

Coastal Brochures/Fact Sheets/Publications

- Adoption of Flood Insurance Rate Maps by Participating Communities Fact Sheet (FEMA)

<https://www.fema.gov/media-library/assets/documents/30451>



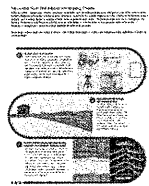
- Coastal Flood Hazard Mapping Studies Fact Sheet (FEMA)

<https://www.fema.gov/media-library/assets/documents/32751>



- Coastal Flood Risk Analysis and Mapping Process Infographic (FEMA)

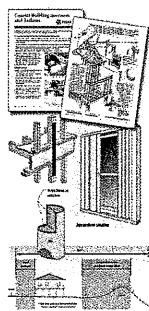
<https://www.fema.gov/media-library/assets/documents/116160>



- Home Builder's Guide to Coastal Construction Technical Fact Sheet Series (FEMA)

<https://www.fema.gov/home-builders-guide-coastal-construction-technical-fact-sheet-series-fema-p-499>

FEMA P-499 is a series of 37 fact sheets, written for engineers, architects, and home owners, that provide technical guidance and recommendations concerning the construction of coastal residential buildings.



- Quick Reference Guide: Comparison of Select NFIP & Building Code Requirements for Special Flood Hazard Areas (FEMA)

<https://www.fema.gov/media-library/assets/documents/25986>



2 - Coastal Brochures/Fact Sheets/Publications

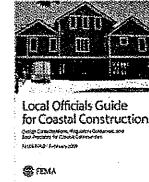
- Saving on Flood Insurance: Information on NFIP's Grandfathering Rules (FEMA)

<https://www.fema.gov/media-library/assets/documents/16686>



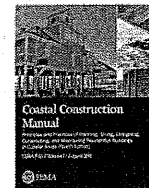
- FEMA P-762 – Local Official's Guide for Coastal Construction

<https://www.fema.gov/media-library/assets/documents/16036>



- FEMA Coastal Construction Manual

<https://www.fema.gov/media-library/assets/documents/3293>



- FEMA Technical Bulletin 5: Free of Obstruction Requirements

<https://www.fema.gov/media-library/assets/documents/3490>



- FEMA Technical Bulletin 9: Design and Construction Guidance for Breakaway Walls

<https://www.fema.gov/media-library/assets/documents/3514>



The Great Lakes Coastal Flood Study

WAVE HAZARDS AND VE ZONES ON THE GREAT LAKES

The introduction of VE Zones to the Great Lakes Region is the result of one of the most extensive coastal flood studies to date, encompassing coastal floodplains in the eight States on the Great Lakes. The Federal Emergency Management Agency (FEMA) conducted the comprehensive analysis of storm and high water events within the Great Lakes Basin in consultation with U.S. Army Corps of Engineers (USACE) Detroit District and the Engineer Research and Development Center (ERDC). The analysis uses the latest scientific methods and the best available data to comprehensively depict flood hazards along the lakeshore.

Understanding the Risk from Wave Hazards

The most severe flood events on the Great Lakes occur when high lake levels are combined with strong winds that drive water and waves onshore. When large waves are paired with elevated lake levels, the waves are able to reach farther onshore, eroding the backshore, and potentially reaching developed lakefront areas. Whether wave hazards reach development depends on local conditions—for instance, in many areas the bluffs are high enough to limit the wave effects to the bluff face. However, in other areas, the bluff or shore protection structures may be overtopped or waves may pass over inundated, low-lying areas.

Waves can cause dramatic structural damage to buildings, including splintering walls, floating homes off foundations, and even causing collapse. Understanding the risks posed by elevated lake levels and waves is important. It can help you make more informed decisions about how to make your family, home, business, and community safer and stronger.

What is a VE Zone?

Like Zone A, or AE, Zone VE is a high risk area subject to flood hazards associated with a 1-percent-annual-chance flood. However, the VE Zone designation is used to differentiate coastal high hazard areas from the rest of the Special Flood Hazard Area. The Zone VE designation indicates that during the 1-percent-annual-chance flood, wave hazards are expected to be particularly strong and have the potential to cause structural damage.

GREAT LAKES WAVE HAZARDS



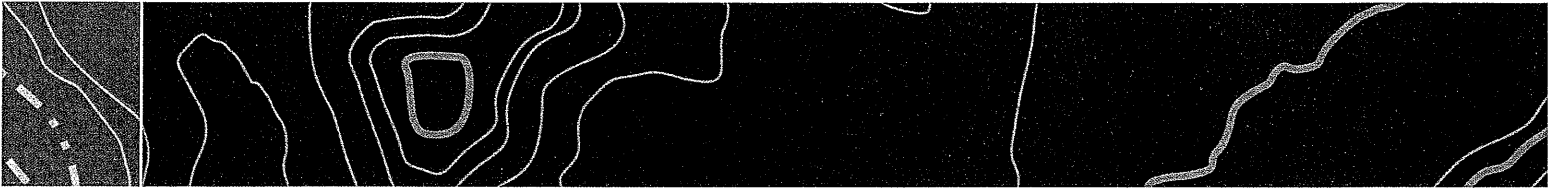
Photo: PWGSC; R. Vroom, 1976

Wave runoff occurs when a wave encounters a barrier—be it a beach, bluff, or structure at the shoreline—and produces an uprush of water on the face of the barrier. Wave overtopping is when wave runoff exceeds the top of the barrier and flows or splashes into the area beyond.



Elevated lake levels can inundate low-lying lakefront areas, allowing waves to pass over ground that is typically dry. This process is known as Overland Wave Propagation.





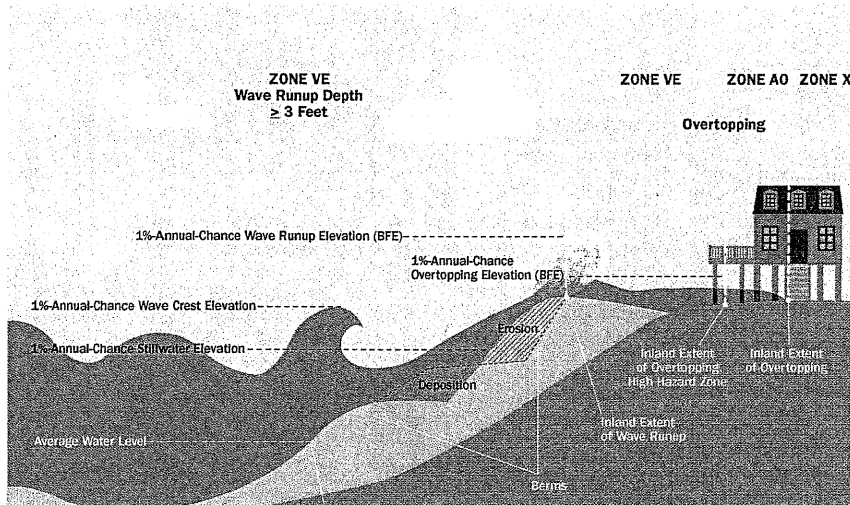
Zone VE Mapping Criteria

Zone VE is mapped for areas that meet one or more of the following criteria:

1. Wave runoff depth exceeds 3 feet relative to the (eroded) ground.
2. Wave overtopping rate exceeds 1 cfs/ft.
3. Wave heights exceed 3 feet in areas of overland wave propagation.
4. The primary frontal dune.

The actual Zone VE boundary shown on the Flood Insurance Rate Map is defined as the farthest inland extent of any of the four criteria listed.

For more information on VE Zone mapping please refer to Section 3.9 Identification of Flood Insurance Risk Zones of FEMA's Great Lakes Coastal Guidelines Update (January, 2014). [<http://www.fema.gov/media-library/assets/documents/34953>]



Insurance, Floodplain Management, and Building Requirements in Zone VE

Comprehensive flood hazard mapping that includes wave effects and VE Zones will be new for most Great Lakes communities. Inclusion of this new flood zone designation may require adoption of additional local floodplain management ordinances and building requirements that are intended to help safeguard against damaging wave forces. Insurance ratings will also be affected by changes in base flood elevations and flood zone designations. A multitude of resources are available through FEMA that further describe the floodplain management ordinances, building requirements, and insurance ratings for Zone VE. FEMA is committed to helping your community understand, work through, and adapt to these changes.

DEFINITIONS

1-Percent-Annual-Chance Flood:

A flood that has a 1-percent chance of being equaled or exceeded in any given year. It is also referred to as the base flood or 100-year flood.

Base Flood Elevation (BFE):

The computed elevation to which floodwater is anticipated to rise during the base flood with wave effects included in coastal areas. The BFE, flood hazard zone, and a structure's elevation are factors in determining the flood insurance premium.

Special Flood Hazard Area (SFHA):

The area shown as inundated by the floodwaters of the 1-percent-annual-chance-flood on flood maps.

Coastal High Hazard Area (CHHA)

or VE Zone: An SFHA extending from offshore to the inland limit of a primary frontal dune along an open coast and any other area subject to high-velocity wave action from storms.

Primary Frontal Dune (PFD):

A continuous or nearly continuous mound or ridge of sand with relatively steep seaward [lakeward] and landward slopes immediately landward and adjacent to the beach and subject to erosion and overtopping from high water levels and waves during major storms. PFDs are found only in limited locations on Great Lakes shorelines.

Limit of Moderate Wave Action (LiMWA):

The inland limit of the area expected to have 1.5-foot or larger breaking waves. Coastal construction practices may be required lakeward of the LiMWA for communities that have adopted design standards from ASCE 24 and/ or International Building Code.

Contact:

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Ken.Hinterlong@fema.dhs.gov

FEMA Floodplain Management Courses for FY 2020

Did you know that FEMA offers tuition-free courses on floodplain management? Did you know eligible individuals taking courses at FEMA's Emergency Management Institute in Emmitsburg, Maryland are reimbursed for travel costs and housing on campus is of no charge? If you are a state, local or tribal government representative, recognized volunteer organization representative, an active emergency management organization representative, or represent state or local fire organizations, you are eligible. The only cost to eligible individuals is the price of an on-campus meal ticket, and, of course, your time. For more information on reimbursement for travel see the Student Welcome Package: https://www.training.fema.gov/emiweb/downloads/netc_welcome_package.pdf?v20150805.

Below is a list of FEMA Floodplain Management Courses for 2020 with the locations and dates of the offerings. If you are interested in applying, please see the section, "How to Apply."

Managing Floodplain Development through the National Flood Insurance Program (NFIP) E0273: This course is designed to provide an organized training opportunity for local officials responsible for administering their local floodplain management ordinance. The course will focus on the NFIP and concepts of floodplain management, maps and studies, ordinance administration, and the relationship between floodplain management and flood insurance.

Selection Criteria: Local officials responsible for administering local floodplain management ordinances, including but not limited to floodplain management administrators, building inspectors, code enforcement/zoning officers, planners, city/ county managers, attorneys, engineers, and public works officials. Federal/State/regional floodplain managers also are encouraged to attend. Participants should have less than 3 years of full-time experience in the field of floodplain management.

Prerequisites: Participants must have knowledge of computers (basic Windows and spreadsheet programs). Participants must complete the following online tutorials:

1. Flood Insurance Rate Map (FIRM) tutorial at http://www.floodmaps.fema.gov/tutorials/ot_firm.swf
2. Federal Insurance Studies (FIS) tutorial at http://www.floodmaps.fema.gov/tutorials/ot_fis.swf

Course Offerings: *At the Emergency Management Institute (E0273) – See how to apply below:*

- December 2 – 5, 2019
 - May 4 – 7, 2020
 - August 31 – September 3, 2020
-

Advanced Floodplain Management Concepts (E0194): This advanced floodplain management course is a dynamic and interactive instruction that covers the following four topics in detail: 1. Local Floodplain Manager Roles and Responsibilities (1 day), 2. National Flood Insurance Program Floodplain Rules and Regulations in Depth (1 day), Letter of Map Change – Procedures for applying and Floodplain Management Implications (1 day); and Preparing for Post-Disaster Responsibilities (1 day).

Selection Criteria: Certified Floodplain Managers (CFM) or community officials with 2 years of full-time floodplain management experience. Federal, State, tribal, and local officials will take precedence.

Prerequisites: **Recommended** Participants should have completed E273, *Managing Floodplain Development through the National Flood Insurance Program (NFIP)*.

Course Offerings: *At the Emergency Management Institute– See how to apply below:*

- Not offered this year
-

Advanced Floodplain Management Concepts II (E0282): This advanced floodplain management course is a dynamic and interactive instruction that covers the following four topics in detail: 1. Placement of Manufactured Homes and

Recreational Vehicles in the Floodplain (1 day). 2. NFIP Flood Insurance Principles for the Floodplain Manager (1 day). 3. Higher Standards in Floodplain Management (1 day). 4. Hydrology and Hydraulics for the FPM (1 day).

Selection Criteria: Certified Floodplain Managers (CFM) or community officials with 2 years of full-time floodplain management experience. Federal, State, tribal, and local officials will take precedence.

Prerequisite: *Recommended* Participants should have completed E273, *Managing Floodplain Development through the National Flood Insurance Program (NFIP)*.

Course Offerings: *At the Emergency Management Institute— See how to apply below:*

- March 16 – 19, 2020
-

Advanced Floodplain Management Concepts III (E0284): This advanced floodplain management course is a dynamic and interactive instruction that covers the following five topics in detail: 1. Floodway Standards (1 day). 2. Disconnects between NFIP Regulations and Insurance (1 day). 3. Common Noncompliance Issues (½ day). 4. Digital Flood Insurance Rate Maps (DFIRMs) (½ day). 5. Substantial Improvement/Substantial Damage (1 day).

Selection Criteria: Certified Floodplain Managers (CFM) or community officials with 2 years of full-time floodplain management experience. Federal, State, tribal, and local officials will take precedence.

Prerequisite: *Recommended* Participants should have completed E273, *Managing Floodplain Development through the National Flood Insurance Program (NFIP)*.

Course Offerings: *At the Emergency Management Institute— See how to apply below:*

- July 6 – 9, 2020
-

Retrofitting Flood-Prone Residential Buildings (E0279): This course provides engineering and economic guidance to architects, engineers, and local code enforcement officials in retrofitting existing one- to four-family residential structures situated in flood-prone areas. The retrofitting measures presented are creative, practical, compliant with applicable floodplain regulations, and satisfactory to most homeowners.

Prerequisite: *Recommended* Participants should complete IS-0279, *Engineering Principles and Practices for Retrofitting Flood-Prone Residential Structures*. Taking IS-0279 should also help potential participants establish whether they have the necessary level of building science knowledge.

Course Offerings: *At the Emergency Management Institute— See how to apply below:*

- May 11 – 14, 2020
-

National Flood Insurance Program/Community Rating System (E0278): This course covers the Community Rating System (CRS), a nationwide initiative of FEMA's National Flood Insurance Program (NFIP). It describes activities eligible for credit under the 2013 CRS Coordinator's Manual, how a community applies, and how a community modifies an application to improve its classification.

Prerequisite: *Required* Must be a Certified Floodplain Manager, or have completed the E0273, *Managing Floodplain Development through the National Flood Insurance Program*, course or be a full-time Floodplain Manager with more than 2 years of full-time floodplain management experience, as demonstrated through work in a floodplain management, codes enforcement, or building code field and through work specifically related to floodplain management.

Course Offerings: *At the Emergency Management Institute – See how to apply below:*

- October 28 – 31, 2019

- February 3 – 6, 2020
 - April 20 – 23, 2020
 - July 27 – 30, 2020
-

HAZUS-Multi Hazards for Flood (E0172): This course provides in-depth instruction and hands-on exercises that develop the skills needed to effectively use HAZUS-MH for modeling the impacts on communities from riverine and coastal flooding.

Recommended Prerequisites: E0313, *Basic HAZUS Multi-Hazard*, any field or resident HAZUS course, previous or current use of HAZUS or ArcGIS software in performing your job, or skills equivalent to those taught in E0190, *ArcGIS for Emergency Managers*

Course Offerings: *At the Emergency Management Institute – See how to apply below:*

- December 2 – 5, 2019
 - July 27 – 30, 2020
-

Introduction to Residential Coastal Construction (IS0386): This is a very comprehensive, advanced-level course. It will introduce the learner to basic information about residential coastal construction. Some unit topics include coastal environment, regulatory requirements, and identifying hazards. This course can be downloaded from the Independent Study web site and the test can be completed and submitted online.

Selection Criteria: The primary audience for this course is engineers and architects. Floodplain managers and building code officials are also encouraged to attend. Hazard mitigation, planning, zoning, public works, and other building officials with building science knowledge and also those from the private sector, such as engineering firms, may also apply.

Recommended Prerequisites: Participants should complete IS0279, *Engineering Principles and Practices for Retrofitting Flood-Prone Residential Structures*. Taking IS0279 should also help potential participants establish whether they have the necessary level of building science knowledge.

Course Offerings:

- Online
-

Residential Coastal Construction (E0386): This course is designed to train participants to effectively use FEMA P 55, *Coastal Construction Manual (4th Edition)*. The course and publication provide a comprehensive approach to planning, siting, designing, constructing, and maintaining homes in the coastal environment. The course contains in-depth descriptions of design, construction, and maintenance practices that, when followed, will increase the durability of residential buildings in the harsh coastal environment and reduce economic losses associated with coastal natural disasters.

Selection Criteria: The primary audience for this course is engineers and architects. Floodplain managers and building code officials are also encouraged to attend. Hazard mitigation, planning, zoning, public works, and other building officials with building science knowledge and also those from the private sector, such as engineering firms, may also apply.

Recommended Prerequisites: Participants should complete IS0279, *Engineering Principles and Practices for Retrofitting Flood-Prone Residential Structures*. Taking IS0279 should also help potential participants establish whether they have the necessary level of building science knowledge.

Course Offerings: At the Emergency Management Institute – See how to apply below:

- September 21 – 24, 2020

For the entire course catalog: <https://training.fema.gov/emicourses/emicalog.aspx>

How to apply to EMI Courses

Notice to Applicants for FY 2019 Courses: To reduce the risk of identity theft, FEMA, the National Fire Academy, and the Emergency Management Institute are eliminating the use of the Social Security Number (SSN), where possible and applying for training. FEMA has implemented the use of a Student Identification (SID) number. You will be required to obtain and use the SID in applying for courses. This number will be used in place of the SSN on your application.

1. Obtain FEMA SID number:
 - a. Step 1: To register go to <https://cdp.dhs.gov/femasid>
 - b. Step 2: Click on the "Register for a FEMA SID" box on the right side of the screen.
 - c. Step 3: Follow the instructions and provide the necessary information to create your account
 - d. Step 4: You will receive an email with your SID number. You should save this number in a secure location.
2. Download and fill out the General Admission Application, FEMA Form 119-25-1 (Previously 75-5), including SID number*: <https://training.fema.gov/apply/119-25-1.pdf?d=2014-12-9>
3. Complete and sign the application form (Please fill out all blanks on the form completely or it will be returned). This application must be coordinated, reviewed, and approved by:
 - a. The head of the applicants sponsoring organization,
 - b. Forward the application to the appropriate State Emergency Management Agency for Emergency Management Services, and (The addresses are listed at the back of the EMI Catalog of Activities: <https://training.fema.gov/emicourses/emicalog.aspx>
 - c. The NETC Admissions Office.
4. Send completed applications to:

Admissions Office, Room I-216
National Emergency Training Center
16825 South Seton Avenue
Emmitsburg, Maryland 21727-8998
Phone: (301) 447-1035
Fax: (301) 447-1685
Email: netc-admissions@fema.dhs.gov

For more details about applying visit the EMI Website: <https://training.fema.gov/apply/>