

## 8. How do I determine if the buildings on the property meet the current design and construction standards for the flood zone?

Many homes along the coast were built before the institution of the National Flood Insurance Program (NFIP), and therefore prior to a community's first floodplain management code, ordinance, or standard. Since the adoption of the earliest flood insurance rate maps (FIRMs) in the mid-1970s, provisions designed to increase the flood-resistance of coastal structures have been strengthened within international, federal, and state building codes to meet the requirements of the NFIP.

In addition to the setbacks discussed in relation to coastal features and buffer zones (see Question 1: *What kinds of coastal features are on or near the property, and what kinds of setbacks or regulations apply?*), buildings in the coastal zone are required to meet certain standards in regards to design, construction, and siting. For example, in accordance with the NFIP, [Rhode Island State Building Code](#)<sup>45</sup> requires that new and substantially improved structures in flood-prone areas be elevated at least one foot above the base flood elevation (BFE) for the area<sup>46</sup>, and that all building components below BFE be constructed with flood-resistant materials.

**Why it matters:** If there is an older building on a coastal property, the structure may be more prone to damage from coastal hazards as a result of being built to less stringent codes.

To begin to assess the property, consult the list of questions on the following page. For a more detailed assessment, owners should engage an engineer or other building professional to evaluate the property to determine structural vulnerabilities.

Additionally, owners and potential buyers of coastal buildings can contact the municipality's building official to get information on any permits that were required or issued to the previous owners documenting any repairs or renovations. These records can indicate how the structures were built, if they were ever updated, and measures were taken to increase structural resiliency.

**Find out more:** For more information about building standards in the floodplain, please see Section 300.3, Part G - *Guidelines for Construction in Flood Hazard Zones* in the [CRMC regulations](#), and the resources listed in Question 10 of this document, *Can I make the existing building more resilient? How do I build a new resilient structure?* For information about flood-resistant building features, refer to the [Floodplain Management in Rhode Island: 2007 Quick Guide](#)<sup>47</sup>.

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<sup>45</sup> Rhode Island State Building Code documents: [sos.ri.gov/library/buildingcodes/](https://sos.ri.gov/library/buildingcodes/)

<sup>46</sup> To determine if a property is within a flood zone visit the RIEMA floodplain mapping page at [www.riema.ri.gov/prevention/floods/flood\\_mapping.php](https://www.riema.ri.gov/prevention/floods/flood_mapping.php). There, you can find the base flood elevation (BFE) for the area if it is available.

<sup>47</sup> Floodplain Management Guide [www.riema.ri.gov/prevention/floods/floods\\_documents/RIQG\\_DesktopPrint.pdf](https://www.riema.ri.gov/prevention/floods/floods_documents/RIQG_DesktopPrint.pdf)

## Assessing an existing building for risk- initial questions to ask, and what to look for:

If you own or are planning to buy a coastal structure that was built prior to the municipality's adoption and enforcement of floodplain ordinances, the structure may be more vulnerable to coastal hazards than newer structures. To begin a preliminary assessment of the property and structure, consult permitting documents at the Building Official's office or utilize the resources and maps cited in this document and obtain the answers to the following questions.

For a more complete analysis of risk and susceptibilities to coastal hazards, engage an engineer or other building professional to evaluate the property and structure.

- Does the structure meet CRMC's current setback requirements for the area? If not, in the event that the structure requires substantial repairs or renovations, the structure will have to be relocated to meet CRMC siting regulations.
- Is the structure in a flood zone according to FEMA FIRMs? If so, what is the BFE for the area?
- Is the lowest floor (the lowest floor of the lowest enclosed area, including the basement) of the building above the base flood elevation, or BFE, for the area? If not, the lowest level may flood in a storm event.
- If the structure is elevated, assess the quality of the piles and foundation. Are the pilings deep enough and adequately braced? Does the foundation allow the unobstructed flow of floodwaters?
- Is the structure on a concrete slab, and if so, how does its elevation compare to the BFE? Is the foundation vulnerable to erosion or flooding?
- Is the structure located on or near an eroding coastal feature? For example, if the structure is on a bluff, though it may be out of the floodplain, coastal erosion could undermine the bluff resulting in eventual collapse.
- Are the materials used in the foundation vulnerable to water-damage? Current provisions call for structural elements below the BFE to be constructed out of flood-resistant materials.
- Have storm resistance measures been included in the design and construction of the building? Resistance measures may include flood vents below the BFE, hurricane clips, hurricane shutters, other protective measures for windows, and sealing the roof to prevent leaks during storm events.
- Are the structure's mechanical and utility equipment housed above the BFE? Is the equipment on the water-ward (more vulnerable) or the landward (less vulnerable) side of the building?
- If present, are breakaway walls and similar structures unobstructed? Are any elements tethered to breakaway walls? If breakaway walls are obstructed or have tethered elements, they will not function properly in a flood event, and may cause more damage.
- Are external elements such as the fuel tank sufficiently tied down or protected?
- Are there nearby elements or objects that could become storm-driven debris? Debris may damage a structure or property during flooding or high winds.
- What are the nearby grade elevations, and how do they compare to the property's elevations? Understanding neighboring topography may help you identify which areas of the property are more susceptible to flooding.
- Is the structure close to other coastal buildings? If so, are these buildings elevated or at ground-level? If nearby structures are swept from their foundations during storm events, the bulky debris can cause significant damage to even the most well constructed coastal building.