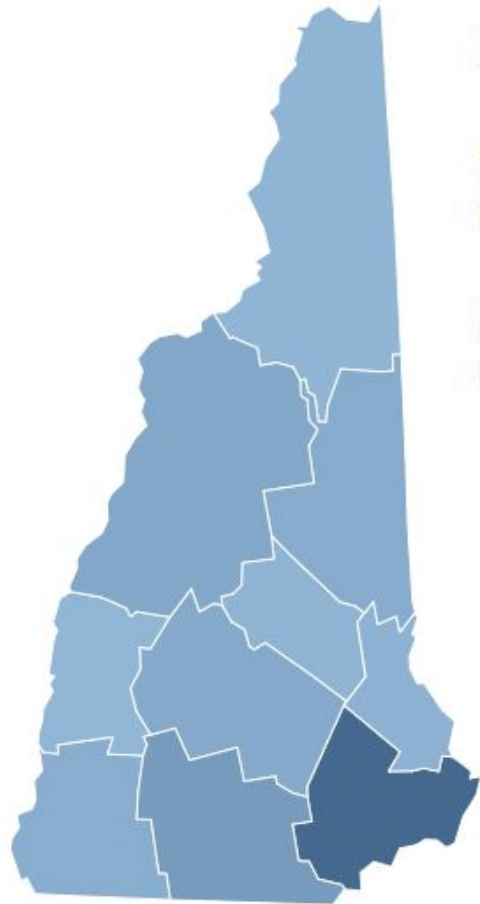


FEMA



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

Cost of Flooding (since 1978)



New Hampshire

\$55,369,498.10

Dollar amount of claims paid by NFIP

2,806

Number of NFIP claims paid

Maine

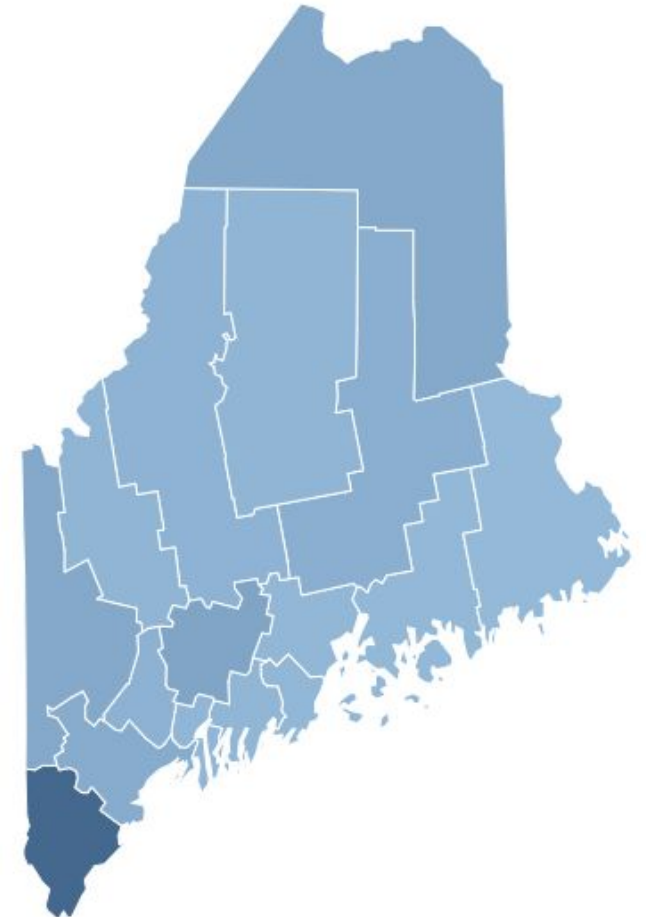
\$51,854,919.79

Dollar amount of claims paid by NFIP

2,897

Number of NFIP claims paid

Claims per state



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

A graphic with a dark blue background and a light blue wavy base representing water. At the top, yellow and white text reads: "Just 1 inch of water can cause \$25,000 of damage to your home." Below this, a light blue button says "GET FLOOD INSURANCE". To the right is a yellow measuring tape showing the number "1" at the top. At the bottom left are the logos for the U.S. Department of Homeland Security, FEMA, and the National Flood Insurance Program.

**Just 1 inch of water
can cause \$25,000 of
damage to your home.**

GET FLOOD INSURANCE

U.S. DEPARTMENT OF HOMELAND SECURITY
FEMA
NATIONAL FLOOD INSURANCE PROGRAM

Flood Insurance Coverage

- Building Coverage
- Contents Coverage
 - Renters: Content Only

Flood Insurance for Homeowners

What's Covered?

Floods are the nation's most common and costly natural disaster, with 98% of counties in the United States having experienced a flood. Did you know that most homeowners policies do not include coverage for all forms of water damage, in fact most do not cover flooding?

Flood insurance can fill those gaps. A National Flood Insurance Program (NFIP) flood insurance policy insures against damage sustained during flooding that covers two or more properties or two or more acres of normally dry land. The NFIP encourages people to purchase both building and contents coverage for the broadest protection.

EXTERIOR BUILDING COVERAGE

- Framing
- Walls
- Electrical systems
- Insured building/foundation
- Central A/C equipment
- Window frames and panes

INTERIOR BUILDING COVERAGE

- Furnaces
- Cabinets
- Floors
- Drywall
- Water heaters
- Window blinds
- Debris removal
- Some appliances
- Permanently installed carpeting
- Permanently installed bookcases

CONTENTS COVERAGE

If purchased separately

Dresser	Mattress and frame
Clothing	Artwork (up to \$2,500)
Couches	Kitchen table and chairs
Food freezers	Clothes washers and dryers
TV/electronics	

<https://www.floodsmart.gov/>

Of more than 3,000 counties in the United States, 99% experienced a flood event from 1996 to 2022. Flood insurance can protect your home from damage during a flooding event, so you can recover faster.



With flood insurance from the NFIP, you're covered. Flood insurance can cover up to:

- **\$250,000** for your residential property
- **\$100,000** for your personal belongings*
- **\$500,000** for your commercial property
- **\$500,000** for your commercial property contents

*Available to homeowners and renters

Even if you don't live near water, your home can still be at risk of flooding from changing conditions such as construction projects, surface erosion or natural events. **An average of 40% of National Flood Insurance Program (NFIP) claims come from outside high-risk flood areas.**

Federal disaster assistance requires a presidential disaster declaration and comes in the form of a low-interest disaster loan that must be repaid with interest. Only flood insurance will cover the cost of damage to your property and belongings after a flood event.

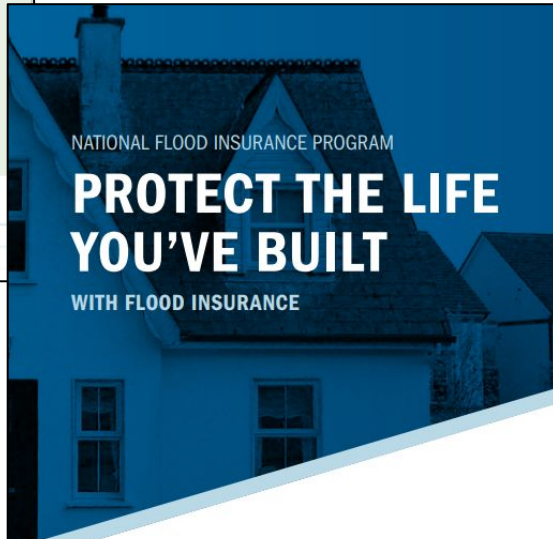
Get a quote to see how you can protect the life you've built.

Find an insurance provider who can help at floodsmart.gov/find. For more information on flood insurance, contact FEMA Mapping and Insurance eXchange (FMIX) at **877-336-2627** or email FEMA-FMIX@fema.dhs.gov.

February 2024 | F-061

MOST HOMEOWNERS INSURANCE DOES NOT COVER FLOOD DAMAGE.

But with flood insurance, you're covered.



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 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	<input type="text"/>	F-687S	<input type="text"/>
NFIP Summary of Coverage	P-2144	<input type="text"/>	P-2144S	<input type="text"/>
NFIP Summary of Coverage Commercial Property	F-778	<input type="text"/>	F-778S	<input type="text"/>
NFIP Summary of Coverage Residential Condominium Buildings	P-2180	<input type="text"/>	P-2180S	<input type="text"/>

QUICK-REFERENCE MATERIALS

NFIP Flood Insurance for Condominium Associations Brochure	P-2223	<input type="text"/>		<input type="text"/>
NFIP Flood Insurance for Renters Brochure	P-2108	<input type="text"/>	P-2108S	<input type="text"/>
NFIP Map Changes and Flood Insurance: What Property Owners Need to Know Brochure	F-P2019	<input type="text"/>	F-P2019S	<input type="text"/>
NFIP Questions & Answers: Flood Insurance for Real Estate Professionals Brochure	F-435	<input type="text"/>	F-435S	<input type="text"/>
NFIP Why Do I Need Flood Insurance? Brochure	F-002	<input type="text"/>	F-002S	<input type="text"/>

PROMOTIONAL RESOURCES

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

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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

The image features a solid green background. On the left side, there are white, irregular, wavy lines that resemble topographic contour lines or a stylized map. These lines are concentrated on the left and bottom-left areas, leaving the right side of the image mostly empty green space.

QUESTIONS?

LAST Poll Question

Please take out your phones and scan the QR code



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



Thank You!

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