

Unit 3: The National Flood Insurance Program

- Key Definitions

- Storm surge

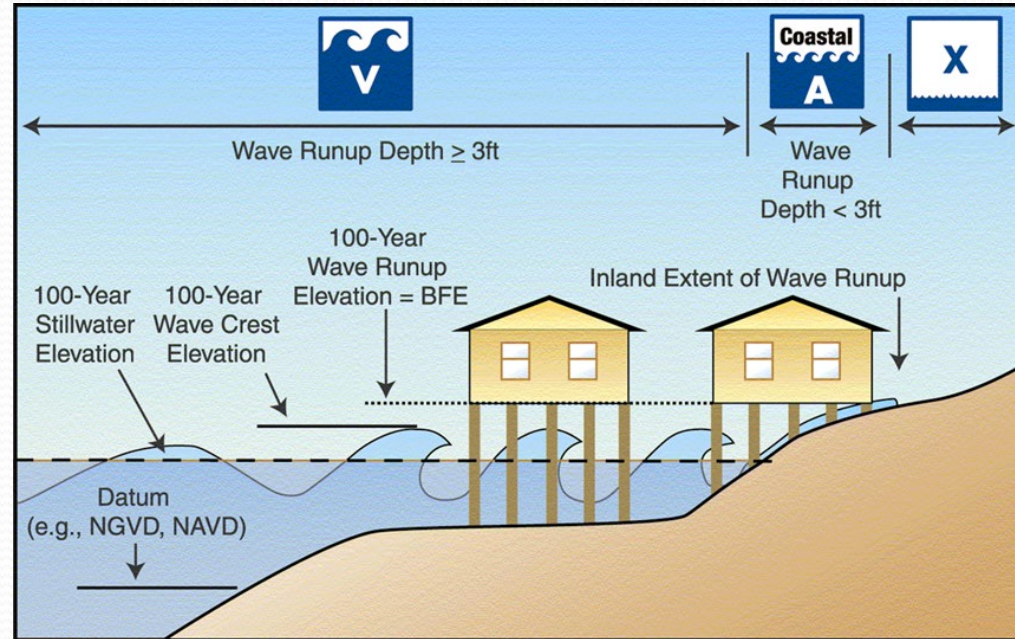
- Strong winds that “pile” water up against the shore

- Wave runup

- When waves hit the shore, water is moving with such force that it keeps traveling inland

- Wave setup

- The additional elevation of the water surface over normal surge elevation caused by onshore mass transport of the water by wave action



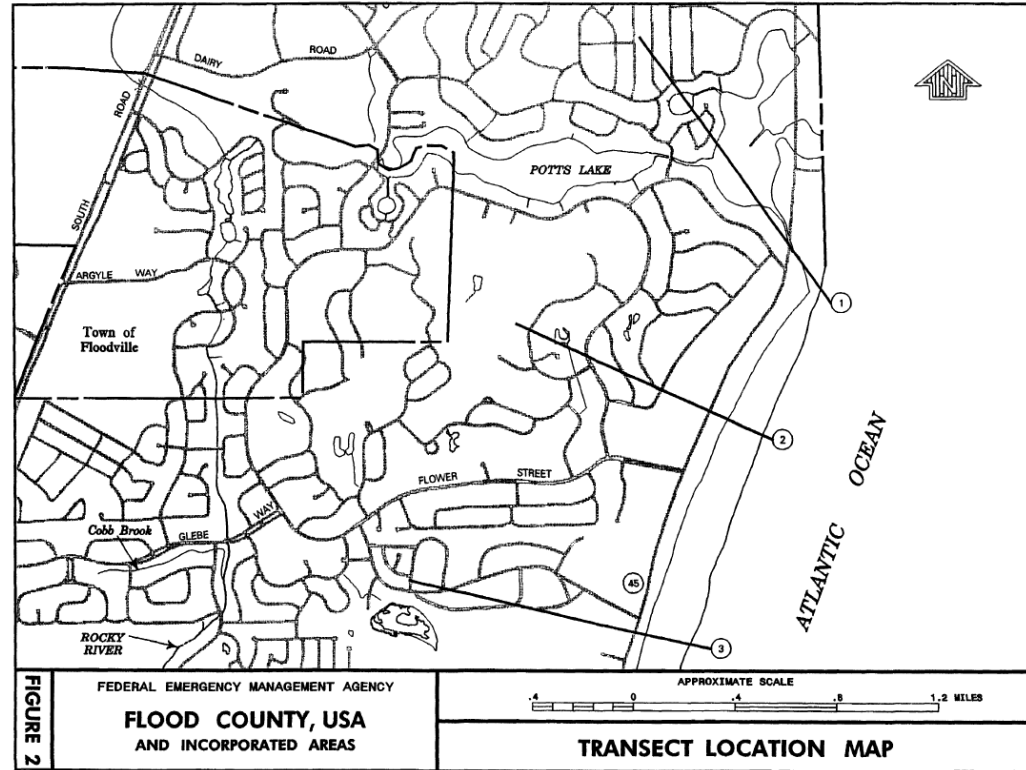
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- Coastal Analysis

- The regulatory BFE is the stillwater elevation plus wave runup, or the wave crest elevation, whichever is greater.
- $BFE = SW\ Elev_{100\text{-year}} + \text{Wave Height}$, or $SW\ Elev_{100\text{-year}} + \text{Wave Runup}$ (whichever is greater)

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- Transect Location Map



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- Coastal High Hazard Area
 - Where the computed wave heights for the base flood are three feet or more;
 - The inland limit of the primary frontal dune; or
 - Where the eroded ground profile is three feet below the computed runup elevation.

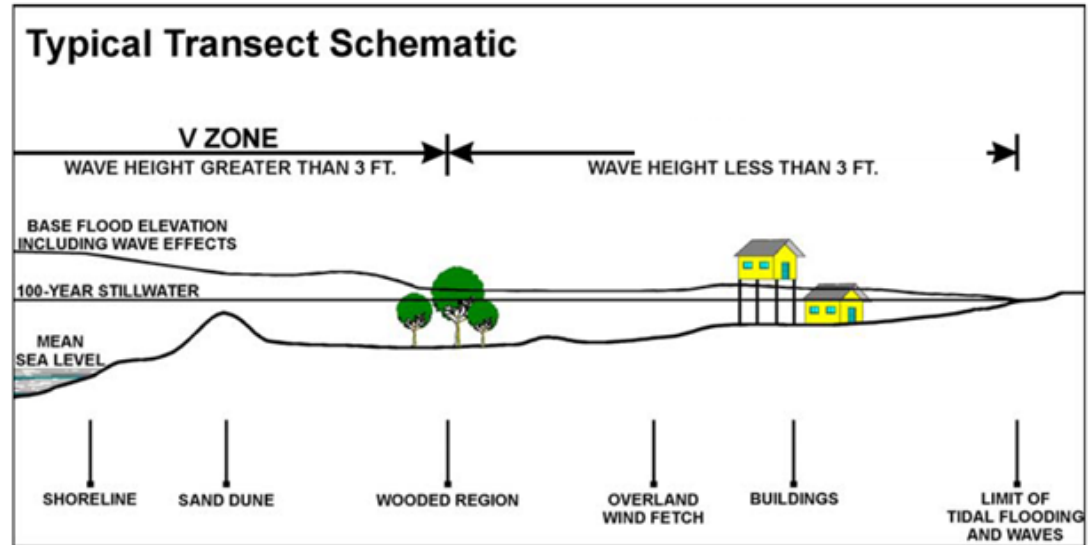
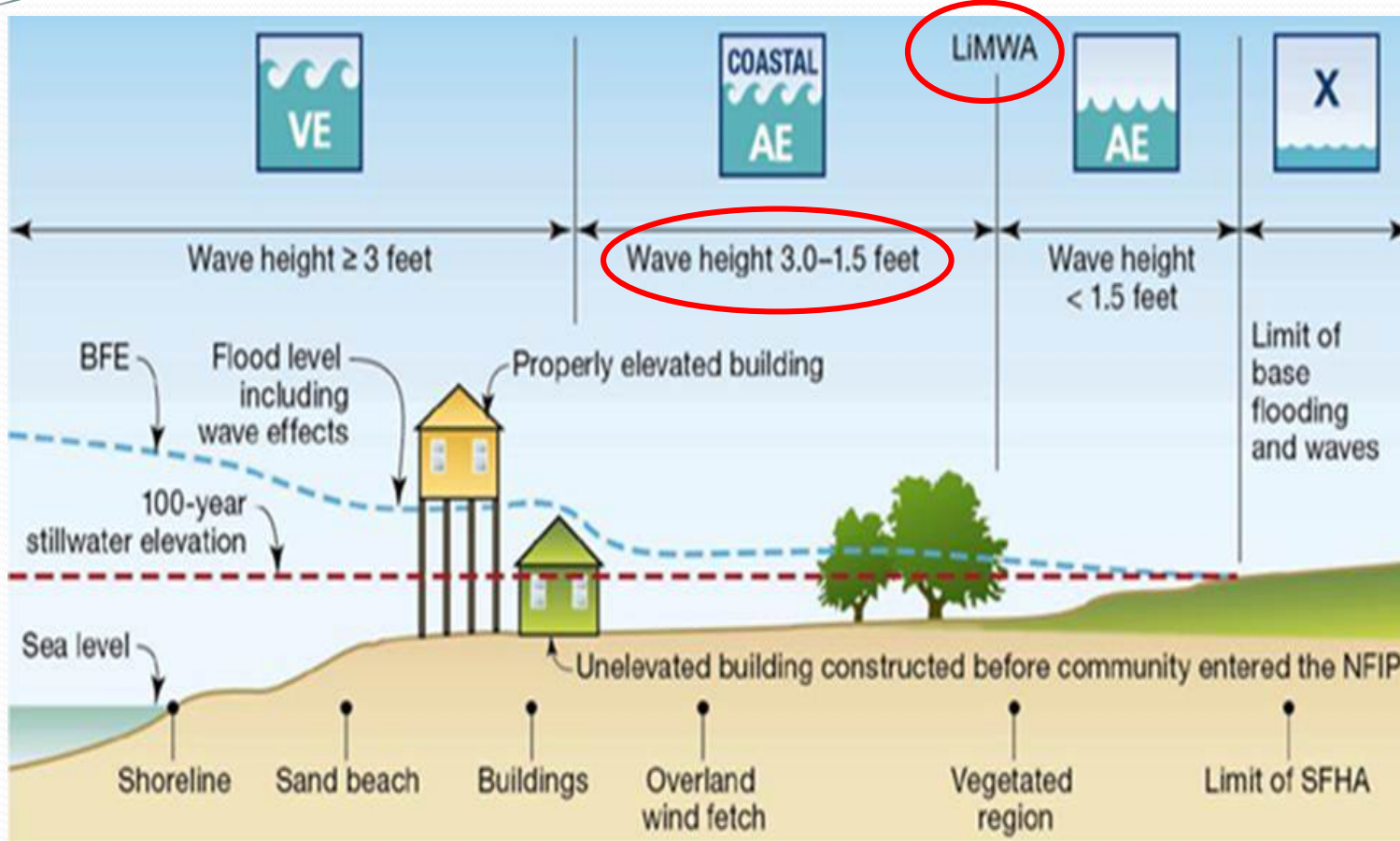


Figure 3-9. Transect schematic

Regulations (Optional) – LiMWA (Coastal A Zone)



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- Limit of Moderate Wave Action (LiMWA)
 - After wave attenuates to less than 3 ft, there is still significant energy
 - LiMWA line represents where wave is 1.5 ft above $SW_{100\text{-year}}$
 - Area between end of V-Zone and LiMWA:
 - “Coastal A Zone”
 - Area landward of LiMWA:
 - “A Zone”

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- **Limit of Moderate Wave Action (LiMWA)**
 - Area between end of V-Zone and LiMWA:
 - “Coastal A Zone”
 - Regulations – “A Zone” (per NFIP)
 - Regulating as “V Zone” (“higher standard”)
 - (NJ, NY, other states adopting in State Code)

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● Shallow Flooding Studies

- Flooding with an average depth of one to three feet in areas where a clearly defined channel does not exist.
 - Ponding: Where water (in flat areas) collects or “ponds” in depressions.
 - Sheet flow: Where there are no defined channels or on flat plains (in steep areas), water will spread out over the land surface.

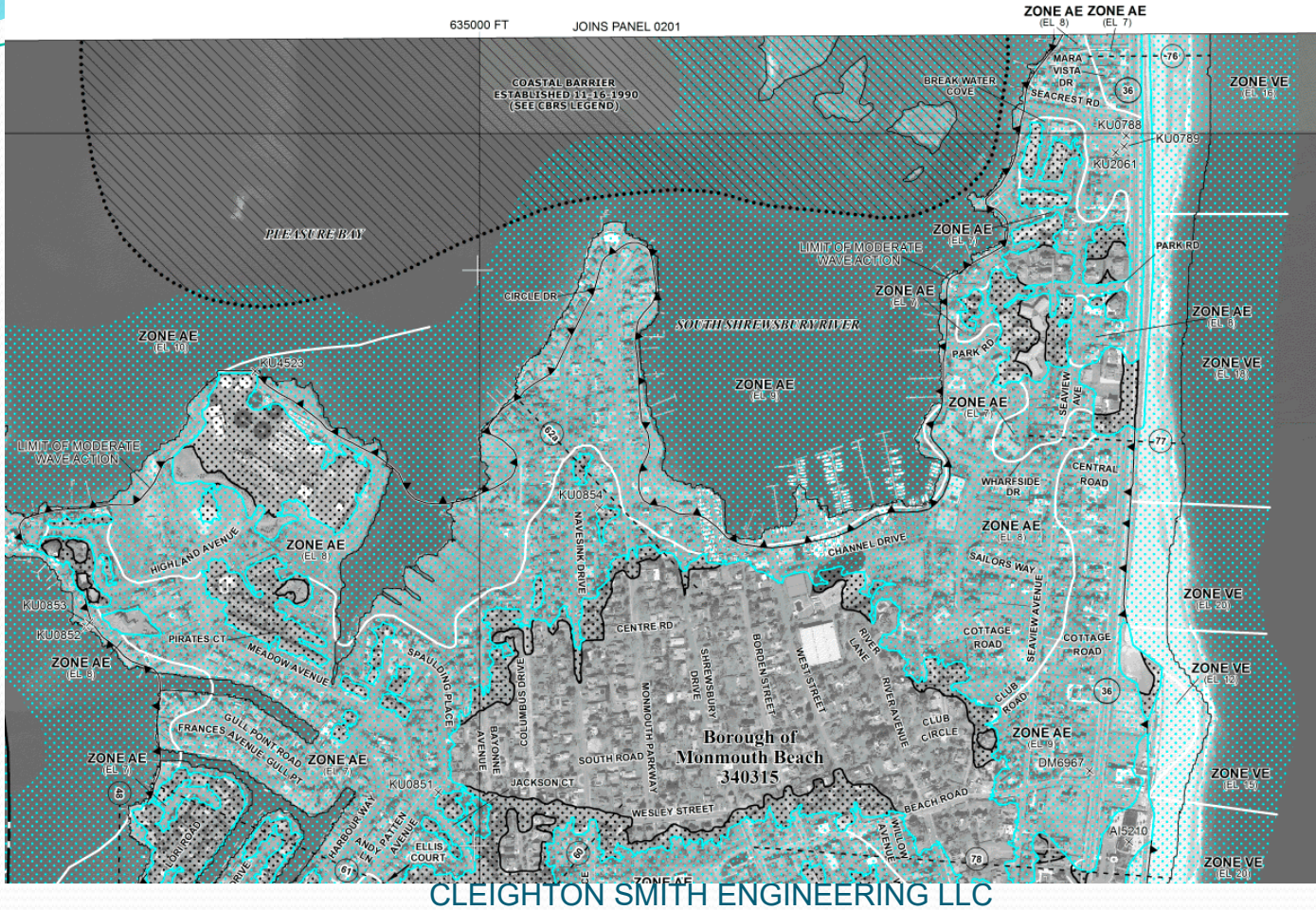
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- Shallow Flooding Studies (continued)
 - Urban drainage: Local drainage problems can be caused where runoff collects in yards or swales or when storm sewers back up.
 - Coastal flooding: Wave runup will send water inland over flat areas or over dunes.
 - Sheet flow areas are AO Zones
 - Ponding areas are AH Zones

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- Coastal Barrier Resources System (COBRA)
 - Undeveloped portions of coastal barrier islands known as COBRA areas, established by the Coastal Barrier Resources Act of 1982 and the Coastal Barrier Improvement Act of 1990.
 - Only Congress can authorize a revision of the COBRA area boundaries on a FIRM.

Unit 4: Using NFIP Studies and Maps



Example Coastal Floodplain Map