

RI CRMC COASTAL HAZARD APPLICATION WORKSHEET

APPLICANT NAME:

PROJECT SITE ADDRESS:

STEP 1. PROJECT DESIGN LIFE

- A. Indicate FEMA FIRM base flood elevation (BFE) for the project location, available from FEMA, or the municipal building official. ft
- B. Using the [CRMC Shoreline Change maps](#), indicate the transect number closest to your site, and erosion rate listed for that transect. **Transect #:**
- C. How long do you want your project to last? Identify the expected design life for the project (CRMC recommends a **minimum of 30 years**) **Erosion Rate:** ft/yr
- D. Add the number of years you identified in 1C to the current year. (For example, if you are completing this form in the year 2020, and you want your project to last 30 years, your design life year will be 2050.) years
- E. **CHECK** beneath the sea level rise (SLR) projection that matches or comes closest to project design life year. **Design Life Year:**

Year	2020	2030	2040	2050	2060	2070	2080	2090	2100
SLR	1.05	1.67	2.33	3.25	4.20	5.35	6.69	8.14	9.61

Source: Sea Level Rise (SLR) Projections (Feb. 2017). NOAA High Curve, 83% Confidence Interval. Newport, RI Tide Gauge. All values are expressed in feet relative to NAVD88. <http://www.corpsclimate.us/ccaceslcurves.cfm>

NOTE: The STORMTOOLS sea level rise scenarios depict how high the water will be above the average height of the daily high tide over the 19-year period between 1983 and 2001. There have been between 4 and 5 inches of sea level rise in Rhode Island since then. The higher modeled water level accounts for the uncertainties in ice sheet and ocean dynamics.

STEP 2. SITE ASSESSMENT

- A. Open [RICRMC Coastal Hazard Mapping Tool](#). Following the tutorial along the left side of the screen, enter the project site address and turn on the sea level layer closest to the number you circled in 1E.
- B. **ENTER** the STORMTOOLS SLR map layer closest to the SLR value you checked in Step 1E above. If the value falls between the available STORMTOOLS SLR map layers, round off to the closest of these sea level rise (SLR) numbers: 1ft, 2ft, 3ft, 5ft, 7ft, 10ft, or 12ft ft
- C. Does the STORMTOOLS SLR map layer you circled above expose your project site to future tidal inundation? **CHECK YES or NO** YES
NO
- D. List any **roads or access routes** that are potentially inundated from SLR and storms. To do this, ZOOM OUT from your project location, change BASEMAP on the viewer to “street view” – see Step 2A.

STEP 3. STORMTOOLS DESIGN ELEVATION (SDE)

- A. Based on the project location, CHECK the SDE Viewer for your site, and open the corresponding tab in Mapping Tool:
South Coast SDE Viewer: Napatree to Pt. Judith **Narragansett Bay SDE Viewer: North and East of Pt. Judith**
- B. Follow the tutorial included along the left panels of the viewer to enter the address of your project site. Select the tab across the top that corresponds to the sea level rise projection you identified in STEP 1E.
- C. Click on the map at project site to identify **STORMTOOLS Design Elevation (SDE)** from the pop up box. **Enter the SDE value:** ft

***Please be advised that CRMC staff may also review the implications of sea level rise in combination with nuisance storm flooding and discuss these potential project concerns with the applicant. Nuisance flooding impacts may be viewed in STORMTOOLS [here](#).*

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STEP 4. SHORELINE CHANGE

A. Setbacks are required per RI Coastal Resources Management Program (RICRMP), Section 1.1.9. Indicate the annual shoreline change rate value from STEP 1B, and the design life selected in STEP 1C above. Enter values in 4C below.

B. **CHECK** below the Projected Erosion Rate that corresponds to the design life you identified above.

Year	2050	2060	2070	2080	2090	2100
Projected Future Erosion Multiplier	1.34	1.45	1.57	1.70	1.84	2.00

Source: Projected Shoreline Change Rate multipliers. (Oakley et al., 2016)

C. COMPLETE EROSION SETBACK CALCULATION:

Historic shoreline change rate, STEP 1B	X	Design Life, STEP 1C	X	=	Projected Future Erosion Multiplier, STEP 4B	=	Erosion Setback (ft) 1B x 1C x 4B
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NOTE: A minimum setback of 50-feet is required, but a greater setback may be necessary and/or desirable based on this analysis.

STEP 5. CERI & OTHER SITE CONSIDERATIONS

A. If you live in a community where a Coastal Environmental Risk Index (CERI) has been completed (Barrington, Bristol, Charlestown, Narragansett, South Kingstown, Warren, Warwick, Westerly), CHECK the level of projected damage to your location, as indicated on the map that corresponds to the design life identified in STEP 1.

CERI Level: Moderate High Severe Extreme Inundated by 2100 Not applicable

B. Consider and discuss with your design consultant other forces or factors that might impact the development, such as coastal habitats, shoreline features, public access, wastewater, storm water, depth to water table/groundwater dynamics, saltwater intrusion, or other issues not listed above. In addition, pressure from rising sea levels will result in rising subsurface groundwater levels ultimately effecting wells and septic systems.

STEP 6. LARGE PROJECTS

This step is for Large Projects and Subdivisions only, six (6) or more units, as defined by RI CRMP Section 1.1.6.I(1)(f). This step may be skipped for other projects.

A. Use the Sea Level Affecting Marshes Model (SLAMM) Maps to assess potential impacts to large projects and subdivisions from salt marsh migration resulting from projected sea level rise. CRMC SLAMM maps can be accessed [here](#).

The CRMC recommends using the 5-foot SLR projection within SLAMM to assess future potential project impacts on migrating marshes. Does the SLAMM map that corresponds to the design life you identified in STEP 1 expose your project site to future salt marsh migration? **CHECK YES or NO**

YES NO

STEP 7: DESIGN EVALUATION

A. Using Chapter 7 of the RI Shoreline Change SAMP as a guide, investigate mitigation options for the exposure identified above and include that in the final application.

This fully completed Coastal Hazard Application Guidance worksheet must accompany the application. If you are a design or engineering professional, please print and sign here that you have discussed the findings of this worksheet with the Owner.

DESIGN/ENGINEER SIGNATURE: _____ **DATE:** _____

OWNER'S SIGNATURE: _____ **DATE:** _____

Please refer to the [RI Shoreline Change Special Area Management Plan](#), Chapter 5 for background.