Summary of Opportunities, Gaps and Needs:
Responding to Maine Climate Needs - A Roundtable Showcasing Available Climate Data and Tools

Overview

On October 10, 2014, approximately 40 federal, state, and regional climate leaders working in the State of Maine participated in a full-day roundtable event to explore opportunities to address climate related needs through federal-state partnerships and existing data, tools and resources. The roundtable was organized as a federal-state partnership among National Oceanographic and Atmospheric Administration, Environmental Protection Agency-Region 1 and Maine Department of Environmental Protection. The event was hosted by the New England Environmental Finance Center at the University of Southern Maine in Portland, Maine.

Goals

The roundtable event was designed to achieve five participant goals, including:

- Understand a suite of resources available to help advance Maine's response to impacts of climate change
- Build applied knowledge on topics of most concern to Maine agencies
- Discuss continued climate related needs and opportunities
- Identify strategies for moving forward and working together, and
- Provide networking opportunities among Federal, state and regional agencies

Topics

The agenda consisted of three panel sessions focused on topics relevant to municipal and regional planning needs determined by Maine DEP:

- Impacts of precipitation on infrastructure
- Impacts of sea level rise on infrastructure
- Impacts of climate and land use on the natural environment

Each panel featured speakers from state and federal agencies with data, tools or other resources available to continue efforts to address related needs. Participating agencies included: Maine Department of Transportation; Maine Geological Survey; Maine Department of Inland Fish and Wildlife; Casco Bay Estuary Partnership; NOAA (NWS, Digital Coast); EPA Region 1; US Geological Survey; Federal Highways Administration; Department of Homeland Security – Office of Infrastructure Protection; and, US Forest Service.

Discussion: Resources, Gaps and Needs

1. Precipitation
   - NOAA tools and resources
     - Climate at a Glance: Data stations available for ME with records back to 1930s. www.ncdc.noaa.gov/cag
     - Extreme precipitation atlas: http://precip.eas.cornell.edu
     - Precipitation Frequency Data: Updating Maine information now, for release in 2015. Comments are requested through early November 2014. http://hdsc.nws.noaa.gov/hdsc/pdfs/peer_review/
   - USGS tools and resources
     - Water Watch: River and stream gage data. http://waterwatch.usgs.gov
     - Historical changes in annual peak stream flows: http://pubs.usgs.gov/sir/2010/5094/
     - Modeled future peak stream flows: http://pubs.usgs.gov/sir/2013/5080/
   - EPA tools and resources
     - Streamflow indicators: http://www.epa.gov/climatechange/science/indicators/ecosystems/streamflow.html

- FHWA tools and resources:
    - Climate Change and Sustainability resources: www.fhwa.dot.gov/environment/climate_change/adaptation/
    - MAP 21 (Moving Ahead for Progress in the 21st Century): Required to consider risk. New funding proposal would require resilience and adaptation. https://www.fhwa.dot.gov/map21/
    - HEC 25, Highways in the Coastal Environment: updates in progress to consider planning for sea level rise and storm surge. http://www.fhwa.dot.gov/engineering/hydraulics/library_listing.cfm
    - HEC 17, Design in the Floodplain: updates to consider FEMA flood risk maps. http://www.fhwa.dot.gov/engineering/hydraulics/library_listing.cfm
    - Gulf Coast Study: http://www.fhwa.dot.gov/environment/climate_change/adaptation/ongoing_and_current_research/gulf_coast_study/index.cfm

- Identified Gaps and Needs (through discussion):
    - Inland flooding models
    - Downscaled precipitation data
    - Risk mitigation options for transportation sector, including economic risk of mitigation actions including no action
    - Funding for additional stream gage data
    - Translate technical engineering guidance and data for DPW/Road agents
        - Building code example: FLASH translates building code for resilient construction for volunteers/site managers
    - Address disconnect between community regulations and state infrastructure standards
    - Options for slowing water down, not just bigger culverts
    - Provide advice to communities on sizing culverts

2. Sea Level Rise
- Maine tools and resources:
    - Flood frequency and nuisance flood frequency data
    - Potential hurricane inundation mapping (PHIM): www.maine.gov/dacf/mgs/hazards/phim
    - Highest Annual Tide mapping: to be released in 2014

- DHS tools and resources:
    - Regional Risk Analysis Program (RRAP) Project in Casco Bay Watershed
    - Summary report of results and tools used to be made available through William DeLong (DHS-OIP-Maine, available in 2015)

- EPA tools and resources:
    - Climate Ready Estuaries: http://www2.epa.gov/cre
    - Climate Ready Water Utilities Toolbox: http://water.epa.gov/infrastructure/watersecurity/climate/index.cfm
    - Planning for Flood Recovery and Long-term Resilience in Vermont (lessons learned from Irene): http://www.epa.gov/smartgrowth/pdf/vermont-sgia-final-report.pdf
    - Flood Resilience Checklist: http://www.epa.gov/smartgrowth/pdf/Flood-Resilience-Checklist.pdf
    - WARN: Mutual aid program for water utilities. http://water.epa.gov/infrastructure/watersecurity/mutualaid/index.cfm
    - South Berwick, ME pilot project videos:

        - Overview video - https://www.youtube.com/watch?v=r25J-DJH2NQ&feature=youtu.be
        - Step One - https://www.youtube.com/watch?v=PhY5mP4ZJJk&feature=youtu.be
        - Step Two - https://www.youtube.com/watch?v=eOlFPQA6POw&feature=youtu.be
        - Step Three - https://www.youtube.com/watch?v=Dj46VFl13nY&feature=youtu.be
        - Step Four - https://www.youtube.com/watch?v=ETqHQ3ibclI&feature=youtu.be

- Water Research Foundation tools and resources:
    - Effective Climate Communication for Water Utilities: http://www.waterrf.org/Pages/Projects.aspx?PID=4381

- Maine Department of Transportation tools and resources:
    - Maine DOT and FHWA using COAST tool to identify cost-effective adaptation options for state transportation assets. Judy Gates or Cassie Chase for details.

- Identified Gaps and Needs (through discussion):
    - Communication between municipalities and state on transportation decisions at local level, especially upsizing culverts

3. Land Use and the Natural Environment
    - Maine Department of Inland Fish and Wildlife tools and resources:
        - Maine Wildlife Action Plan: 2015 revision includes climate change. http://www.maine.gov/ifw/wildlife/conservation/action_plan.html
    - Casco Bay Estuary Partnership tools and resources:
        - Sea level rise and Casco Bay wetlands report: http://www.cascobayestuary.org/resources/publications/2013-sea-level-rise-and-casco-bays-wetlands-reports/
        - European Green Crab Factsheet: http://www.cascobayestuary.org/publication/european-green-crab-factsheet/
    - NOAA tools and resources:
        - Digital Coast: http://coast.noaa.gov/digitalcoast/
        - Land cover products: www.coast.noaa.gov/landcover
        - CCAP comparison tool: www.coast.noaa.gov/ccap-comparison
        - SLR Viewer for marsh data: www.coast.noaa.gov/slr
        - Land cover atlas: www.coast.noaa.gov/landcoveratlas
    - US Forest Service tools and resources:
        - Climate change resource center: www.fs.usda.gov/ccrc/
        - Climate change tree and bird atlas: tool shows how habitat and home ranges are likely to change. http://www.fs.usda.gov/ccrc/tools/tree-and-bird-atlas
        - iTree: Quantifies benefits of urban trees. http://www.fs.usda.gov/ccrc/tools/i-tree
        - NorEaST stream temperature web portal: http://www.fs.usda.gov/ccrc/tools/noreast-stream-temperature-web-portal
        - Northeast Climate Hub: site in development

    - Identified Gaps and Needs (through discussion):

Participant Feedback

- Feature experiences from end user of tools and resources
- Increase participation from municipalities, regional planning commissions, Sea Grant, emergency management and private sector
- Provide funding for local participation