STORMWATER SOLUTIONS
FOR COASTAL COMMUNITIES

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Current Conditions & Trends

53% of undeveloped land in the state is currently unprotected.
Current SW obstacles for MA coastal zone:

• Physical and regulatory constraints
  – High water table levels
  – Flat terrain
  – Unique soil types
  – Highly altered drainage systems
  – More stringent coastal regulations

• Extreme event stressors
  – Hurricanes
  – Storm surge
  – Land subsidence
  – Sea level rise
Future (and current) risks

- Sea level rise
- Storm surge
- Annual precipitation
- Coastal-influenced groundwater elevation
- Precipitation extremes (design storm event precipitation depths)

Figure source: Karl et al. 2009; Walsh and Wuebbles 2014
ORIGINAL OBJECTIVES

Engaging with municipalities to provide technical assistance on stormwater management in the coastal zone with a focus on, effective and resilient technologies, available funding mechanisms, and permit requirements.

Developing the coastal communities component of the Stormwater Solutions website and associated materials to serve as a model program to support effective stormwater management at the local level.
RESULTS OF NEEDS ASSESSMENT:
Increased Awareness, Effectiveness, Efficiency

- Provide strategies for more bang for your buck
- Provide database of funding mechanisms and sources
- Provide standardized materials, resources and guidance for DPW, boards, and governing officials focused on stormwater impacts and solutions
- Provide low-cost, high-benefit structural and non-structural BMP recommendations and include local, on-the-ground examples
- **Audience:** municipal/utility staff; mayor/city council/select board; local boards; consultants
- **Format:** technical tools/training; case studies; factsheets; website; presentations
# PRODUCTS:

<table>
<thead>
<tr>
<th>FORMAT</th>
<th>PRODUCT</th>
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<tbody>
<tr>
<td><em>StoryMaps</em></td>
<td>Introduction to stormwater in MA coastal zone (incl. climate change impacts, coastal constraints, and stormwater management solutions)</td>
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<td><em>Factsheets</em></td>
<td>Low-cost, high-benefit strategies (incl. benefits of investing now, innovative funding strategies, integrated planning)</td>
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<td><em>Databases</em></td>
<td>Suitable available resources for local officials (incl. education and outreach materials)</td>
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<td><em>Technical Tools</em></td>
<td>Available funding sources</td>
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<td>Stormwater BMP selection tool</td>
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<td>Process and policy guidance document for local officials</td>
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[Stormwater Solutions: Coastal Communities Website]
STORMWATER BMP SELECTION TOOL
• **Costs** (e.g. land, construction, and maintenance)
• **Site Design** (e.g. local feasibility; appropriate land use)
• **Receiving Water Characteristics** (e.g. drains to sensitive water body, wetland, or endangered species habitat)
• **Treatment Suitability** (e.g. removes nutrients, bacteria; provides groundwater recharge)
• **Physical Feasibility** (e.g. soils infiltration rate; depth to high water table; maximum slope)
• **Community and Environmental Factors** (e.g. ease of maintenance; community acceptance; habitat quality)
• **Site Restrictions and Setbacks** (e.g. 100-year floodplain; water wells; septic systems)
• **Climate and Terrain Factors** (e.g. vulnerable to salt water intrusion, flooding and inundation, or rising sea levels)
THANK YOU

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