FEMA

Limit of Moderate Wave Action

Identifying Inland Coastal Flood Risk

The Federal Emergency Management Agency (FEMA) is undertaking the most comprehensive analysis of Region III's coastal flood hazards ever performed. By integrating the latest topographic data sets with state-of-the art storm modeling techniques, FEMA is providing citizens and local officials along the mid-Atlantic coastal counties and communities of Virginia, Maryland, Pennsylvania and Delaware with the most up-to-date flood hazard information ever. This new information replaces maps and studies that are based on data and modeling technology from as far back as the 1970's.

These updated flood hazard maps (known as Flood Insurance Rate Maps, or FIRMs) and studies will allow communities and property owners to make more informed decisions about reducing their coastal flood risk. To help communities and individuals further understand their coastal flood risk, a new informational layer - the **Limit of Moderate Wave Action (LiMWA)** - will now be depicted on the FIRMs.

Background

The National Flood Insurance Program (NFIP) depicts coastal flood hazards in two different zones on its FIRMs:

- Zone VE, where the delineated flood hazard includes wave heights **equal to or greater than** three feet
- Zone AE, where the delineated flood hazard includes wave heights **less than** three feet

Post-storm field visits and laboratory tests have confirmed that wave heights as small as 1.5 feet can cause significant damage to structures when constructed without consideration to the coastal hazards. Additional flood hazards associated with coastal waves include floating debris, high velocity flow, erosion, and scour which can cause damage to Zone AE-type construction in these coastal areas.

To help community officials and property owners recognize this increased potential for damage due to wave action in the AE zone, FEMA issued guidance in December 2008 on identifying and mapping the 1.5-foot wave height line, referred to as the **Limit of Moderate Wave Action (LiMWA).** The LiMWA alerts property owners on the inland side of the line that although their property is in a Zone AE area, their property may also be affected by waves 1.5 feet or higher. Consequently, it is important to be aware of the area between this inland limit and the Zone VE boundary as it still poses a high risk, though not as high of a risk as Zone VE (see Figure 1).

LiMWA Quick Facts

- Wave heights of 1.5 feet or higher can cause significant damage to structures they come in contact with.
- A Limit of Moderate Wave Action (LiMWA) line identifying the 1.5-foot wave height will be shown on the FIRMs.
- Communities adopting Zone VE standards and referencing the LiMWA may receive CRS credits, which could lower insurance premiums for residents and business owners.
- For additional background information on LiMWA, read FEMA Procedure Memo 50 at www.fema.gov/library/viewRecord.do?id=3481.

Region III Coastal Study Is:

- A shared effort among FEMA, the US Army Corps of Engineers, and mapping partners, along with the Region's coastal counties and communities.
- Based on new state-of-the-art storm surge analysis along the Delaware-Maryland-Virginia Eastern Shore of the Atlantic Ocean, including all bays, tidal tributaries and waterways connected to these systems.
- Incorporating the devasting effects of waves as the surge moves inland. This is merged with the latest topography data to create the different flood hazard zone boundaries and Base Flood Elevation.
- Including, for the first time, the Limit of Moderate Wave Action (LiMWA).

Visit www.R3Coastal.com for more details.

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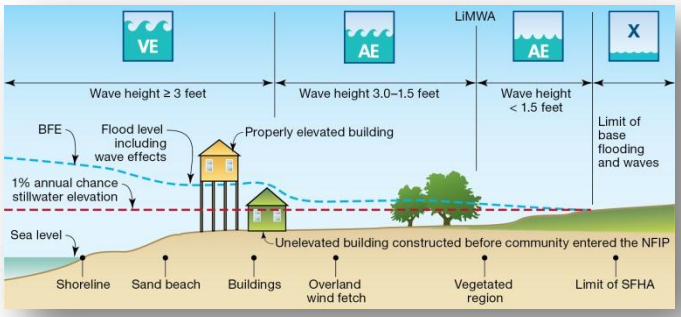

Figure 1.

Identifying LiMWA on the Flood Map

A new line layer is now added to the FIRM Database to accommodate the LiMWA features and is depicted on the FIRM as two black dots and three white dash lines in a sequential pattern as shown in Figure 2. The LiMWA is identified in the FIRM legend as "Limit of Moderate Wave Action," and a note is included in the "Notes To Users"

Figure 2.

section on the map panel to explain the LiMWA boundary.

Figure 3 is an example FIRM showing the delineated LiMWA. The area in Map A shows the delineation of the LiMWA in an area where the predominant coastal flood hazard is overland wave propagation. Map B shows delineation of the LiMWA in a region where the major coastal flood hazard is wave breaking and run-up.

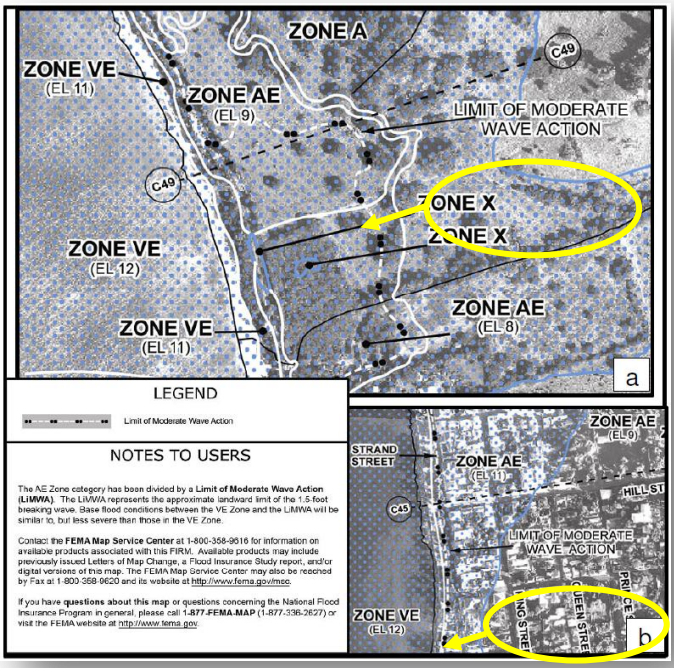

Figure 3.

Effects on Floodplain Management

While FEMA does not impose floodplain management requirements based on the LiMWA, the LiMWA is provided to help communicate the higher risk that exists in that area. Because the 1.5-foot breaking wave in the LiMWA zone can potentially cause foundation failure, communities are encouraged to adopt building construction standards similar to Zone VE in those areas. For communities that do adopt Zone VE building standards in the area defined by the LiMWA, additional Community Rating System (CRS) credits are available.

In addition, the LiMWA line is a separate digitial FIRM database feature that can be exported and overlaid with other digital data. Mapping the LiMWA will provide community officials and other stakeholders with additional important flood risk details to consider when buying/developing, mitigating or enforcing floodplain management regulations in the coastal flood hazard areas.

Effects on Property Owners

Residents and business owners living or working in the LiMWA zone should be aware of the potential wave action along with floating debris, erosion and scour that could cause significant damage on their property. They are encouraged to build safer and higher than minimum local requirements to reduce the risk to life and property.

While the risk of damage is higher between the LiMWA line and the Zone VE line than other parts of the coastal AE zone, the NFIP flood insurance rates currently do not differ from other AE zone rates.

The federal mandatory purchase requirement does apply in these zones and property owners are encouraged to carry coverage equivalent to the replacement cost of their building and to include contents coverage.

If remapping results in a higher risk flood zone or a higher Base Flood Elevation*, the property owner is encouraged to contact their insurance agent to discuss possible cost-saving options (e.g., grandfathering; Preferred Risk Policy Extension). To learn more about flood insurance, the risks of flooding and to locate an agent, visit FloodSmart.gov.

*The elevation of floodwaters having a one percent chance of being equaled or exceeded in any given year.

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