

New report provides a comprehensive outlook on climate resilience of Massachusetts municipalities

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A comprehensive new report published today by a team of 20 researchers representing four University of Massachusetts system

campuses provides valuable insight into the various climate resilience approaches being undertaken by municipalities across Massachusetts.

Led by UMass Amherst economist Marta Vicarelli, and assisted by the Massachusetts Municipal Association (MMA), the researchers conducted a survey of Massachusetts municipal administrators from Aug. 9–Oct. 1. The responses they received from representatives of 111 municipalities and 10 planning agencies shed new light on numerous climate change-related issues facing the Bay State's cities and towns, including the hazards and impacts experienced in coastal and inland municipalities and the resilience strategies adopted to address these challenges, the barriers encountered during the design and implementation of resilience strategies and the data needs of communities and planning agencies to aid implementation of resilience strategies.

Among the key findings detailed in the 84-page report:

- Nearly 90 percent of municipalities indicate that climate adaptation and resilience planning are a priority in their planning documents, and 80 percent have already completed a vulnerability/risk assessment.
- Climate-related migratory flows seem to have been emerging from coastal to inland municipalities. In coastal municipalities, the most frequently reported strong economic impacts include additional costs related to [disaster response](#), decreases in housing availability and difficulty obtaining home and business insurance. More than 10 percent of respondents reported that their community is already strongly affected by an increase in housing insecurity and outmigration of residents, and respondents in inland municipalities are more likely to anticipate future economic impacts from the in-migration of residents.
- More than 75 percent of the survey's respondents identified

elderly residents, people with disabilities and low-income residents as groups vulnerable to climate change. These groups are also more likely to be the focus of targeted municipal resilience programs. Veterans, African-Americans, other people of color and immigrants are also identified as vulnerable groups by about 30 percent of respondents.

- Negative impacts on coastal infrastructure, such as shoreline retreat and impacts to ports, and on the blue economy (e.g., commercial fisheries) seem to have noticeable economic ramifications also in inland municipalities
- Strategies that municipalities most frequently report not having adopted and wanting to adopt in the future include: creation of post-disaster redevelopment plans; the development of adaptive management capacity; changes to building, plumbing, septic and electrical codes; changes to municipal zoning or planning practices; increasing the climate resilience of telecommunication networks; weatherization and retrofitting of buildings; improvement or expansion of stormwater drainage systems; and increasing the resilience of power stations.
- Limited staffing capacity is the most frequently reported barrier to the implementation of climate change resilience plans, while other frequently reported barriers include a lack of municipal expertise to address complex climate change issues, insufficient resources to mobilize broad community support, difficulties changing regulations and by-laws, the need for more intra-municipal and regional cooperation and a lack of regulatory authority to support enforcement of strategies.

The results of the survey will be used to refine the mission of the Northeast Center for Coastal Resilience (NCCR), a knowledge hub involving all campuses of the UMass system.

"We will continue monitoring the resilience indicators collected in this

baseline study in subsequent studies and expand our analysis to include additional stakeholders," says Vicarelli, assistant professor of economics and public policy at UMass Amherst. "Our goal is to align NCCR's research with the actual regional needs, by developing collaborative partnerships throughout the region with municipalities, planning agencies, public agencies, non-profit organizations, businesses, and other local stakeholders."

"The inspiration for NCCR took shape while I was serving on the Intergovernmental Panel on Climate Change (IPCC)," says report co-author Rob DeConto, professor of geosciences and co-director of the School of Earth and Sustainability (SES) at UMass Amherst. "That experience taught me that physical scientists, engineers, and social scientists must work together in a truly integrated way to tackle the complex issues emerging on our coastlines as a result of climate change. It is also paramount that we tailor research to meet the needs of our communities and decision-makers. This survey report is a critical step toward that goal. Without the generous seed funding from the university, this massive effort would not have been possible."

"This report demonstrates that the impacts of climate change are of great concern to Massachusetts towns and cities, and that action to mitigate these impacts is already underway," adds Robert Darst, associate professor of political science at UMass Dartmouth and a co-author of the report. "The report also indicates that effective [climate](#) action at the municipal level will require more extensive regional coordination and technical assistance to identify and assess the economic costs and benefits of available options."

Support for the survey was provided by SES through the use of its center seed grant funds from UMass Amherst. The report, which builds upon important work to engage with regional coastal [resilience](#) leaders, was prepared by researchers at the University of Massachusetts' Amherst,

Boston, Dartmouth and Lowell campuses with the support of the MMA. The MMA facilitated the organization of focus groups during the survey's design and helped disseminate the survey online to leaders in all of Massachusetts' 351 municipalities, from which nearly one-third provided responses.

More information: Climate Resilience: A Survey of Massachusetts Municipalities: [www.umass.edu/ses/research/nor ... /reports-information](http://www.umass.edu/ses/research/nor.../reports-information)

Provided by University of Massachusetts Dartmouth

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