

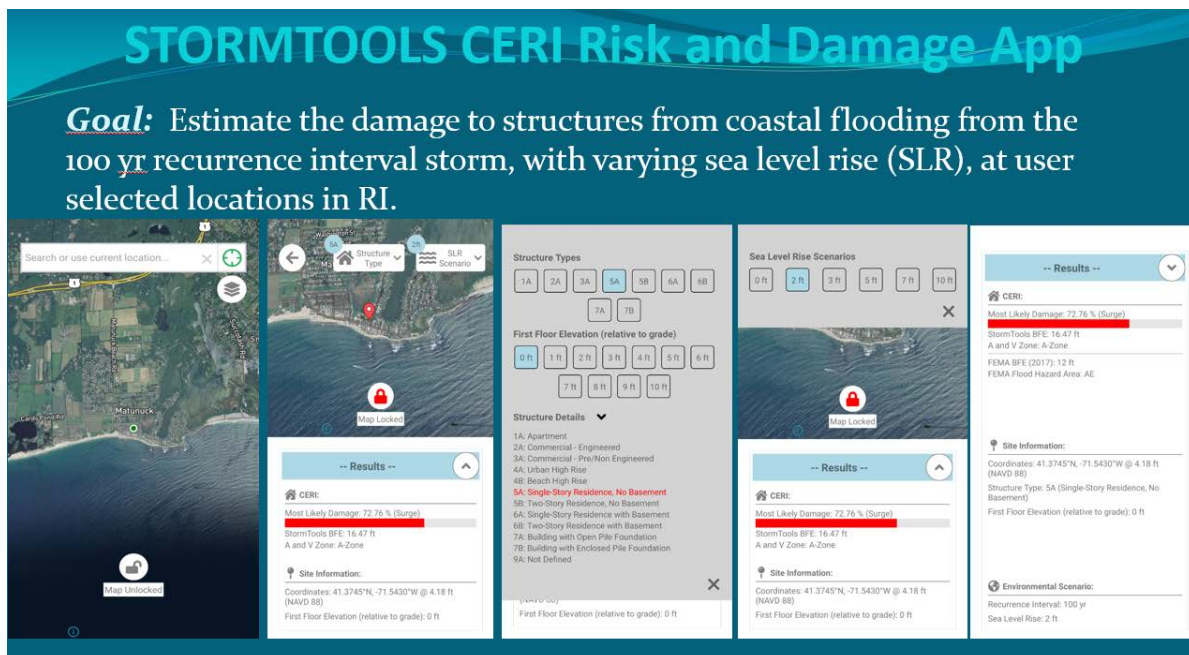
Instructions in use of STORMTOOLS Coastal Environmental Risk Index (CERI) Risk and Damage App

November 21, 2019

Download App from Apple or Google Play Store, search *StormTools* to find the App, available for iOS Apple and Android users.



GOAL: Estimate the damage to structures from coastal flooding from the 100 yr recurrence interval storm, with varying sea level rise (SLR), at user selected locations in RI.



INPUT:

Location: User selects location either by navigating on the map (satellite image) or using street address or some combination of the two.

Structure Type (based on US Army Corps characterizations in the North Atlantic Comprehensive Coastal Study, NACCS):

Type 1 Apartment building, with and without basement
Type 2 Commercial structure- engineered
Type 3 Commercial structure- pre/non engineered
Type: 5A Single story residence, no basement
Type: 5B Two story residence, no basement
Type: 6A Single story residence, with basement
Type: 6B Two story residence, with basement
Type: 7A Building with open pile foundation
Type: 7B Building with closed pile foundation

First floor elevation(FFE): 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10 ft (relative to local grade elevation)
Most Type 5 and 6 residential structures have FFEs of 2 to 3 ft, while most elevated structures; Type 7, have an FFE of 9 ft. (1 step = 7.5 in).

Sea level rise: 0, 2, 3, 5, 7, and 10 ft

Map unlock and lock: select location on map, lock to perform analysis, unlock to move to another location. When map is locked user can change FFE, structure type, sea level rise value and view results.

RESULTS

CERI

Most likely damage: 0 to 100% (damage source from wave or inundation, or combination of both)

STORMTOOLS BFE- ft relative to NAVD88

STORMTOOLS Zone, A or V:

FEMA BFE (2017): ft relative to NAVD88

FEMA Zone, A or V:

Site Information:

Coordinates of site selected: latitude/longitude @ grade elevation (referenced to NAVD88) at site

Structure Type: 1 to 7, See input list above

First Floor Elevation (relative to grade): value in feet from input, relative to grade

Environmental Scenario:

Recurrence interval: 100 yrs

Sea Level Rise: value in ft from input, relative to MSL

Acronyms

BFE- Base flood elevation (referenced to NAVD88)- inundation plus associated waves

FEMA- Flood Emergency Management Agency

FEMA Flood Hazard Zones V - storm surge, plus wave heights 3 ft or greater

FEMA Flood Hazard Zones A- storm surge, wave heights less than 3 ft

FFE- First Floor Elevation (can be referenced to either grade elevation or NAVD88; normally to grade)

MSL- Mean Sea Level

NAVD88- North Atlantic Vertical Datum 1988, vertical reference for mapping

SLR- Sea level rise

STORMTOOLS- RI flood mapping tools and system

Some notes:

1. If the address method is used to determine the location of a structure, it may not be the location of the structure, but the location of the access driveway. One needs to find the location of structure. Be aware that elevation grades can vary substantially around a structure, when in doubt check various locations around the structure. Note grade elevations are based on RI GIS Lidar data with spatial resolution of 1 m (3 ft) and vertical resolution of 15 cm (6 in).
2. Most residential structures in RI coastal communities are Types 5 and 6, with FFEs of 2 to 3 ft. The most common structure on pile supports are Type 7, with FFE of 9 ft. (If you are counting steps, 1 step is typically 7.5 in, so 3 steps is approximately 2 ft.).
3. For planning purposes, 3 ft SLR is projected for 2050 and 10 ft for 2100.

Access to information on STORMTOOLS CERI maps and the App is provided at

<http://www.beachsamp.org/stormtools/stormtools-coastal-environmental-risk-index-ceri/>

Access to STORMTOOLS Design Elevation and CERI maps is provided at

<http://www.beachsamp.org/stormtools-design-elevation-sde-maps/>.

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