Planning for Resilience:
A Practical Framework for Maine’s Coastal Communities to Evaluate Local Vulnerability and Prepare for Flood Hazards

Maine Sustainability & Water Conference
Thursday, March 29, 2018
Augusta, ME
Presentation Overview

- Flood Resilience Checklist
- Development
- Content
- Implementation process
- Pilot
- Building resilience in ME communities
Resilience

The **capacity** of a community, including both social and ecological systems, to **absorb** a natural disturbance and **sustain** its function, structure, and performance.

– Resilience Alliance
Why Plan for Resilience?

- Flooding is one of the most significant natural hazards
- Increasing storm frequency and intensity
- Rising seas
- Need for information, tools, and guidance to understand local risk and vulnerabilities
“If you look across all our natural disaster policies, they’re predicated on the wrong assumption that our flood risk in the future looks identical to our flood risk in the past.”

– Rob Moore, Sr. Policy Analyst, Natural Resources Defense Council
What Is It?

Practical self-assessment tool and integrated framework for...

- Examining local flood risk and preparedness
- Assessing vulnerability of the social, built, and natural environments
- Identifying strategies for increasing resilience

Who Should Use It?

Communities wanting to...

- Understand flood vulnerability and sea level rise
- Build flood resilience
- Enhance coastal hazard recovery
Development Process

- Literature review
- Assessment of existing similar tools
- Discussions with practitioners
- Input from state agencies
- Pilot
Flood Resilience: A Complex Puzzle

- Emergency Management
- Floodplain Management
- Economic Development
- Public Works
- Land Use Planning
- Tourism & Recreation
Checklist Categories

1. Risk and Vulnerability
2. Critical Infrastructure & Facilities
3. Community Planning
4. Social & Economic Vulnerability
5. Natural Environment
Flood Resilience Checklist

Driven by State

Driven by community

Top-down

Bottom-up
Checklist Content

• Instructions
• Getting Started
  – Suggested resources
• Questions
• Resources & Recommendations
• CRS linkages
<table>
<thead>
<tr>
<th>Community Planning</th>
<th>Yes.</th>
<th>No</th>
<th>M/A</th>
<th>Notes</th>
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</thead>
<tbody>
<tr>
<td>Does your community have a shared vision of ‘community resilience’?</td>
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<tr>
<td>Does your community have plans that address the following?</td>
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<tr>
<td>• Coastal hazards</td>
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<tr>
<td>○ Coastal and nuisance flooding</td>
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<td>○ Storm surge</td>
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<td>○ Sea level rise</td>
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<td>○ Coastal erosion and/or shoreline change</td>
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<tr>
<td>• Adaptation and mitigation strategies and actions addressing coastal hazards</td>
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<tr>
<td>• Community resilience and specific strategies and actions to increase resilience</td>
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<td>• Open space preservation and management</td>
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<td>• Beach management</td>
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<tr>
<td>• Floodplain management</td>
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<td>Does your community have the following personnel on staff or on retainer?</td>
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<td>• Professional planner</td>
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<td>• Code enforcement officer</td>
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<tr>
<td>• Certified Floodplain Manager (CFM®)</td>
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<td>• Building inspector</td>
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<td>• Engineer</td>
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<td>• Public works director</td>
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<td>Does your community’s floodplain ordinance exceed minimum State standards?</td>
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<td>Does your community’s floodplain ordinance apply to flood hazard areas that extend beyond, horizontally and/or vertically, those identified as the Special Flood Hazard Area (SFHA) or 100-year floodplain depicted on your community’s Flood Insurance Rate Map (FIRM) (e.g., does it apply to existing and potential future flood hazard areas)?</td>
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<tr>
<td>Do your community’s Shoreland and municipal zoning ordinances and/or land use regulations limit development in areas subject to (a) existing and (b) potential future flood hazards?</td>
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<td>a</td>
<td>b</td>
<td>a    b</td>
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Actionable Information

• Moving beyond the theory of resiliency toward operationalization and implementation of the practice of resilience

Indicator: Race and ethnicity

Actionable: Do you provide flood outreach materials in all languages spoken in your community?
Framing questions as ‘actionable’

<table>
<thead>
<tr>
<th>Social and Economic Vulnerability</th>
<th>Yes</th>
<th>No</th>
<th>N/A</th>
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<tbody>
<tr>
<td>1. Has your community identified and assessed the following traditionally vulnerable populations located in areas vulnerable to (a) existing and (b) potential future flood hazards and considered them in flood hazard risk, preparedness, and response activities?</td>
<td>a b</td>
<td>a b</td>
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<tr>
<td>• Elderly population</td>
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<td>• Households below the poverty level</td>
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<td>• Residents without vehicle access</td>
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<td>• Disabled individuals</td>
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<td>• Non-native English speakers</td>
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<td>• Service industry professionals</td>
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<td>• Homeless population</td>
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6. Does your community conduct education and outreach to ensure community members and businesses are aware of hazard risks, warning procedures, and evacuations plans? Are education and outreach materials prepared in the major languages spoken by residents and visitors?
Community Rating System (CRS)

- Voluntary NFIP program
- Encourages and rewards community actions that exceed minimum floodplain requirements
- Provides discounted flood insurance
- Reduces flood risk
- Incentivizes resilience
<table>
<thead>
<tr>
<th>Checklist Section and Question</th>
<th>Activity</th>
<th>Element</th>
<th>Description</th>
<th>Max. Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>21 Community Planning</td>
<td>610</td>
<td>610</td>
<td>This activity provides credit for a community that, at a minimum, has adopted a flood warning and response program that includes a flood threat recognition system; methods to warn the public of an impending flood; a plan for response operations; and coordination with critical facility operators.</td>
<td>395</td>
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<tr>
<td>23</td>
<td>610</td>
<td>612.b</td>
<td>Credit is provided for emergency warning alerts and messages that are disseminated to the public when a flood is imminent.</td>
<td>75</td>
</tr>
<tr>
<td>24</td>
<td>610</td>
<td>612.c</td>
<td>This element credits a flood warning and response plan that identifies specific tasks to reduce or prevent threats to health, safety, and property from flooding.</td>
<td>115</td>
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<tr>
<td>25</td>
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<td>Does your community have a (a) flood warning plan and (b) system?</td>
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<td>Does your community have an emergency communication system to use prior to, during, and after a storm event or natural disaster (e.g., reverse 911 call system for landlines, IPAWS for cell phones)?</td>
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<td>Does your community have an emergency evacuation plan that identifies populations needing evacuation assistance and mechanisms for providing that assistance?</td>
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</table>
Checklist Process

- Workshops
  - Participatory mapping
  - Facilitated discussion
- Summary & recommendations report
- Implementation of identified actions
Maine Flood Resilience Checklist Process

**Phase 1**
- Pre-Workshop
  - Initial contact with community
  - Identify and engage participants
  - Schedule workshop with community
  - Determine flood hazard scenarios of interest
  - Create and print maps of flood hazard scenarios
  - Send Checklist to participants for initial review

**Phase 2**
- Workshop
  - Introduction and overview
  - Community resilience
  - Checklist process
  - Flood hazards
  - Review and discuss flood hazard maps
  - Facilitated participatory mapping to ID key areas and resources of
  - Natural Environment
  - Facilitated participatory mapping to ID key areas and resources of
  - Community Planning
  - Social and Economic Vulnerability
  - Critical Infrastructure and Facilities
  - Risk and Vulnerability

**Phase 3**
- Post-Workshop
  - Summary, debrief, and discussion of findings/results
  - Facilitated discussion of initial identification and prioritization of possible next steps for acting on Checklist results and potential funding sources
  - Evaluation of Checklist and process
  - Draft summary report of key findings and potential next steps
  - Share report with community, collect feedback, and revise
  - Identify and prioritize next steps/action items and discuss potential funding opportunities to support actions
  - Implement and evaluate next steps

*Dependent on community’s interests and funding availability*
Checklist Implementation

Scope & organize

Determine flood hazard scenarios

Assess impacts & vulnerability

Discuss results

Identify & prioritize actions
Pilot Process

- SMPDC and the City of Saco
- 2 Workshops
  - March 2017
- Formal evaluation
- Summary report
  - findings and recommendations
Pilot Results: Updates to Comprehensive Plan

• Consider limited growth beach zone
• Consider TIF to support infrastructure resiliency
• Integrate resilience criteria into CIP
• Develop targeted outreach program
• Document response and recovery information for reimbursement
• Investigate opportunities for public-private partnership for low-interest loans for elevating homes
• Consider hazard disclosure policy
• Install high water mark signs
I have a better understanding of what ‘community resilience’ means for my community as a result of this process.

I have increased my knowledge of potential actions and strategies my community can undertake to enhance resilience to coastal flood hazards as a result of this process.
This process improved communication and information sharing between municipal departments and/or individuals regarding flood-related information.

I think my community will take steps to increase its Community Rating System (CRS) score as a result of this process.
Building Resilience in ME Communities

• SMPDC is partnering with communities to implement the Checklist
  – Technical expertise
  – Funding
  – Timely
Questions and Discussion

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