

While we are  
getting  
started...

Please introduce yourself in the chat sharing:

1. Your name
2. What community you are joining us from
3. Your role/affiliation
4. What natural hazards are your community members concerned about (where is there public buy-in)?

# Natural Hazards 101 Series

## Session #4: Perspectives on Land Use Planning for Risk Reduction


December 18, 2024



## **Agenda:**

1. Foundations
2. A framework for getting started
3. Case examples
4. Discussion

## **Meeting Reminders:**

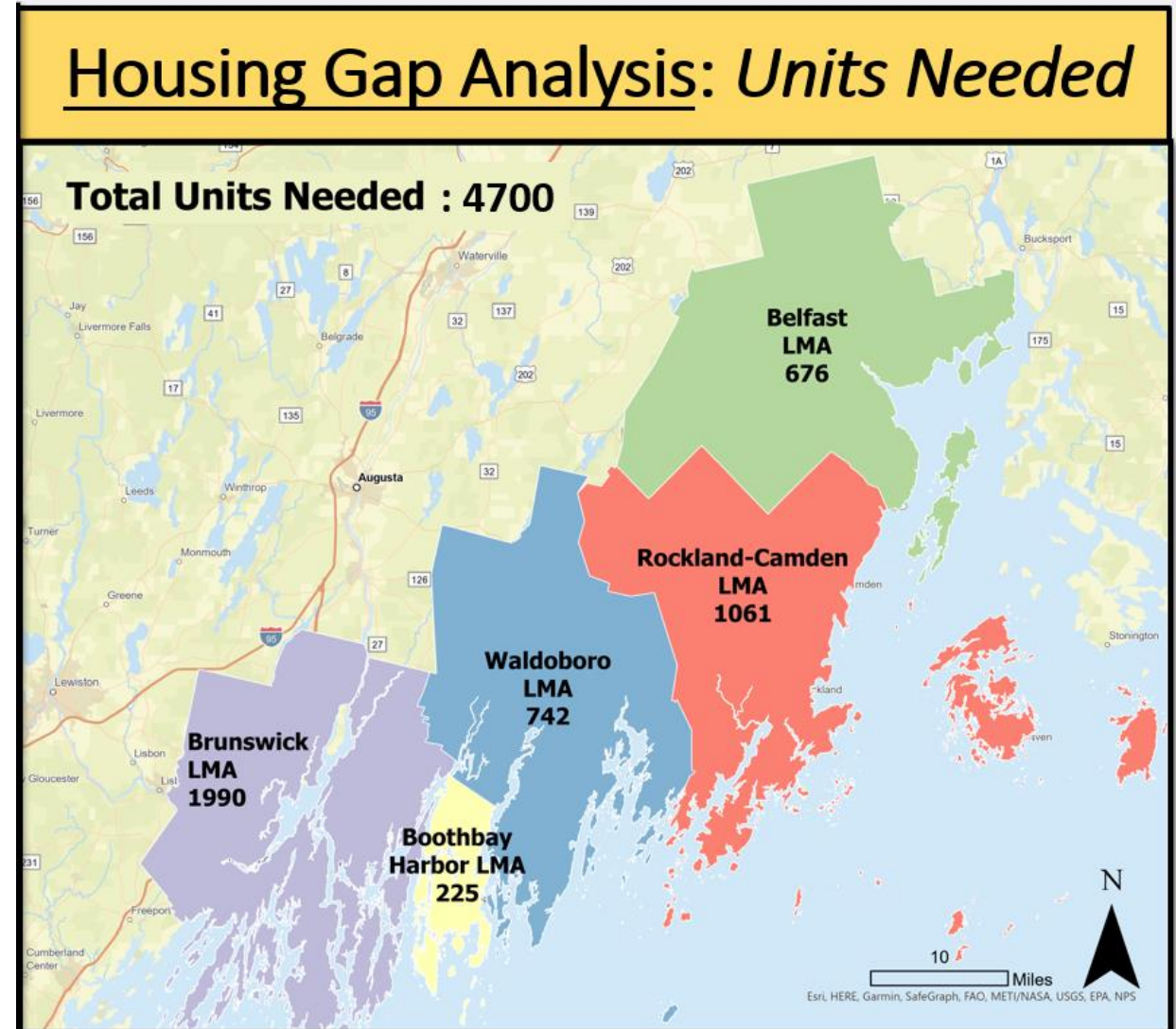
- This meeting is being recorded, if you would like to keep your camera off.
  - Please mute your audio when you are not talking.
- 

# Foundations: Why this Topic?

- Home Rule – Maine state Constitution grants authority to municipalities to govern themselves in any way they see fit unless explicitly prohibited by state
  - Communities can draft their own regulations consistent with state law
- Land use controls – mechanisms to outline how land is used
  - Help achieve community goals and visions for the future
  - Protect community members from adverse impacts of development

# Foundations: Future Goals

- Development is going to happen
  - By 2030, 6,100 +/- 1,400 units needed in Midcoast Maine (Nutt, 2023)
- Minimize physical/mental health impacts from disaster occurrences
- Reduce future costs from disaster recovery
- Minimize disruption to social and economic systems



Nutt, C. (2023). [Housing Gap Analysis](#). Midcoast Council of Governments.

Maine State Housing Authority. (2023). [State of Maine Housing Production Needs Study](#).

# Foundations: Land Use Controls

- Ordinances – local laws in municipalities (also known as rules, standards, or code)
- Zoning – used to implement a master plan
  - Most successful through a rigorous community engagement process
  - Classifies land to determine its future uses and physical construction
  - Common types include residential, commercial, industrial, mixed-use, and open-space

# Foundations: Land Use Controls

- Overlay zoning
- Setback and buffer requirements
- Subdivision standards
- Shoreland zoning “higher standards”
- Floodplain management ordinances “higher standards”
- Low impact development
- Conservation easements
  
- Density bonuses
- Transfer of development rights

# Foundations: Maine Specific Data



Sea level rise projections of 1.5 feet by 2050; 4 feet by 2100



Average temperature has increased 3 degrees; projected 10 degree increase by 2100



Increased rates and variability in extreme precipitation (2in+) and drought periods



2-4x as many extreme heat days (days over 90 degrees) by 2050



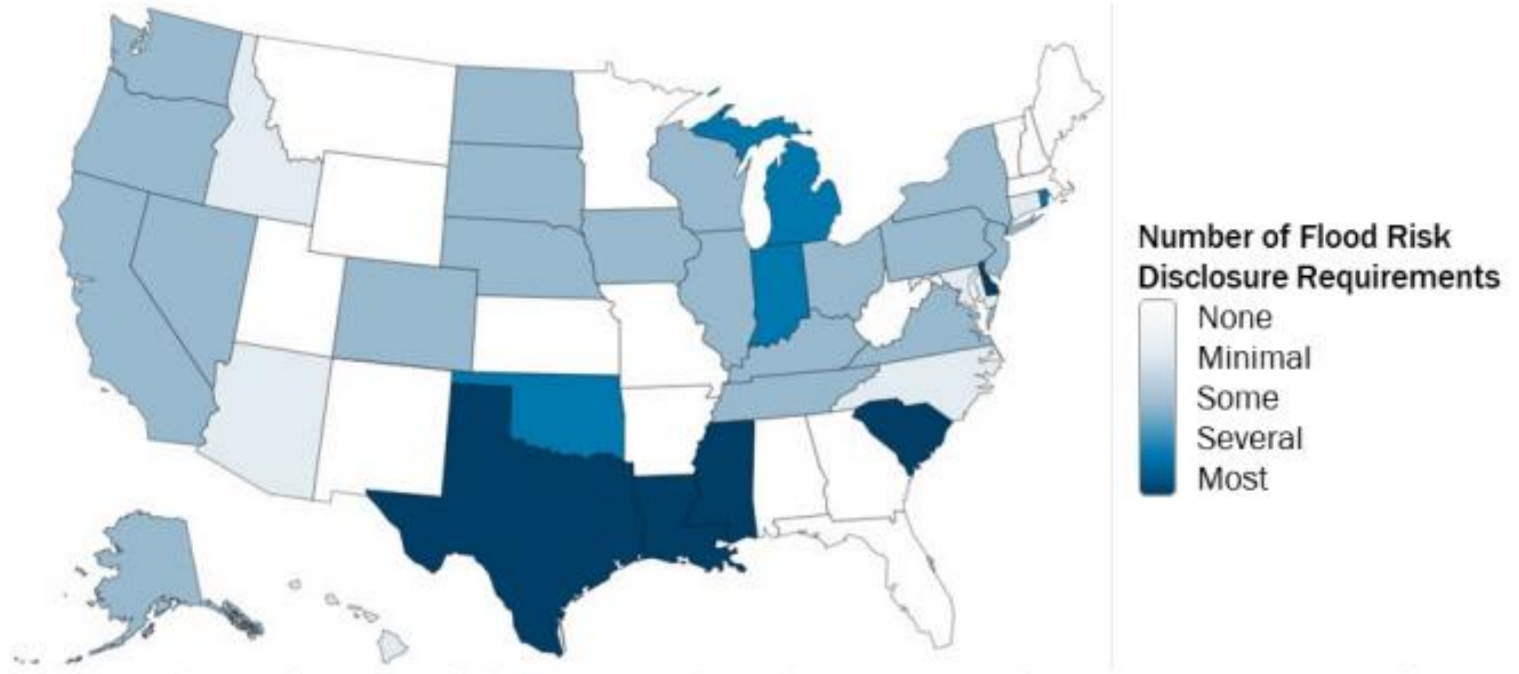
Impacts of climate change disproportionately affect socially vulnerable communities (e.g., income, age, geography, preexisting health conditions, housing)



# LD 2035: Flood Risk Disclosure

- Maine has been hammered by repeated storms, bringing severe coastal and inland flooding
- Most states have laws requiring flood risk disclosure during real estate transactions, but Maine lacked such a law until 2024

Image: A map showing the relative strength of flood risk disclosure laws by state as of mid-2022. Source: [FEMA](#)



# LD 2035: Flood Risk Disclosure

- LD 2035 became law on August 9, 2024, amending existing disclosure requirements for commercial and non-commercial real estate to include:
  - Presence in a digitally-mapped Special Flood Hazard Area
  - Whether previous floods, flood damage, flood insurance claims, and disaster related aid for flood damage affected the property while the current seller owned it

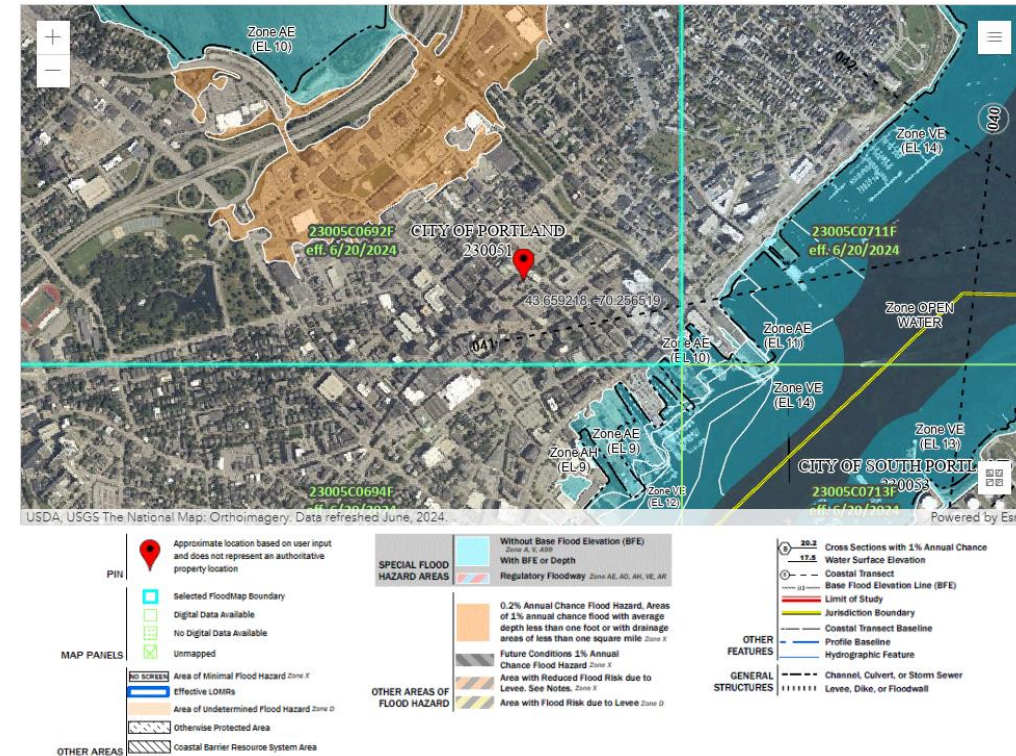


Image: An example FEMA flood map for Portland, Maine. Digital flood maps can be found at: <https://msc.fema.gov/portal/home>

# LD 2035: Flood Risk Disclosure

- Compared laws from other states to find existing best practices
- Consulted with other state agencies who would be impacted
- Considered how best to work within existing laws (minimize confusion)
- Struck a balance between consumer protection, privacy, and ease of compliance
- Conducted outreach to the regulated public (i.e., real estate community) to aid compliance

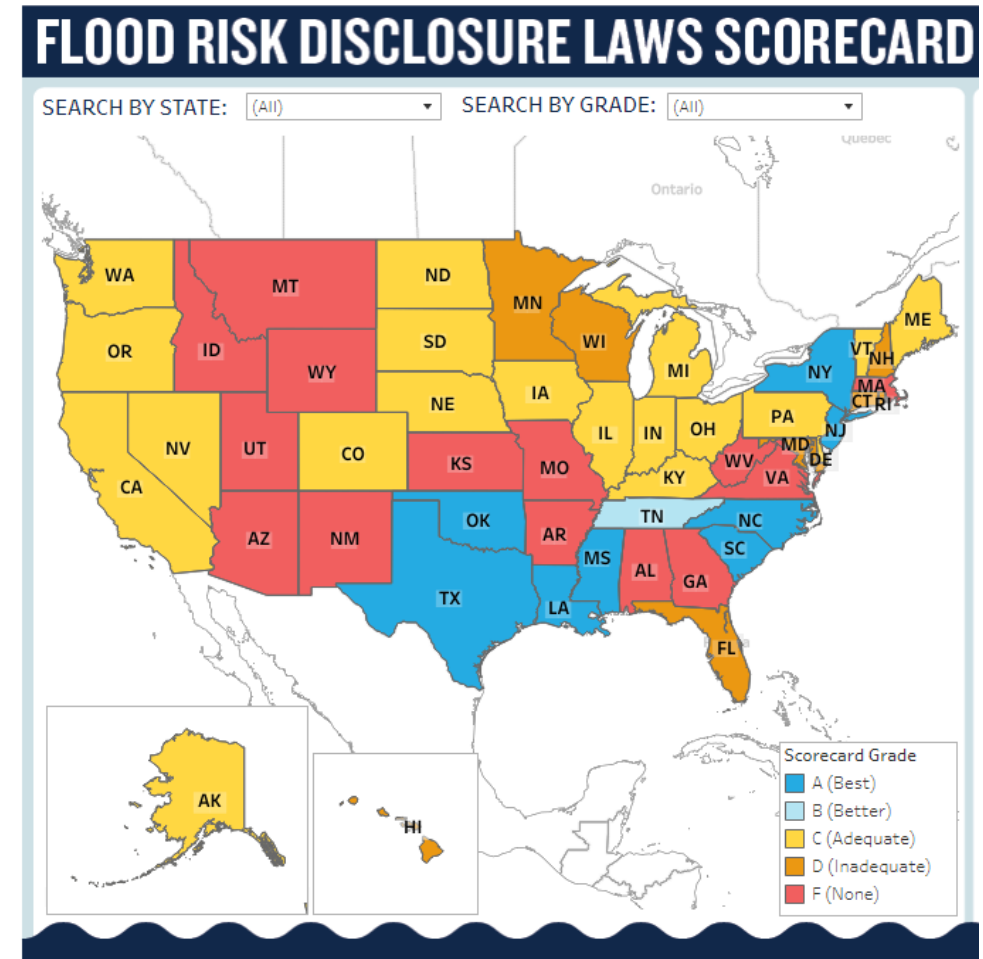


Image: [Natural Resources Defense Council \(NRDC\) flood risk disclosure laws scorecard](#). Maine had received an “F” before LD 2035 was passed. Some stricter provisions were considered but ultimately not adopted to aid with compliance and help protect privacy.

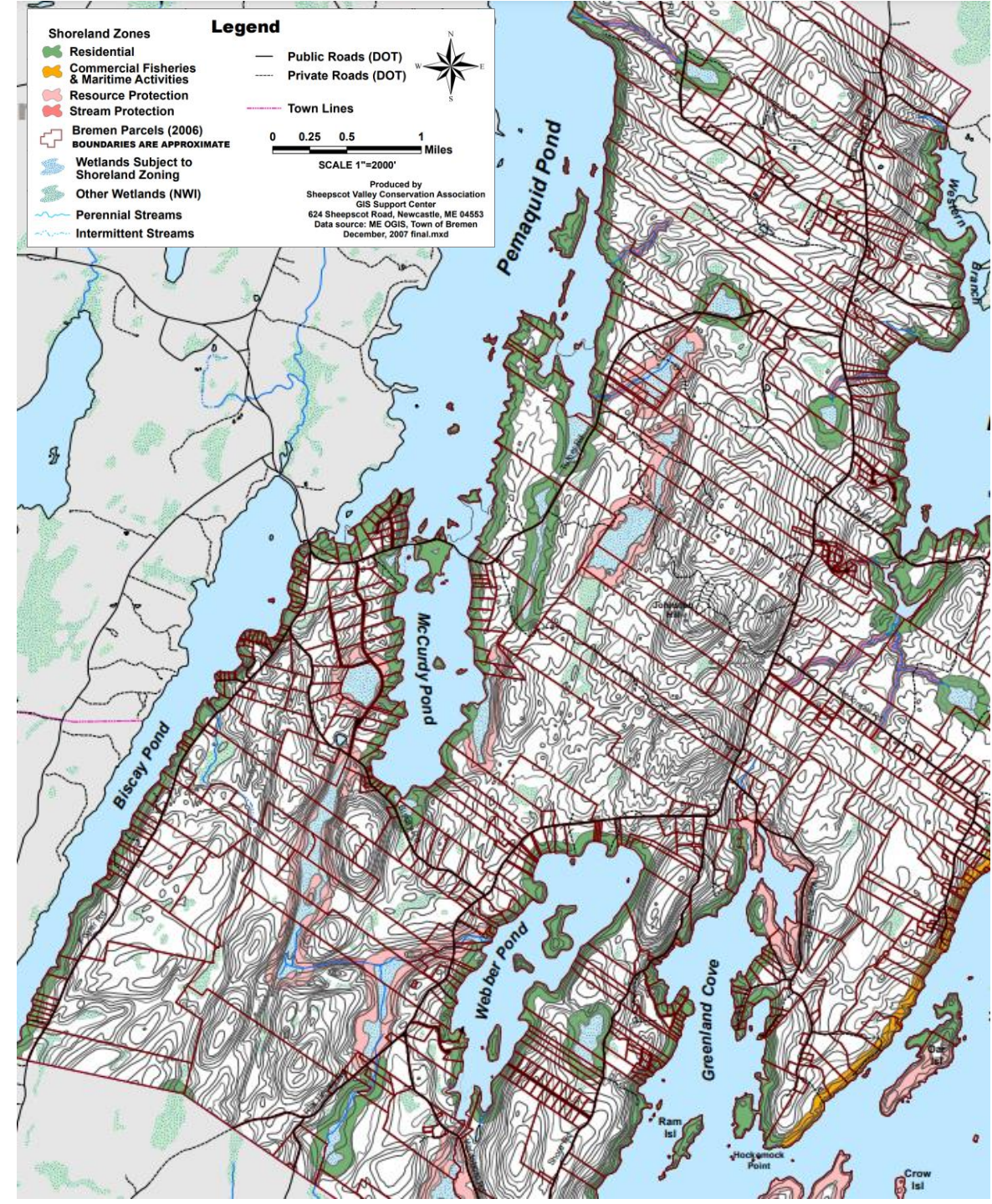
# Lessons communities can learn:

- You don't need to start from scratch
  - Chances are, someone elsewhere is already working on an issue. Learn from their ideas and tailor them to your local needs.
- Work with the public to help ensure that ordinances are easy to understand and reasonable to comply with
- Ensure coordination across government – involve any affected town departments, committees, etc. early in the process
- Ordinances can be bold or incremental – sometimes different approaches are needed to build momentum or address an urgent problem
  - Don't let the perfect be the enemy of the good



# Example: Bremen Shoreland Zoning Ordinance

- Shoreland zoning applies to all structures within areas of special flood hazards to prevent damage from sea level rise or to comply with floodplain management requirements
- Non-conforming structures can be raised to meet the local floodplain management elevation or up to 4 feet above the FEMA base flood elevation, whichever is greater
- Allows for structure be relocated, reconstructed, replaced, or elevated within parcel boundaries to avoid damage due to sea level rise



# Example: Rockport Special Overlay Districts

- Rockport Special Overlay Districts - Chickawaukie Watershed District and the Mirror Lake and Grassy Pond Watershed District
  - Both overlay districts cover all areas of the town zoning map where surface and groundwater flows into these respective water bodies
  - “Within the Chickawaukie Watershed District, all activities other than normal home gardening and property maintenance, involving soil disturbance greater than 1,000 sq. ft. shall require the preparation of a written Erosion and Sediment Control Plan.”
  - “Within the Mirror Lake and Grassy Pond Watershed District all agricultural practices and uses shall require the preparation of an agricultural practices plan for each contemplated activity.”
  - Within both overlay districts, if there is a conflict between the overlay requirements and shoreland zoning requirements, the more restrictive provisions shall apply.

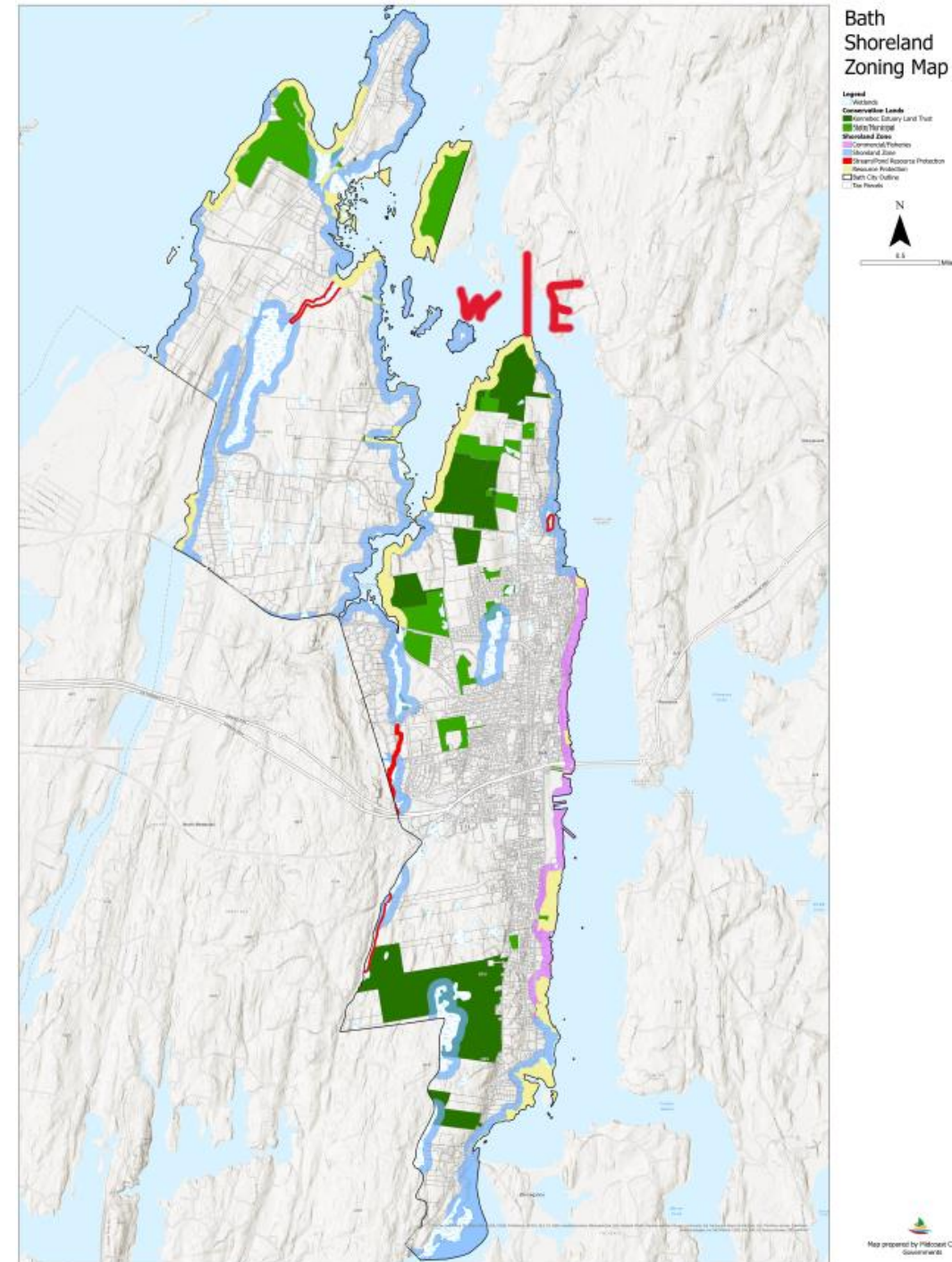
# Example: Waldoboro Water Quality Protection

- Waldoboro emphasizes water quality protection in their land use ordinance, in part to protect a valuable local resource - one of the more productive clam harvest areas in the state on the Medomak River, along with protection of local drinking water.
- Wellhead Overlay District to add additional protections to the public water supply source.
- The town also sets phosphorus control measures for any site plan or subdivision proposal within the watershed of great ponds that are within the greater Medomak River watershed.



# Example: City of Bath Reduction Plan for Sea Level Rise

- Bath planning department is working to address rising seas and more frequent waterfront flooding by preparing a proposal that would increase freeboard requirements for new construction in floodplain areas from the traditional 1 ft to 3 ft.
- The Waterfront Setback Reduction Plan requires new developments within the Shoreland Zone to have an additional level of review to confirm there are no negative impacts to floodplains, the water quality of the Merrymeeting Bay nor Kennebec River, nor identified significant wildlife habitats.
- Setback Reduction Plan applies to developments within 150 feet of the water bodies east of Thorne Head; meanwhile, new developments west of Thorne Head require the Plan for all Shoreland developments.



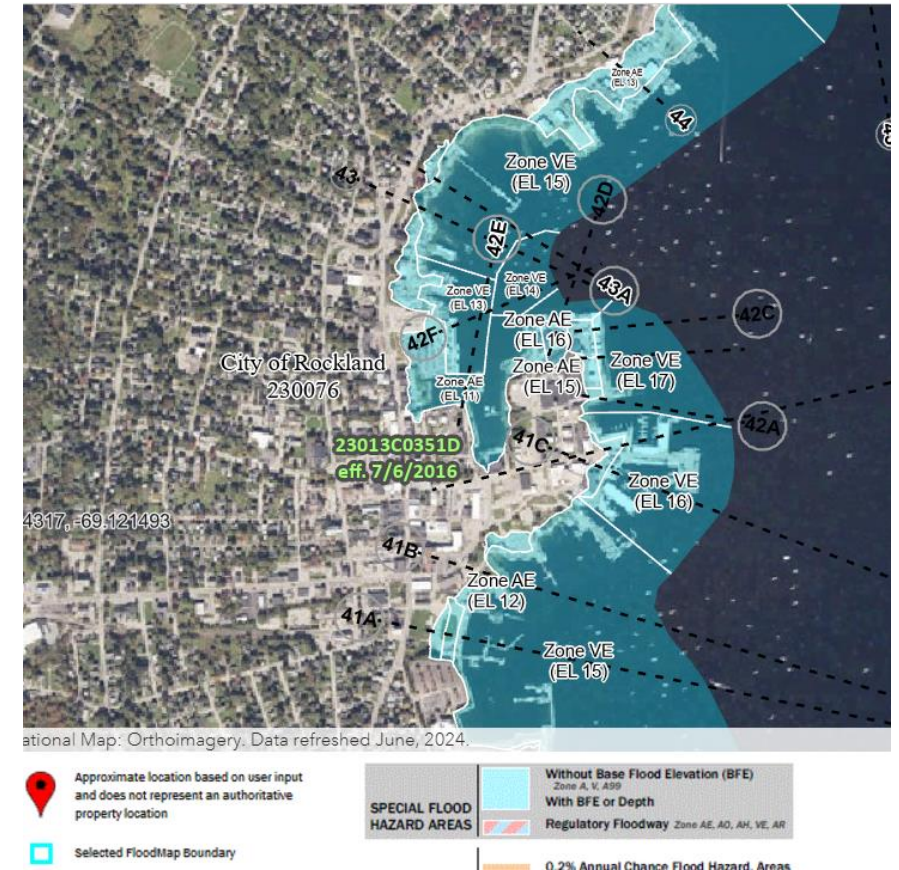


# Example: Floodplain Management Ordinances

Action requires – Existing zoning is in place, mapping of a hazard area, creating additional requirements to development review process

Example: March 2024 [Hampton, NH Floodplain Management Ordinances](#) using FEMA Special Flood Hazard Areas (SFHAs)

FEMA Flood Zone Designations				
Undetermined Risk	Low Risk	Moderate Risk	High Risk	Coastal High Risk
Increasing Risk				
Zone D	Zones C and X (unshaded)	Zones B and X (shaded)	Zones A, AE, A1-30, AH, AO, A99	Zones V, VE, V1-30
	Non-Special Flood Hazard Area (NSFHA)		Special Flood Hazard Area (SFHA)	



# Example: Floodplain Management Ordinances

- Prohibit new development of critical facilities (e.g., emergency stations, hospitals, wastewater treatment, water supply) in SFHAs unless strict protocol followed
- Require new development to adhere to Hampton “Sea Level Rise Design Flood Elevation”
  - Uses FEMA base flood elevation and adds an additional 1-6’ depending on the flood zone and type of structure (e.g., public facility, accessory)
- Require new construction of building utilities (e.g., oil tanks, electric panel) to be elevated to the required lowest floor of the structure



Image: Henry Swenson via Henry’s Weather Channel (January 10, 2024)



Image: Town of Hampton Floodplain Management Ordinance Update Public Information Session (September 20, 2023)

# SMPDC Model Ordinance Guide:

Southern Maine Planning and Development Commission (2022) [\*Municipal Guidance for Coastal Resilience: Model Ordinance Language for Maine Municipalities\*](#)

- Workgroup included folks from Tremont, Vinalhaven, Kittery, Wells, South Portland
- Provides customizable language for Maine communities to incorporate higher standard ordinances:
  1. Floodplain Management Ordinance
    - **“Adopt a supplemental inundation map depicting a sea level rise scenario the community wishes to use as a baseline for regulating new development (p. 14).” (e.g., 4-foot SLR by 2100)**
  2. Shoreland Zoning
    - **“Reference the highest astronomical tide (HAT) rather than highest annual tide or mean higher high water (MHHW) to define the edge of a wetland (p. 24).”**
  3. Subdivision and Site Plan Review
    - **“Require open space is the first consideration in development design, prioritizing natural resource conservation, water quality protection, recreation... (p. 31)”**
  4. Zoning
    - **“Establish a resilience overlay zoning district to implement standalone ordinances... may identify and include unstable bluffs and erosion, flood-prone areas, marsh migration, sea level rise (p. 37).”**



# FEMA Community Rating System:

- Voluntary incentive program that offers flood insurance rate discounts to households in communities that are participating in the program
- To participate, a community must meet a minimum number of “credits” by implementing pre-approved floodplain management practices that exceed those of the National Flood Insurance Program
- Highly encouraged by the updated Maine Climate Action Plan, Infrastructure Rebuilding and Resilience Commission, and the Community Resilience Partnership
- Common actions taken in participating Maine communities:
  - **310: Elevation Certificate** (E.g., maintain written procedures and certificates for elevated floodplain buildings)
  - **320: Map Information Service** (E.g., publicize and provide Flood Insurance Rate Map information)
  - **330: Outreach Projects** (E.g., public education on floodplain benefits, flood hazards, and/or flood insurance)
  - **420: Open Space Preservation** (E.g., keep floodplains free of development, such as through zoning and land use control incentives)
  - **430: Higher Standards** (E.g., require coastal construction standards for critical facilities)

See for more information: [FEMA Community Rating System Brochure \(March 2023\)](#)

# Reminder – Benefits of Urban Trees

- Reduce urban heat island effect
- Improve health, mood, and social networks
- Reduce air pollution
- Store carbon
- Intercept stormwater and reduce runoff
- Provide wildlife habitat
- Reduce traffic speeds and improve safety
- Provide a sense of place and community identity
- Can be historically or culturally significant

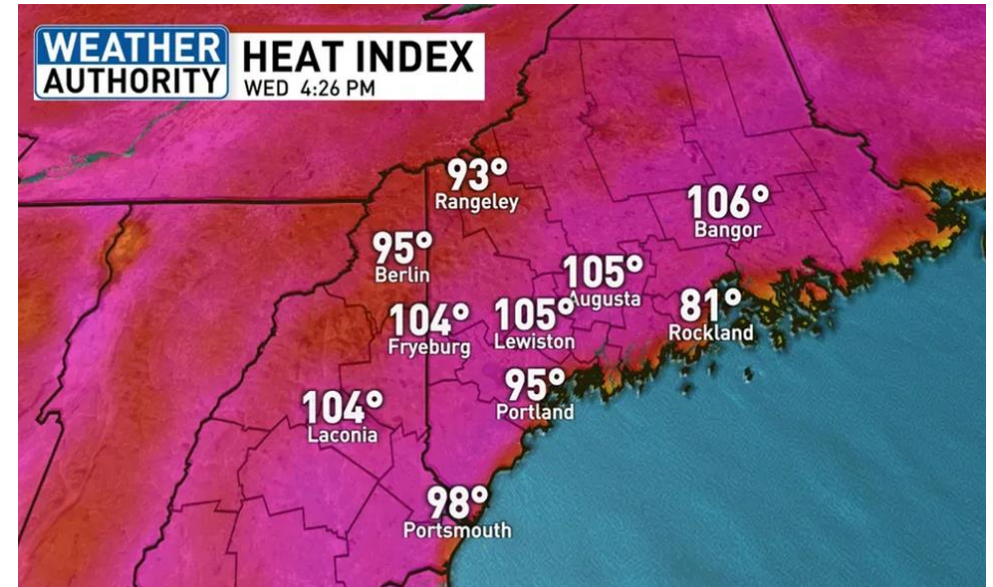


Image: WGME, June 19, 2024



Image: Texas A&M Forest Service



# Tree Ordinances – what are they?

- Provide protections for trees on municipal properties and rights of way
  - Typically include provisions for public safety, forest health, etc.
  - May differ for street trees vs. a natural forest owned by the municipality
- Authority over public trees delegated to a municipal official, a citizen board, or both
  - Examples include an urban forester, a public works director, a tree board, or some combination



Image: David Ludwig

# What can you include in a tree ordinance?

- In addition to assigning authority over public trees, tree ordinances can:
  - Provide a mechanism for review before tree removal decisions are made
  - Require creation of an urban forest inventory or management plan
  - Maintain a list of acceptable tree species for future plantings
  - Encourage or require planting new trees following removal
  - Require mitigation payments if trees are damaged or removed illegally
- You can get creative and tailor ordinances to meet the values and needs of your community!
  - If you want to add tree planting/landscaping requirements for new development, consider whether it may be a barrier to affordability and adjust accordingly.

# Tree Ordinances – why adopt them?

- Can provide basis for actions by the municipality and by interested citizen groups
  - Enhances sustainability and resilience
  - Public engagement and community building
- With proper planning and caring for trees at all life stages, risks of failures and damage from storms can be reduced
  - Right tree in the right site
  - Pruning and care to establish healthy form
  - Addressing forest health concerns proactively

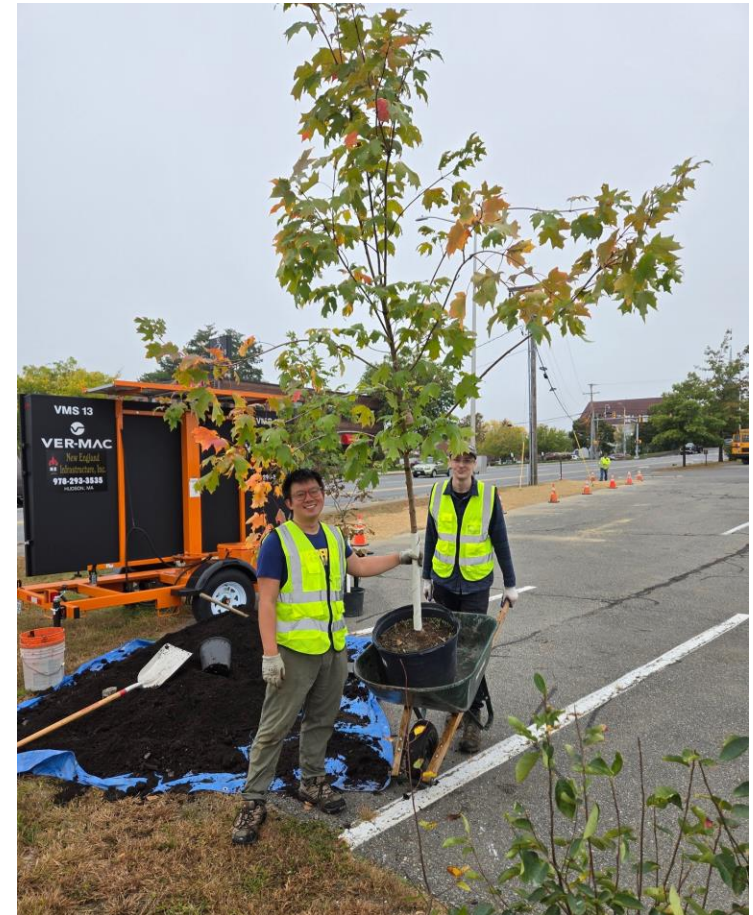


Image: Bangor Beautiful



# Tree Ordinances – why adopt them?

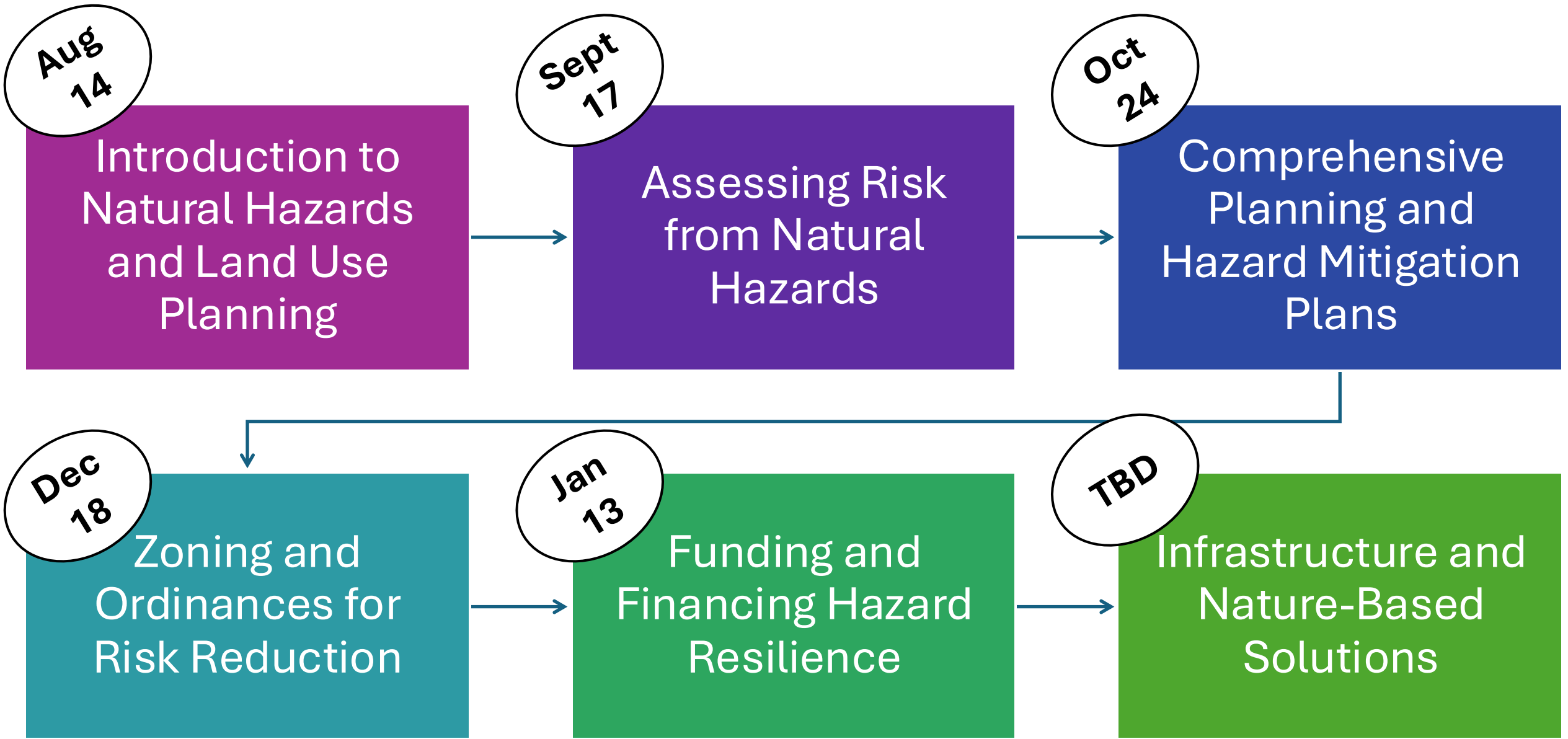
- Protect trees at all times, not just to meet a landscaping requirement during development
- At least 19 Maine cities and towns have some form of municipal tree ordinance
  - Midcoast communities include Brunswick, Bath, Rockland, and Camden
- Prerequisite for Tree City USA certification from Arbor Day Foundation



Image: Arbor Day Foundation

# For more information:

- Visit the Arbor Day Foundation's page to learn more about tree ordinances:  
<https://www.arborday.org/our-work/tree-city-usa/standards>
- Learn more about the Tree City USA program in Maine:  
[https://www.maine.gov/dacf/mfs/policy\\_management/project\\_canopy/programs/tree\\_city\\_usa.html](https://www.maine.gov/dacf/mfs/policy_management/project_canopy/programs/tree_city_usa.html)
- Contact Jan Santerre, Maine Forest Service
  - [jan.santerre@maine.gov](mailto:jan.santerre@maine.gov), (207) 287-4987
- You can also view tree ordinances from other Maine communities:
  - Kennebunk: <https://www.kennebunkmaine.us/DocumentCenter/View/243/Kennebunk-Tree-Ordinance--adopted-June-2009?bidId=>
  - Bath:  
<https://www.cityofbathmaine.gov/departments/ParksRecreationForestryCemeteries/city-tree-ordinance>



# Presenter Contact Information

**Rachael Hamilton** – NOAA Coastal Management Fellow  
Maine Coastal Program  
[Rachael.Hamilton@maine.gov](mailto:Rachael.Hamilton@maine.gov)

**David Ludwig** – Senior Climate Planner  
Bureau of Resource Information and Land Use Planning  
[David.ludwig@maine.gov](mailto:David.ludwig@maine.gov)

## **Lincoln County Regional Planning Commission**

Laura Graziano – [lgraziano@lcrpc.org](mailto:lgraziano@lcrpc.org)  
Curtis Brown – [cbrown@lcrpc.org](mailto:cbrown@lcrpc.org)

## **Midcoast Council of Governments**

Max Johnstone – [mjohnstone@midcoastcog.com](mailto:mjohnstone@midcoastcog.com)  
Dan Debord – [ddebord@midcoastcog.com](mailto:ddebord@midcoastcog.com)

**Jeremy Martin** – Planning & Development Director  
Camden, ME  
[jmartin@camdenmaine.gov](mailto:jmartin@camdenmaine.gov)

**Michael Martone, AICP** – Planner  
Newcastle and Damariscotta, ME  
[planner@damariscottame.com](mailto:planner@damariscottame.com)