

**Town of Barnstable  
Conservation Commission**  
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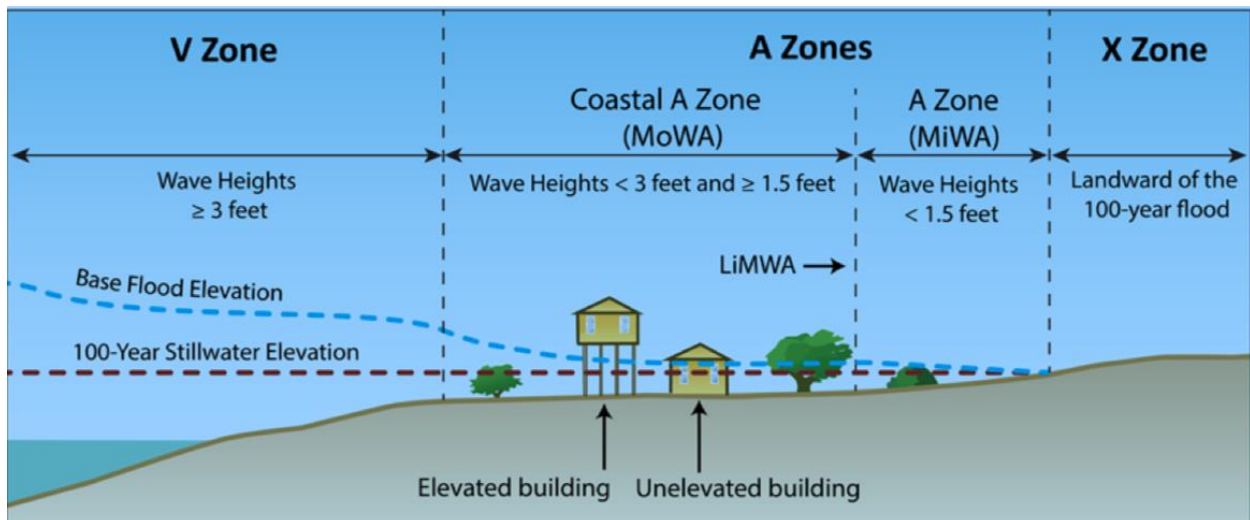
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**Guidelines for Activities in Land Subject to Coastal Storm Flowage (LSCSF)  
Velocity (V) Zones and Coastal A Zones Only**

**1. Definitions:**

- A. LSCSF (otherwise commonly known as the coastal flood zone) means land subject to any inundation caused by coastal storms up to and including that caused by the 100-year storm; i.e., a storm having a 1% chance of being equaled or exceeded in any given year. The seaward limit of the LSCSF is defined as mean low water.
- B. Special Flood Hazard Area means the area of land in the flood plain that is subject to a 1% chance of flooding in any given year as determined by the latest effective Federal Emergency Management Agency (FEMA) Flood Insurance Study or Rate Map.
- C. LSCSF consists of the FEMA V and A Zones:
  - 1. The **V Zone** is the area of a 100-year coastal flood with: velocity waves that have a height of 3 feet or greater, and a runup depth of 3 feet or greater.
  - 2. The A Zone is separated by the Limit of Moderate Wave Action [LiMWA] into the **Coastal A Zone** with wave heights between 1.5 feet and 3 feet and the **A Zone**.
  - 3. The **A Zone** with wave heights less than 1.5 feet and landward of the LiMWA is **not** subject to these guidelines.



Source: FEMA/MassDEP/MCZM

## **2. V Zone and Coastal A Zone Guidelines:**

### **A. Any proposed activity should not:**

1. Adversely impact the ability of the V Zone and Coastal A Zone to absorb or dampen wave impacts by reducing native vegetation and pervious areas.
2. Reduce the ability of the V Zone and Coastal A Zone to buffer more inland areas from flooding and wave damage.
3. Displace or divert flood waters to other areas by building coastal engineering structures such as retaining walls, permanent earthen berms, bulkheads, and revetments; except as allowed by state law for parcels with residential buildings constructed prior to August 10, 1978.
4. Cause or create the likelihood of damage by debris to other structures on land within the flood zone.
5. Cause ground or surface pollution triggered by coastal storm flowage.
6. Negate best management practices implemented for uses already permitted under Commission regulations such as Ch. 703 private docks & piers and Ch. 704 activity in the 100 ft. buffer zone.
7. Adversely impact areas that could be suitable for the inland migration of salt marshes as sea levels continue to rise.

### **B. These guidelines should not be construed to preclude the following activities, any of which may be permitted in the V Zone or Coastal A Zone at the Commission's discretion:**

1. Sacrificial sand dunes that allow for the littoral drift of sediment along the shore and other soft bio-engineering solutions for lessening coastal erosion from storm events.
2. Access paths and elevated boardwalks.
3. Maintenance activities such as vista pruning; invasive species control; repair/replacement of subsurface septic disposal systems; removal of underground fuel tanks or 21e cleanup.
4. Projects undertaken by a governmental agency that can be demonstrated to provide an overriding public benefit such as the area-wide improvement of water quality or the reduction of ground or surface water pollution.
5. The construction of water dependent facilities as defined in Ch. 704-2(F).
6. The building or rebuilding of residential living space provided that it is constructed above mean flood elevation, allowing for flood waters to flow unimpeded below; and subject to the state building code as enforced by the Building Commissioner.

### **C. These guidelines notwithstanding, the Conservation Commission will consider any and all proposals for LSCSF V Zones and Coastal A Zones on a site-specific basis, disposing of each according to its merit and to the degree that the preponderance of evidence shall show that the statutory interests have been preserved & protected, and are consistent with Commission regulations.**

## **3. Appendix:**

### **Definitions of FEMA Flood Zone Designations**

Flood zones are geographic areas that the FEMA has defined according to varying levels of flood risk. These zones are depicted on a community's Flood Insurance Rate Map (FIRM) or Flood Hazard Boundary Map. Each zone reflects the severity or type of flooding in the area.

### **Moderate to Low Risk Areas**

In communities that participate in the NFIP, flood insurance is available to all property owners and renters in these zones:

<b>ZONE DESCRIPTION</b>
<b>B and X (shaded)</b> Area of moderate flood hazard, usually the area between the limits of the 100- year and 500-year floods. B Zones are also used to designate base floodplains of lesser hazards, such as areas protected by levees from 100-year flood, or shallow flooding areas with average depths of less than one foot or drainage areas less than 1 square mile.
<b>C and X (unshaded)</b> Area of minimal flood hazard, usually depicted on FIRMs as above the 500-year flood level. Zone C may have ponding and local drainage problems that don't warrant a detailed study or designation as base floodplain. Zone X is the area determined to be outside the 500-year flood and protected by levee from 100- year flood.

**High Risk Areas** In communities that participate in the NFIP, mandatory flood insurance purchase requirements apply to all of these zones:

<b>ZONE DESCRIPTION</b>
<b>A</b> Areas with a 1% annual chance of flooding and a 26% chance of flooding over the life of a 30-year mortgage. Because detailed analyses are not performed for such areas; no depths or base flood elevations are shown within these zones.
<b>AE</b> The base floodplain where base flood elevations are provided. AE Zones are now used on new format FIRMs instead of A1-A30 Zones.
<b>A1-30</b> These are known as numbered A Zones (e.g., A7 or A14). This is the base floodplain where the FIRM shows a BFE (old format).
<b>AH</b> Areas with a 1% annual chance of shallow flooding, usually in the form of a pond, with an average depth ranging from 1 to 3 feet. These areas have a 26% chance of flooding over the life of a 30-year mortgage. Base flood elevations derived from detailed analyses are shown at selected intervals within these zones.
<b>AO</b> River or stream flood hazard areas, and areas with a 1% or greater chance of shallow flooding each year, usually in the form of sheet flow, with an average depth ranging from 1 to 3 feet. These areas have a 26% chance of flooding over the life of a 30-year mortgage. Average flood depths derived from detailed analyses are shown within these zones.
<b>AR</b> Areas with a temporarily increased flood risk due to the building or restoration of a flood control system (such as a levee or a dam). Mandatory flood insurance purchase requirements will apply, but rates will not exceed the rates for unnumbered A zones if the structure is built or restored in compliance with Zone AR floodplain management regulations.
<b>A99</b> Areas with a 1% annual chance of flooding that will be protected by a Federal flood control system where construction has reached specified legal requirements. No depths or base flood elevations are shown within these zones.

### High Risk Coastal Areas

In communities that participate in the NFIP, mandatory flood insurance purchase requirements apply to all of these zones.

**ZONE DESCRIPTION**

**V** Coastal areas with a 1% or greater chance of flooding and an additional hazard associated with storm waves. These areas have a 26% chance of flooding over the life of a 30-year mortgage. No base flood elevations are shown within these zones.

**VE, V1 - 30** Coastal areas with a 1% or greater chance of flooding and an additional hazard associated with storm waves. These areas have a 26% chance of flooding over the life of a 30-year mortgage. Base flood elevations derived from detailed analyses are shown at selected intervals within these zones.

**Undetermined Risk Areas**

**ZONE DESCRIPTION**

**D** Areas with possible but undetermined flood hazards. No flood hazard analysis has been conducted. Flood insurance rates are commensurate with the uncertainty of the flood risk.

From FEMA Map Service Center:

<http://msc.fema.gov/webapp/wcs/stores/servlet/info?storeId=10001&catalogId=10001&langId=-1&content=floodZones&title=FEMA%20Flood%20Zone%20Designations>