The need for historic preservation and climate resiliency

By Brian Kuchar

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The strong storms and flooding this past summer in the Northeast that decimated Leominster, Mass. and the state of Vermont have certainly raised awareness of climate-related public safety and property loss concerns. However, increasingly frequent severe weather events also serve as a stark reminder that many of New England's historic sites and structures are also in harm's way.

From Portland to Provincetown and Narragansett to Nantucket, some of our irreplaceable links to the past, without carefully executed resiliency planning, are "sitting ducks" for rising sea levels and increased storm and flooding threats.

Many historic structures and sites, particularly on the East Coast, are located in low-lying areas near the ocean or along rivers and likely built on fill — that's just the way our early settlements were established. Therefore, these sites are vulnerable to rising sea levels caused by climate change. During extreme weather events, this vulnerability is exacerbated by storm surges, heavy rainfall and erosion. After centuries of displacement by fill and accompanying development and construction, flood waters threaten to reclaim old riverbanks and coastlines, potentially taking history along with them.

The human desire to continually alter our coastal environment to better suit our current needs appears to be on a collision course with the future impacts of a rapidly changing climate. Therefore, creative, sustainable solutions are required.

Now — right now — is the time for action to preserve our waterfront and flood prone historical sites with a multidisciplinary approach combining engineering and science with landscape architecture, land use planning and public policy.

Learning from our past and taking a more nature-based approach by using green stormwater infrastructure mimics the natural water cycle through filtering and absorbing stormwater. These cost-effective and easy to maintain solutions include bioswales, sand filters, bioretention cells and rain gardens, among others. Nature-based solutions add benefits as they reduce water pollution, improve the quality of ground and surface waters, and enhance aquatic and wildlife habitats.

Efforts to preserve Strawbery Banke Museum, a living museum in Portsmouth, N.H., also the state's oldest city, is a shining example for historic site preservation in New England. Located along the shores of the Piscataqua River and Portsmouth Harbor, Strawbery Banke is proactively fortifying itself against the inevitable threat of flooding and rising sea levels from climate change. The museum engaged environmental consultants and planners to restore some of the natural functions of the low-lying land in the museum's campus. During storms, the area routinely floods, infringing on the museum's ability to carry out its mission. Plans to manage flood waters include constructing a wetland in the middle of the site, which will help mitigate the influx of water to the area during storms.

Other significant projects completed or underway throughout the region to preserve historic sites

and structures using nature-based solutions include Heritage Museums and Gardens (Sandwich, Mass.), The Newport Town Spring (Newport, R.I.) and The House of Seven Gables (Salem, Mass.).

The stewards of historic sites and structures need to adapt to the challenges and threats of climate change. Avoiding the problem is no longer feasible and, for these sites and landmarks, retreat is usually not possible. What we can do, what we need to do, is build up the resiliency and sustainability of these sites. At the very least, countermeasures need to be put into place at vulnerable sites to keep them intact for the next five to 10 years while a long-term resiliency plan is developed.

Acting now will not only preserve our history for generations to come but preserve local tourist economies, sustain livelihoods and protect our environment.

We can do this.

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