

City of Charleston, South Carolina

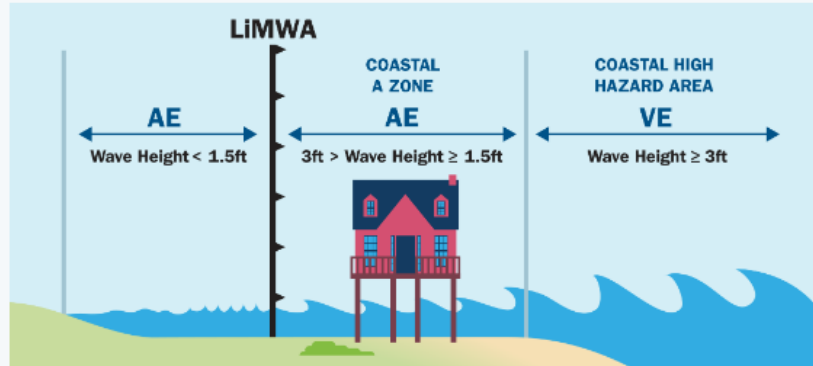
Building Construction within Limits of Moderate Wave Action (LiMWA) a.k.a. Coastal A Zone

As of January 1, 2023 the City of Charleston enforces Coastal A Zone building flood design & construction requirements for all new buildings and structures and substantial improvements (SI) to existing buildings and structures based on 2021 South Carolina Building Code (SCBC) §1612 and 2021 South Carolina Residential Code §R322. The 2021 SCBC became effective statewide January 1, 2023.

Coastal A Zone is defined by the Limit of Moderate Wave Action (LiMWA) which is an informational line as designated on FEMA's Flood Insurance Rate Maps (FIRM) where expected wave heights are between 1.5 and 3 feet during a Base Flood Event.

Limit of Moderate Wave Action (LiMWA)

Flood maps in coastal areas may include a line called the Limit of Moderate Wave Action (LiMWA). The LiMWA marks the inland limit of the Coastal A Zone— the part of the coastal SFHA referenced by building codes and standards where wave heights can be between 1.5 and 3 feet during a base flood event. Past events have shown that waves as small as 1.5 feet can cause foundation failure and structural damage to buildings.



Due to the higher risk of damage from waves to homes and other structures in the Coastal A Zone, FEMA encourages the practice of building to V Zone standards within this area. Many local building codes require that buildings in the Coastal A Zone be built to V Zone standards. However, the LiMWA has no significance for NFIP flood insurance premiums.

Source: <https://www.fema.gov/flood-maps/coastal/insurance-rate-maps>

Coastal A Zone Building Requirements

All new buildings and structures and existing buildings and structures undergoing Substantial Improvement (SI) within the Coastal A Zone are required to comply with all the following high-hazard flood area requirements:

Design Flood Elevation (DFE):

- New Construction: the Design Flood Elevation (DFE) is equal to the Base Flood Elevation (BFE) plus 2ft Freeboard. (City Code of Ordinance §27-117)
- Existing Buildings and Structures undergoing Substantial Improvement:
 - Residential (1 & 2 family dwellings, 3 stories or less) - DFE is equal to BFE plus 1ft Freeboard. (City Code of Ordinance §27-117)
 - All Other Buildings and Structures - DFE is equal to BFE plus 2ft Freeboard. (City Code of Ordinance §27-117)

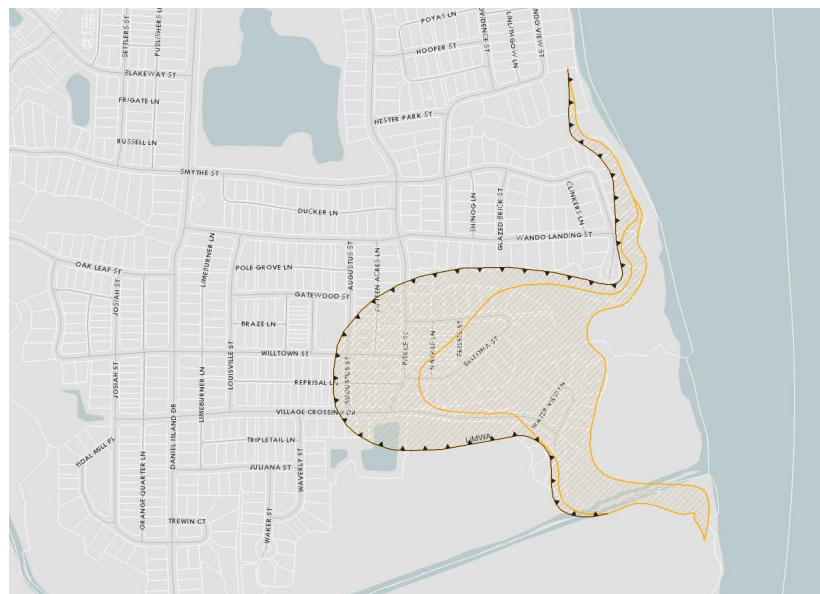
High-hazard Area Building Requirements:

- Building spaces/areas below DFE can only be used for storage, vehicle parking, and building access.
- Buildings shall be elevated on pile, post, pier, or column foundations.
- Buildings shall be adequately anchored to the foundation to resist flotation, scour, collapse and lateral movement due to the effects of wind and flood loads acting simultaneously on all building components.
- Structural fill to support the building is prohibited.
- The bottom of the building's lowest horizontal structural member at or above DFE, rather than the top of the floor for A Zones.
- Building spaces/areas below DFE shall be built with flood-resistant materials and free of obstructions. If it is enclosed, the enclosure(s) shall be made of lightweight wood lattice, insect screening, or breakaway walls. (refer to *FEMA NFIP Technical Bulletins 2 & 5*)
- All enclosures below BFE require flood openings, including breakaway walls.
- Dry floodproofing using flood panels is not permitted which constitute an obstruction.
- The building design and method of construction shall be signed and sealed by a South Carolina design professional.
- *V-zone Design and Breakaway Wall* (if applicable) pre-construction and as-built certificates required, shall be signed and sealed by South Carolina design professional.
- *Building Under Construction and Finished Construction Elevation Certificates* are required, shall be signed and sealed by South Carolina land surveyor.
- Building equipment shall be elevated to DFE or designed to withstand flood loads and can not be installed/connected to breakaway walls.
- Other site related obstructions, including pools and landscaping fill, shall meet free of obstruction requirements or otherwise be certificated, by a South Carolina design professional, not to cause flow diversion, wave runup and reflection. (refer to *FEMA NFIP Technical Bulletin 5*)

Coastal A Zone and LiMWA Map Examples



FEMA Flood Map
LiMWA Indicated by Black Line with Arrows



City Public GIS Mapnet
LiMWA Indicated by Black Line with Arrows
Coastal A Zone Indicated by Orange Hatching