Request to Rhode Island Legislature:
Support for critical coastal hazard resilience and emergency management support tools

$350k in annual state funding will support tools that provide critical services for Rhode Island resilience planning and emergency management.

URI Point of Contact: Austin Becker, Dept. of Marine Affairs, abecker@uri.edu
URI Team: Marine Affairs (Austin Becker, Jon Nelson); Ocean Engineering (Reza Hashemi, Mehrshad Amini, Malcolm Spaulding (emeritus); Oceanography (Isaac Ginis); Coastal Resources Center (Eliza Berry); Environmental Data Center (Chuck LaBash, Greg Bonynge, Chris Damon, Aimee Mandeville); Government Relations (Lauren Burgess)

Three research-based decision support tools require ongoing funding to serve the needs of Rhode Island – 1) ***RI Coastal Hazards Analysis, Modeling and Prediction system (RI-CHAMP)***, 2) ***STORMTOOLS***, and 3) ***MyCoast Rhode Island*** were developed and implemented since 2014 in response to the expressed needs of Rhode Island's emergency managers, partner communities, state regulatory agencies, and military installations. These URI-led products play key roles in building capacity to address risks from present-day coastal storms, as well as increasing sea levels and storm intensity, to enhance RI's emergency management system, state and local resilience planning, coastal policy/permitting process, and community awareness and buy-in. With over $9.1M of primarily federal investment to date, these tools now face a critical funding gap. Without $350K in annual funding, RI-CHAMP will suspend operations on June 30th, 2025, STORMTOOLS will go offline in the coming months, and MyCoast community flood monitoring will become unavailable.

1) **RI-CHAMP** provides detailed advance alerts to RI Emergency Management Agency (RIEMA) and local EMAs on coastal flooding and wind impacts caused by hurricanes and nor'easters—giving RIEMA, other agencies, and our coastal communities critical time to prepare for storms. It also has proven to be effective as a planning and training tool for emergency managers, bringing more realistic storm scenarios into play that reflect today's extreme storm conditions.
2) **STORMTOOLS** generates probabilistic flood predictions for varying return period storms (e.g., 100-year storm) with and without sea level rise for all of Rhode Island's coastal waters. STORMTOOLS supports long-term flood mitigation planning across the state and is a foundation of Rhode Island Coastal Resources Management Council's (RI-CRMC) risk-based permitting system. Additional tools, used for advisory purposes include STORMTOOLS Design Elevation (SDE, similar to FEMA maps with sea level rise consideration), and Coastal Environmental Risk Index (CERI) for estimating building damage under various scenarios. The system is currently being expanded to inland areas of the state and to include 500 yr with sea level rise flooding maps to comply with the upgrades in the International Building Code (IBC) standards.

3) **MyCoast Rhode Island** is a portal to collect and analyze crowd-sources photos of flooding and erosion across the Ocean State, with increasing capacity to monitor inland flooding underway. Information collected is used to capture the impact of flood hazards today, and to illustrate possible future conditions with increased storm activity. Photos, linked to data about weather and tides, create reports that help stakeholders like government agencies, business owners, practitioners, and residents to understand changing flooding patterns, validate flood models, and make informed decisions. Funding is key to leveraging government and private sector support to implement outreach, application, and technical assistance using MyCoast data.

- - - Summary of Investments to Date, Needs, Lights Off Dates, and Users - - -

1) RI-CHAMP

RI-CHAMP investments 2014-present:
State: $0
Feds: $6.4M

RI-CHAMP Lights-off date: June 30th, 2025. Funding from DHS ends, with no option for continued funding, as the DHS Center of Excellence is in its final year. **This will leave RIEMA without real-time forecasts for the upcoming hurricane season**

RI-CHAMP – Rhode Island Users:

- RIEMA - RI-CHAMP implemented at the Emergency Operations Center for use in hurricane and Nor'Easter impact predictions and training exercises
- RIDOH –Custom dashboard and risk assessments developed for all RI Health Infrastructure in Rhode Island'sI coastal zone.
- RIDEM - Custom dashboard and risk assessments developed for all RI Wastewater Treatment facilities in the coastal zone.
- Providence EMA – End user for real time forecasts and use in functional exercises for the City.
- Municipalities of Portsmouth, Middletown, Newport, Bristol – identification and modeling of key assets at risk, and participation in Functional exercises.
- Navy Station Newport – Used RI-CHAMP in 2022 Military Installation Resilience Review

---

2) STORMTOOLS

STORMTOOLS Investment 2014-present:
State: $460k (including $36,250 in outstanding funds)
Feds: $2M

STORMTOOLS Lights Off Date: March 1, 2025. Committed funds of $36,250 to be paid by 30 November 2024 from CRMC have not come through. These funds are critical to maintain the system.

STORMTOOLS Rhode Island Users:

- CRMC (551 Coastal Hazards Analysis Users in past year)
  - Coastal permitting process (sea level rise, SDE, and CERI maps) via Coastal Hazard App
  - CRMC RI Shoreline Change Management Plan (http://www.crmc.ri.gov/samp_beach.html)
- RI Statewide Planning:
  - Resilient Rhody and assessment of bridges and roadways at risk from sea level rise and coastal flooding
  - Long Range Transportation plan (uses RIDOT Resilience Improvement Plan, see below)
  - Municipal Comprehensive Planning Guidance which uses STORMTOOLS to look forward to the future.
  - Resilient Route 114 project for 7 areas of vulnerability in Barrington/Warren/Bristol
- RI DEM
  - Assessment of Impact of climate change on operation and maintenance of wastewater treatment facilities, impact of flooding on above ground storage tanks on Fields Point and vicinity.
  - Upland STORMTOOLS development underway, intended to support RIDEM permitting.
- I-195 Commission:
  - STORMTOOLS Led them to increase the elevation of the recently constructed pedestrian bridge across the Providence River
- RI EMA
  - State flood mitigation plans and those of various coastal municipalities.
- RIDOT
  - *Resilience Improvement Plan* (2024), which used STORMTOOLS in its analysis of vulnerable roadways and other infrastructure.
- Other Users (10,734 in past year)
  - Over the past year, STORMTOOLS resources were routinely accessed by the RI community though the CRMC, BeachSAMP and RIGIS websites
  - Routinely used by RI Builders Association Home – RI Builders to provide guidance on flood risks to the building community.

---

3) MyCoast Rhode Island

Inability to provide match for potential grants to implement MyCoast: after March 2025.

MyCoast Rhode Island Investment to Date:

State Funding: $105K
Federal Funding: $20K
Private Funding: $150K

MyCoast Rhode Island Users:

- Extension and research at URI, RIC, and Brown
    - Use by research programs to validate storm models with actual flooding impacts
    - Outreach and engagement of community members, boards and commissions,
- RI DEM
    - Outreach for shoreline change at state beaches through CoastSnap photo cradles
- Municipalities (e.g. Bristol, Portsmouth, Newport)
    - Engagement of community members to understand the flooding issues, support neighborhood and municipal action for resilience.
- Olneyville, Providence
    - Capacity building of community members to increase awareness, advocacy, and action to address inland flooding.
    - Support for emergency managers to have real time data identifying floods.
    - Pilot effort underway to link real-time data to street flooding impacts, supporting Providence and RIDOT actions.