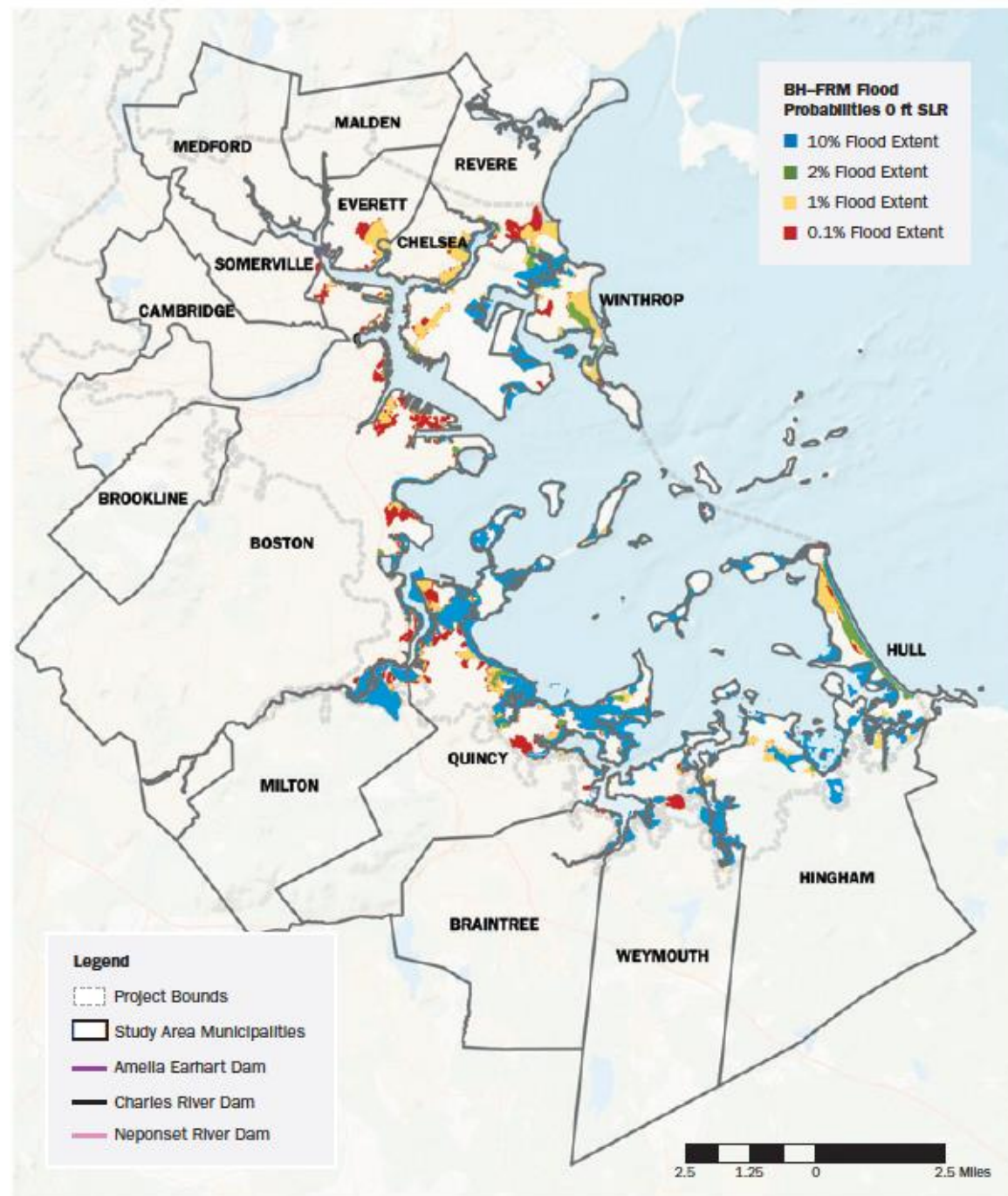


Part II of Presentation to MAPC ICC June 16, 2021

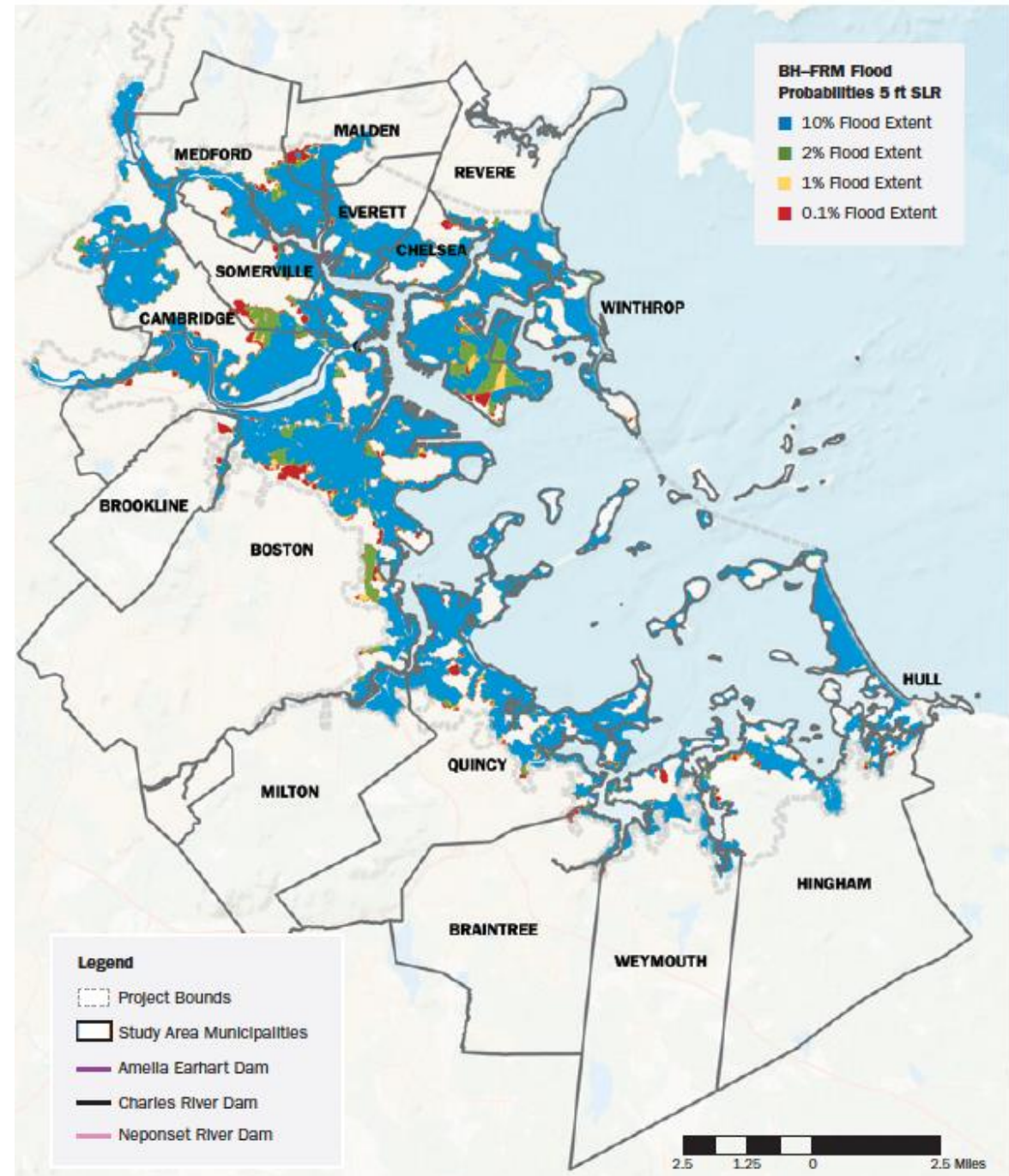
The Stone Living Lab



Boston Harbor Barrier—Probabilities of Flooding with 0 Feet SLR



Boston Harbor Barrier—Probabilities of Flooding with 5 Feet SLR



Adaptation of the Built Environment

- Accommodate
- Protect
- Retreat





TAKE A FRONT ROW SEAT AT CLIPPERSHIP WHARF

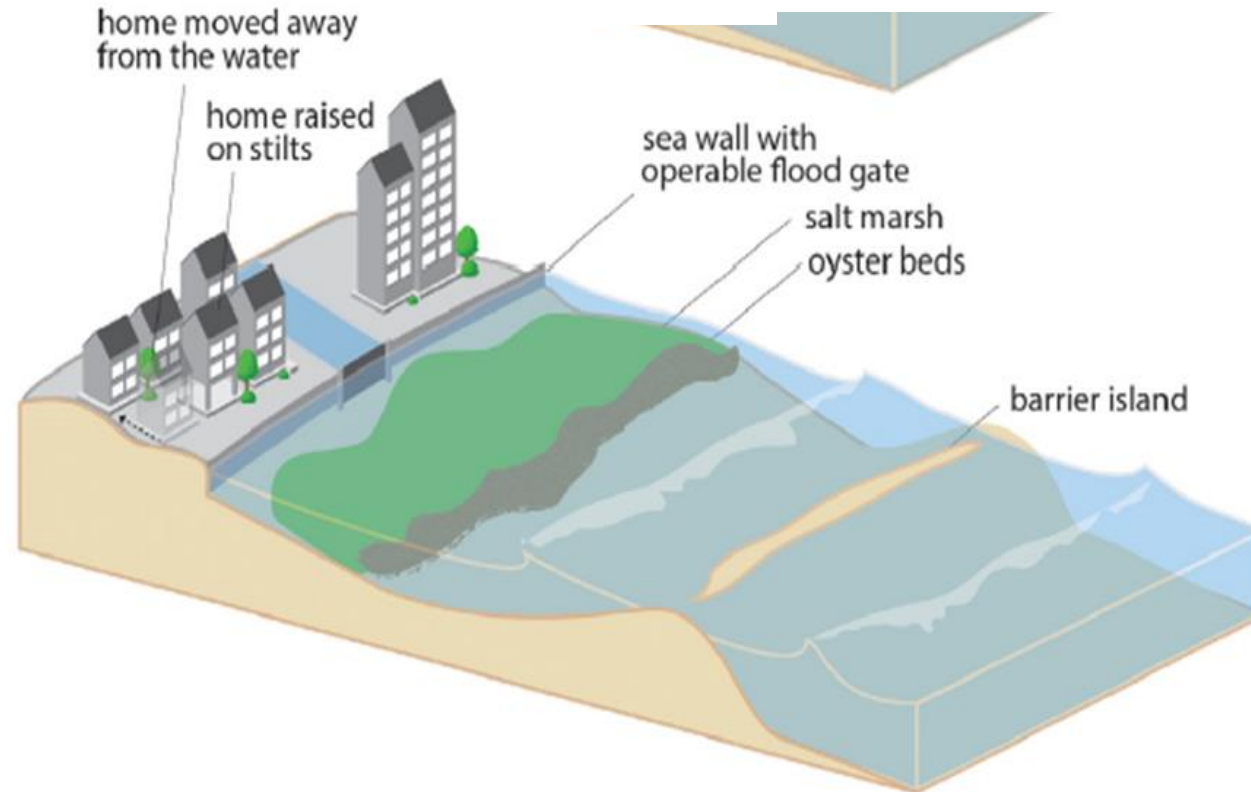
Clippership Wharf is at the heart of the reimagined waterfront of East Boston. It is a unique environment that becomes part of your everyday life. While the views never lose their luster, there is a lot more to do here than sightsee. Relax on the lawn, explore the water's edge, launch your kayak, or let your dog run and play. When you're feeling social, invite your friends over to grill up some steaks, take in an impromptu performance along the Harborwalk, or just gather around the fire pits and unwind. And when you want to get outside and breathe in the ocean air, take a walk, run or ride on the East Boston Greenway or Harborwalk. Experiences abound at Clippership Wharf means they're all right at your doorstep.

Climate Ready Boston – South Boston





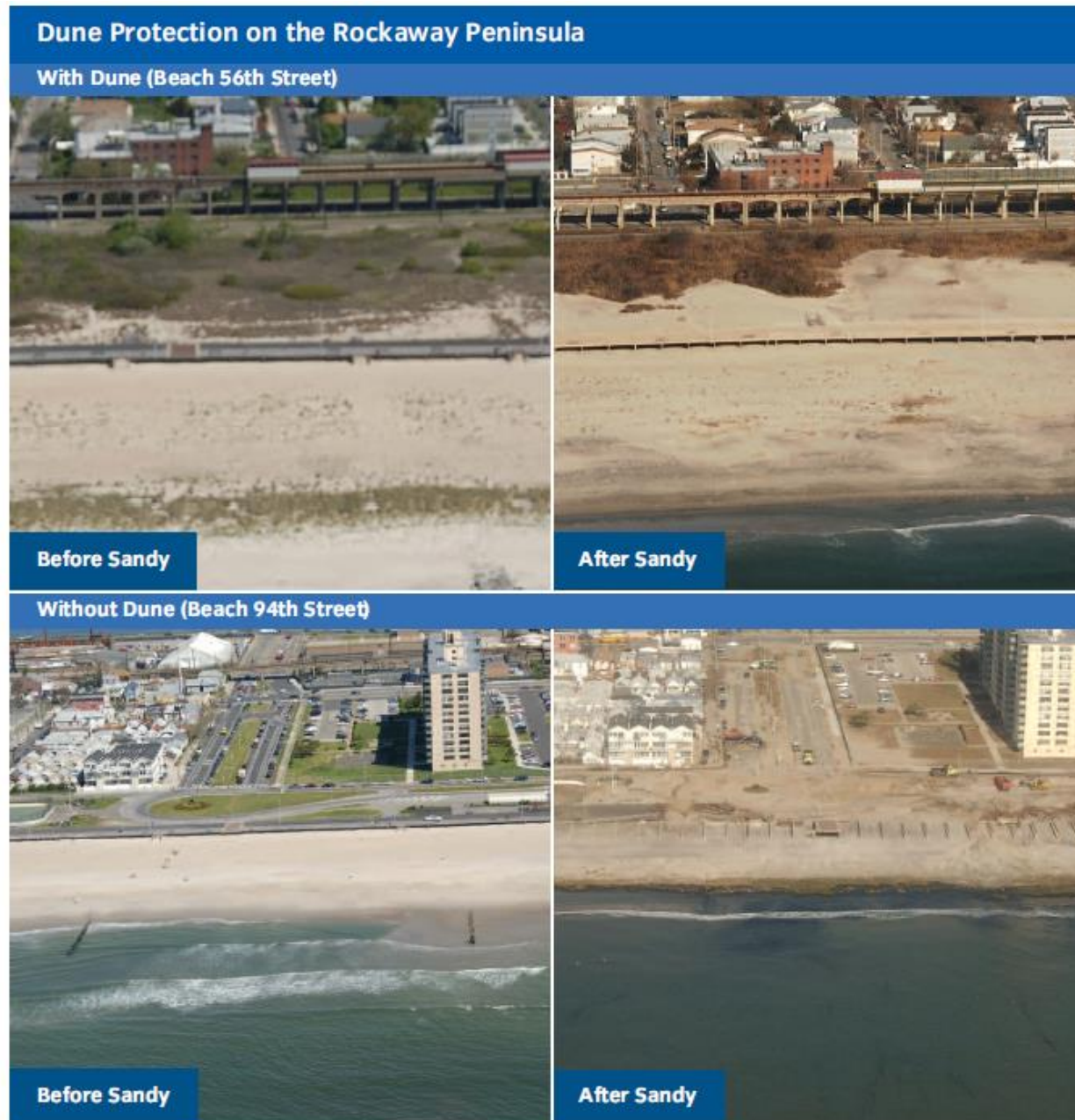
Example of Anthropogenic Tiered System



From Sutton-Grier et al (2015)



NBS and Coastal Protection



Credit: NOAA

A STRONGER, MORE RESILIENT NEW YORK



“However, there are presently no comprehensive Natural and Nature-Based Features guidelines available to support practitioners and/or stakeholders that are interested in this type of solution.”

Executive Summary, Project Scoping Document: Guidelines on the Use of Natural and Nature-Based Features for Sustainable Coastal and Fluvial Systems, ERDC, US Army Corps of Engineers, 10/18/2017
https://ewn.el.erdcdren.mil/nrbf/guidelines/NNBF-scoping_document-Final.pdf



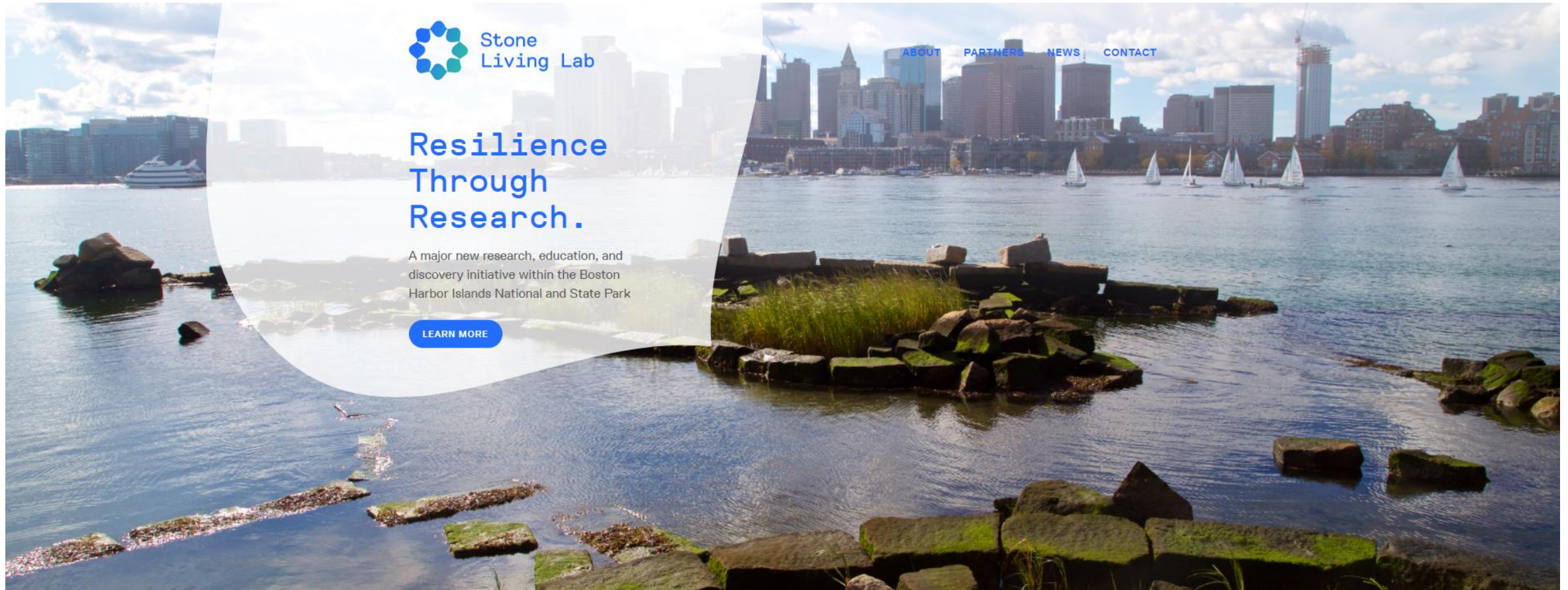


Regarding NBS, “Studies suggest that healthy coastal ecosystems provide important cost savings in terms of damages avoided, but more research would be useful to increase the level of confidence.”



While the co-benefits of NBS can reflect positive outcomes for communities, they are relatively unexplored and can sometimes result in unintended consequences (Magnan et al, 2016, Sarabi et al, 2020, and others).

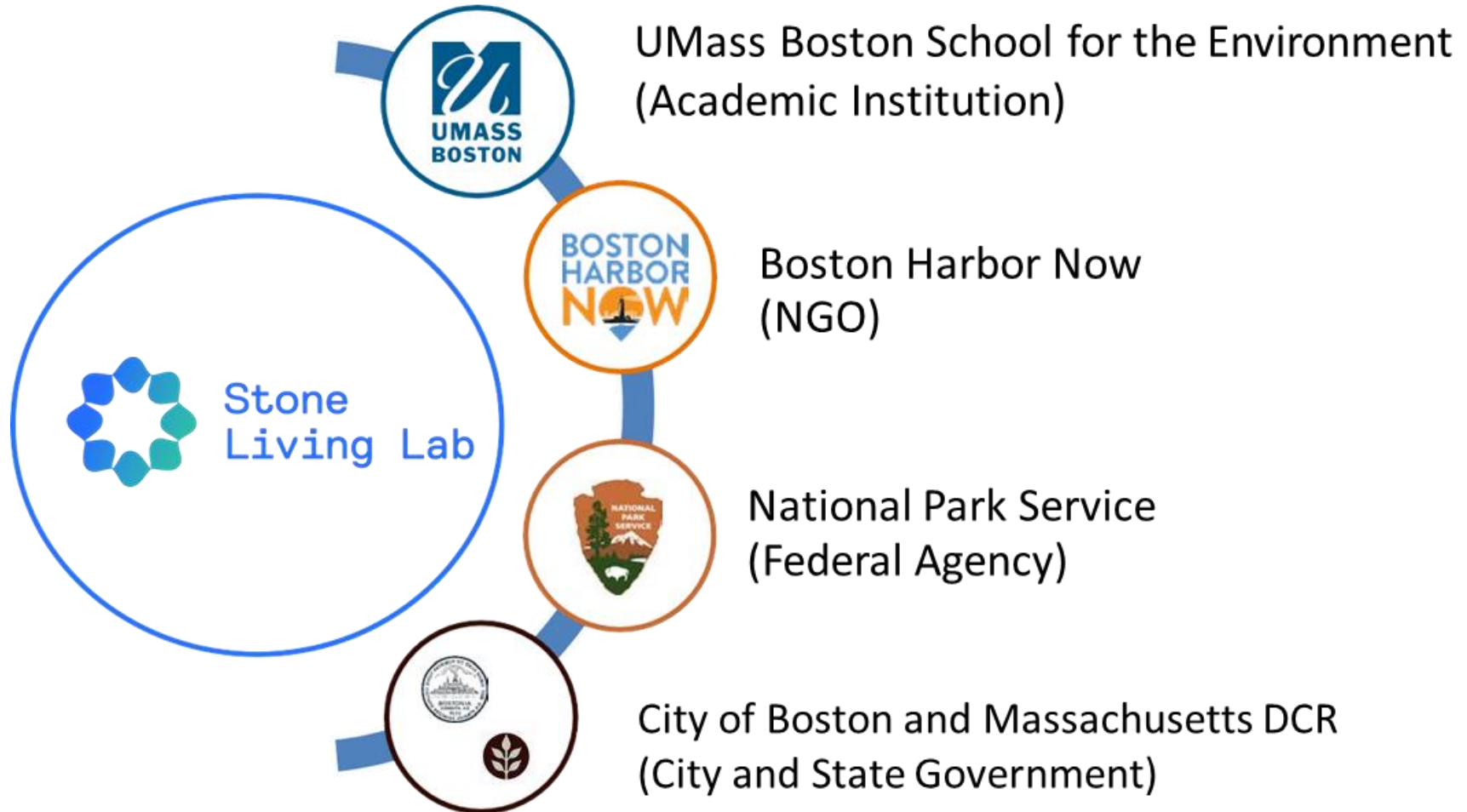
Stone Living Lab



Resilience Through Partnerships



JAMES M. & CATHLEEN D.
STONE FOUNDATION



Guiding Principles



Climate Preparedness

Promote creative and flexible solutions, equitable coastal adaptation, and social justice while preparing for, responding to, and educating about climate change.



Research

Conduct experiments in both basic and applied science and engineering to increase the resiliency of natural and developed coastal systems while maximizing co-benefits and promoting ecological restoration.



Education

Engage our communities in education and outreach programs that are equitable, promote innovation and environmental justice, and facilitate hands-on research activities inclusive to all.



Policy

Collaborate broadly to conduct and translate science, inform policy and planning, and implement the lessons learned from the Stone Living Lab.

Overview of Stone Living Lab



Peddocks Island



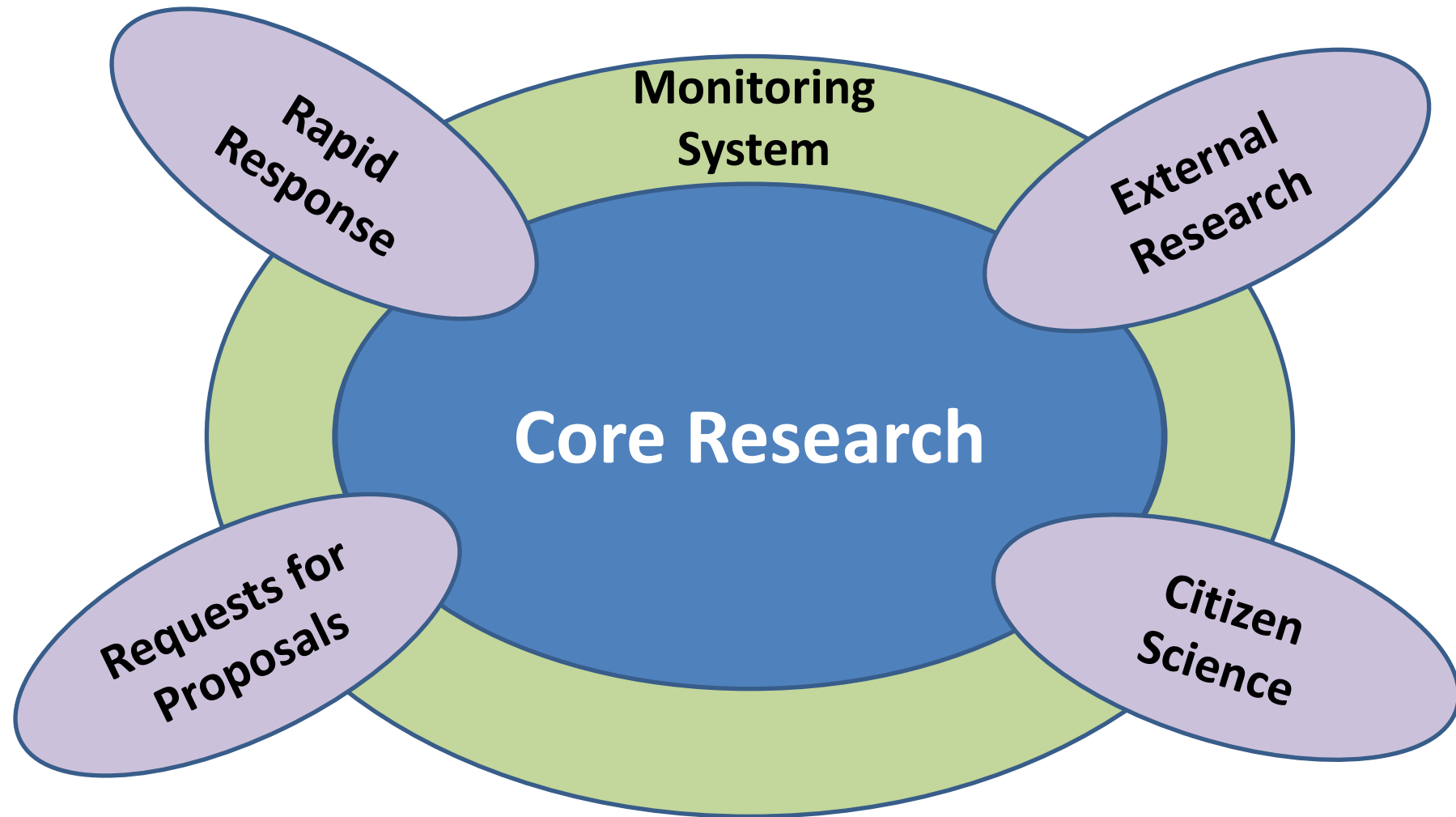
Boston Harbor Islands National and State Park



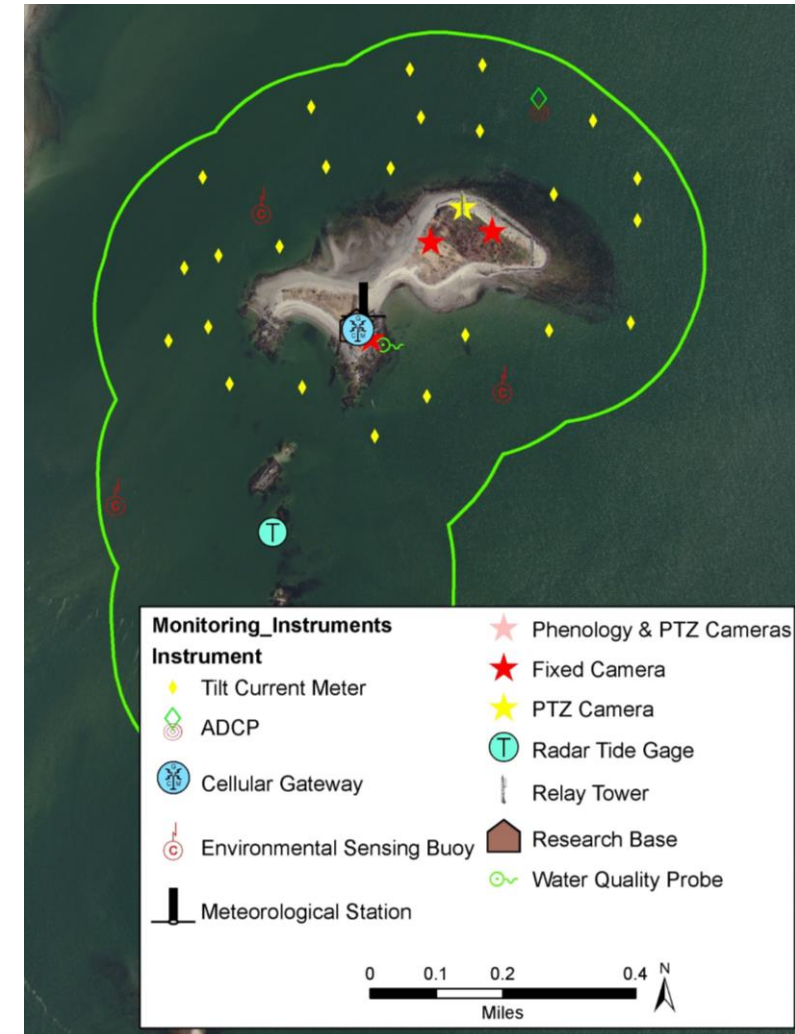
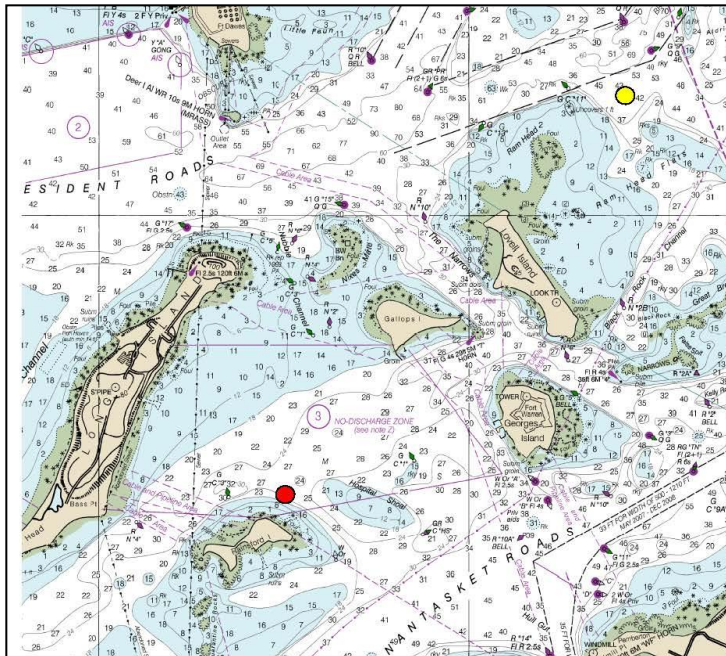
Rainsford Island



Research Infrastructure



Proposed Instrument Locations



Core Research: Years 2-5



Island Sedimentation, SLR,
and Coastal Resiliency



Terrestrial LiDAR Scanner (TLS)
monitoring of coastal erosion

Ecological Value of Dynamic
Revetments (Cobble Berm)

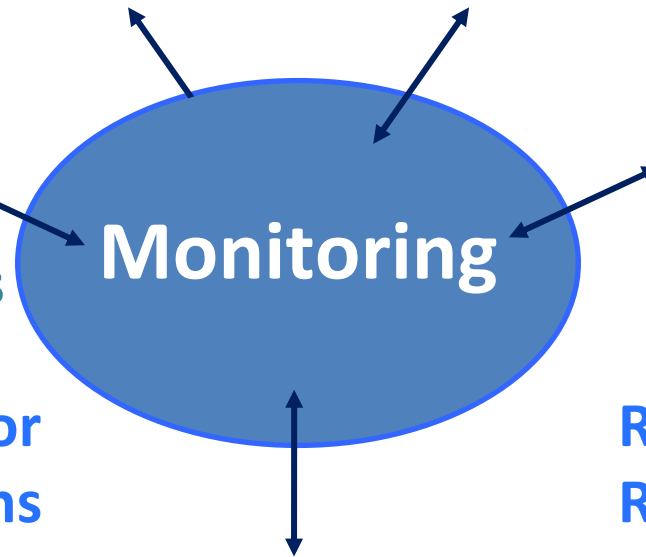
Coastal Protection Structures,
Biodiversity and Ecosystem Services

Monitoring of Existing NBS Projects

Developing Robust Policies for
Nature-Based Solutions

Regulatory Reform for
Resiliency Projects

Numerical modeling of proposed
and constructed projects at SLL



Public Education and Community Engagement

- Build a network of researchers and educators
- Co-create place-based science education programs
- Become a hub for community participation in authentic scientific studies (citizen science)
- Increase environmental and ocean literacy
- Provide ladders of opportunity and job training for Boston area youth



Advisory Board



Arcadis
Barr Foundation
Boston Planning and Development Agency (BPDA)
Boston Water and Sewer Commission
Cabot Corporation
City of Boston
City of Quincy
Clippership Wharf (Lendlease Development)
Conservation Law Foundation
Exec. Office of Energy & Environmental Affairs (EEA)
Friends of the Boston Harbor Islands
Grayscale Collaborative
Green Ribbon Commission
GreenRoots
Institute for New England Native American Studies,
UMB
Madison Park Development Corporation
Massachusetts Bays National Estuary Partnership
(MassBays)
Massachusetts Commission on Indian Affairs
Massachusetts Institute of Technology (MIT)
Massachusetts Water Resources Authority (MWRA)

Massport
McCormack Graduate School of Policy & Global
Studies, UMB
Metropolitan Area Planning Council (MAPC)
MGH Institute of Health Professions
Mystic River Watershed Association (MyRWA)
Neighborhood of Affordable Housing (NOAH)
Nipmuc Nation
San Francisco Estuary Institute
Save the Harbor/Save the Bay
Scape Studio (NYC)
Stoss Landscape Urbanism
Sustainable Solutions Lab, UMass Boston
The American City Coalition
The Boston Foundation
The Nature Conservancy
The Trustees of Reservations
Thompson Island Outward Bound Education Center
US Army Corps of Engineers (USACE)
Youth representatives (2)

Join Us !



- Join our mailing list
- Co-create place-based science education programs
- Co-design experiments
- Participate in Advisory Board
- More



www.stonelinglab.org