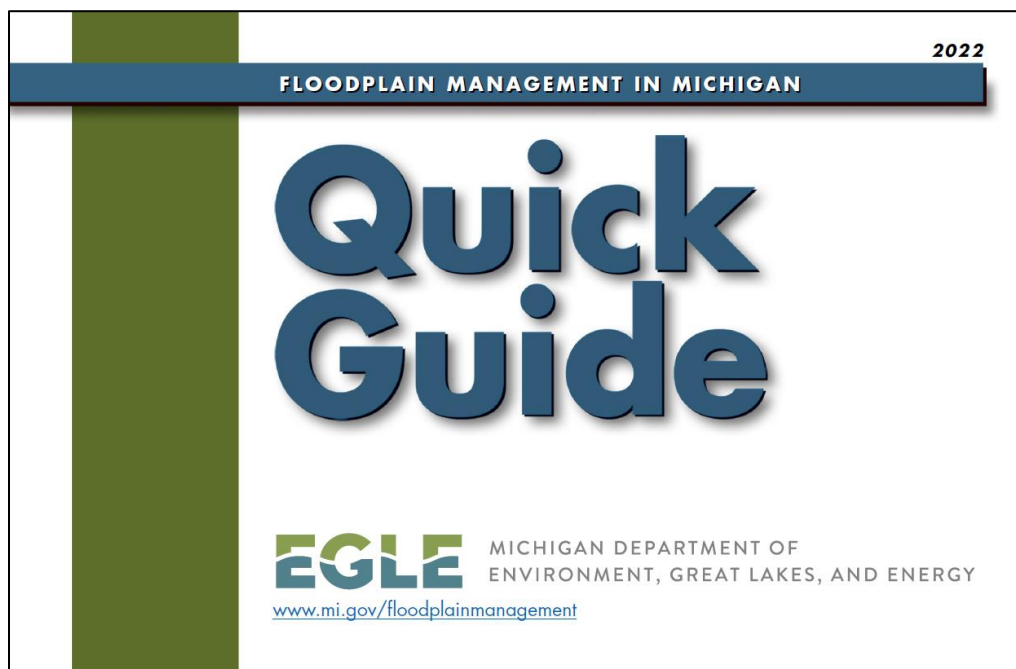


June 2023 Edition



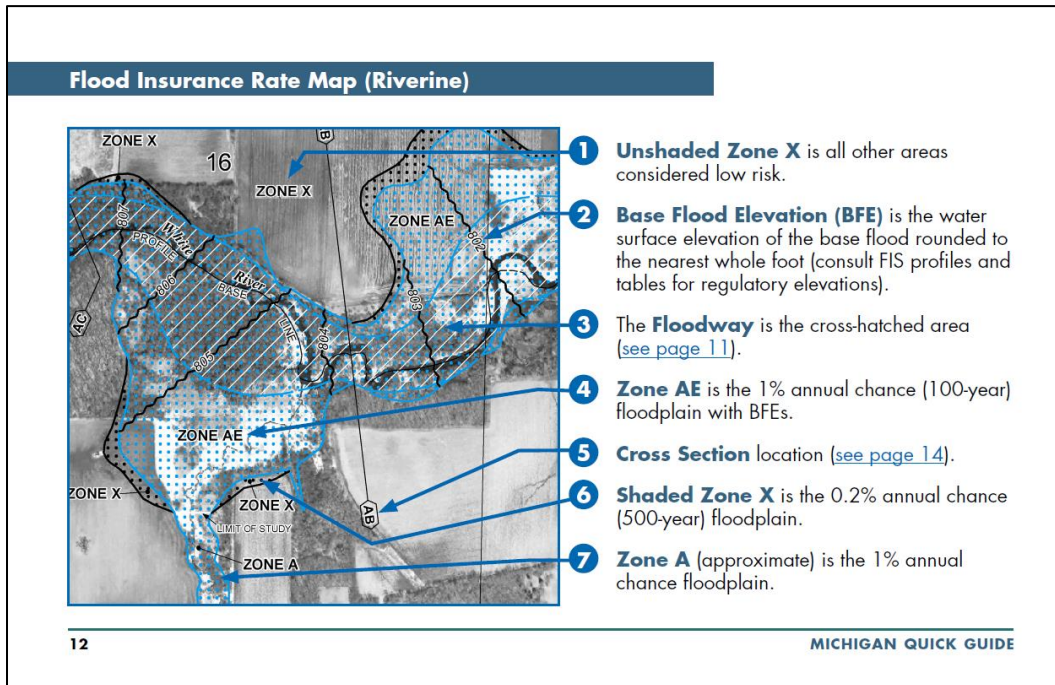
Floodplain Management in Michigan - Quick Guide 2022 Updates



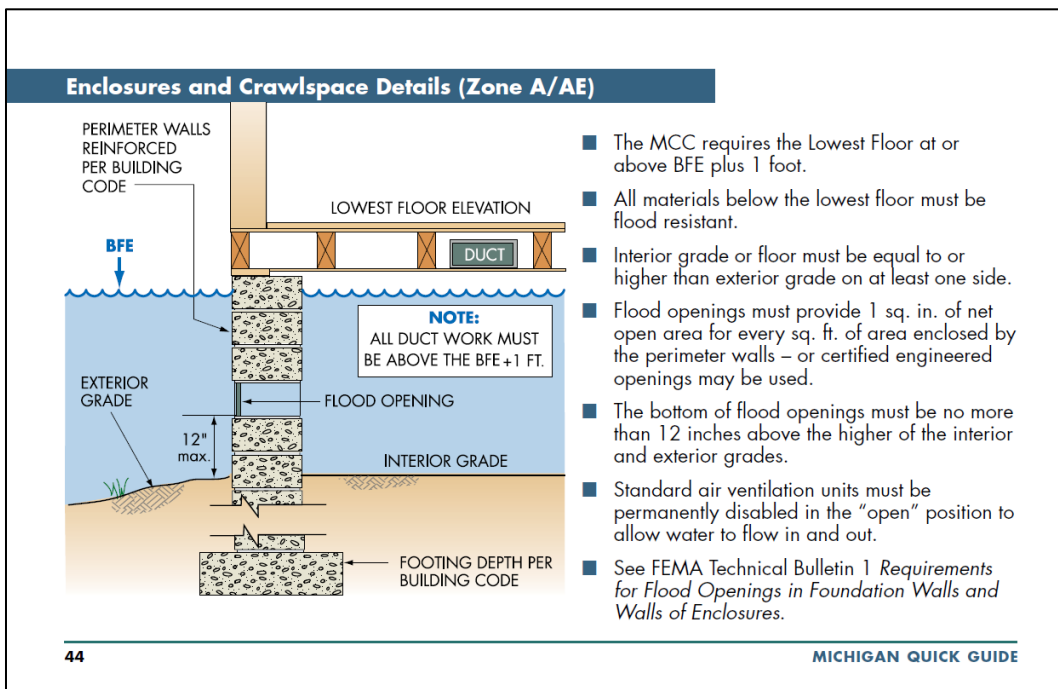
[The Floodplain Management in Michigan Quick Guide](#) (Quick Guide) has been updated and is available in both print and online. The Michigan Department of Environment Great Lakes and Energy (EGLE) and the Federal Emergency Management Agency developed the Quick Guide to assist communities, residents, and anyone interested in floodplain with common floodplain management issued in Michigan.

The topics in the Quick Guide include floodplain regulations, construction, development, insurance, mapping, and community resiliency. It can be a handy way to demonstrate floodplain construction or mitigation techniques.

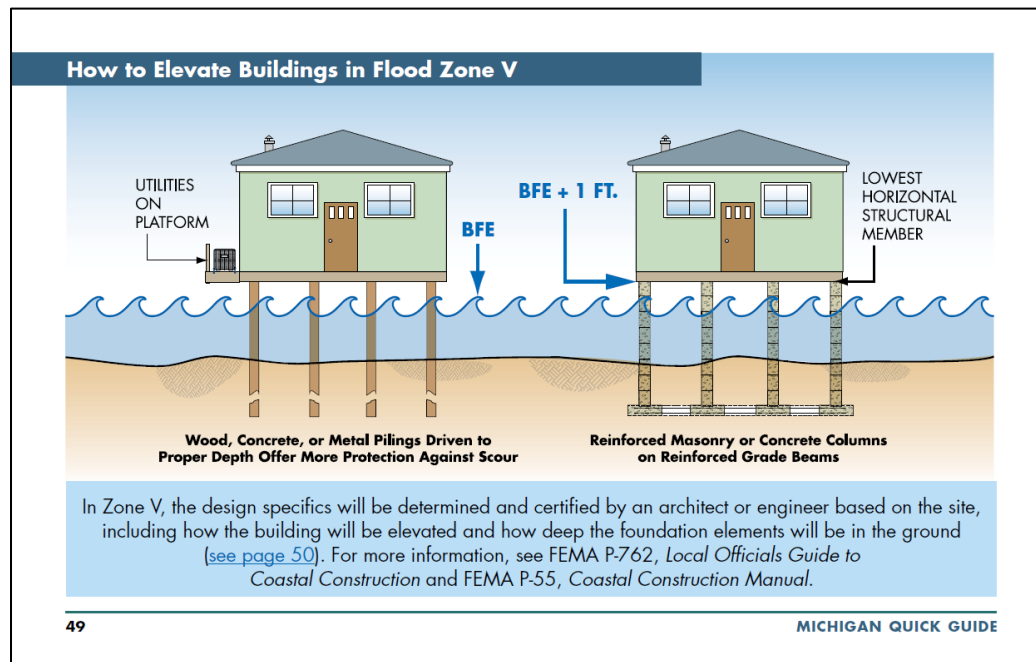
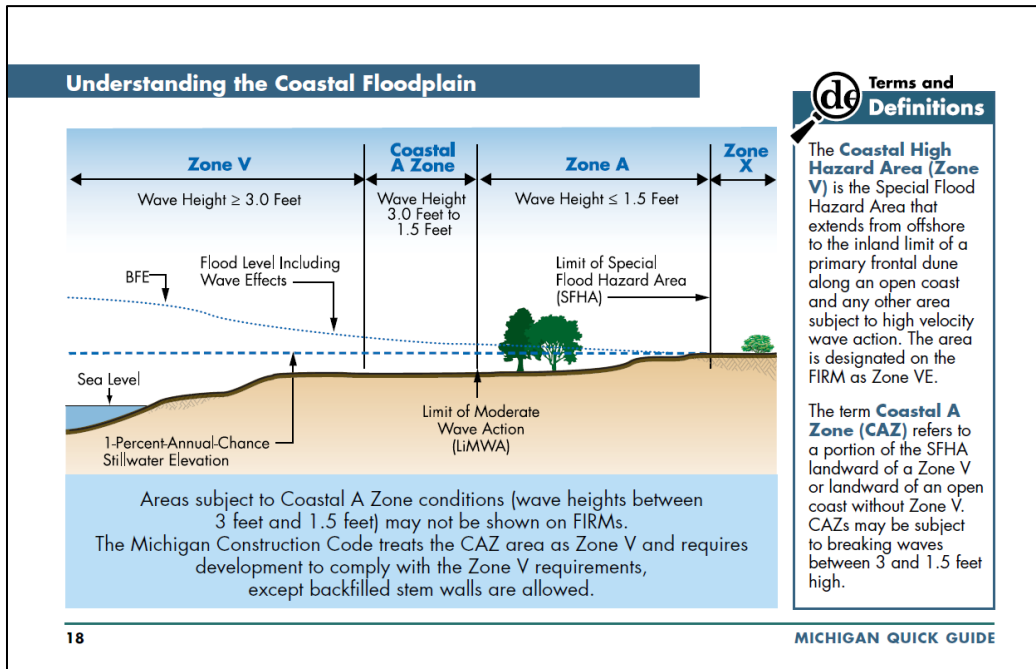
The Quick Guide can help you use and understand Flood Insurance Rate Maps.



It has diagrams and explanations of how to safely building in the regulated floodplain. This is an example of a crawlspace foundation, but the Quick Guide includes other options to elevate a structure in the floodplain.



It includes information about the Velocity Zones along the Great Lakes shorelines.



It can help you understand how to complete or review an Elevation Certificate.

Completing the Elevation Certificate

SECTION C – BUILDING ELEVATION INFORMATION (SURVEY REQUIRED)

C1. Building elevations are based on: Construction Drawings* Building Under Construction* Finished Construction
*A new Elevation Certificate will be required when construction of the building is complete.

C2. Elevations – Zones M-1, A30, AE, AH, A (with BFE), VE, V1-V30, V (with BFE), AR, AR/A, AR/AE, AR/M-1-A30, AR/AH, AR/AO. Complete items C2 a-h below according to the building diagram specified in Item A7. In Puerto Rico only, enter meters.

Benchmark Utilized: _____ Vertical Datum: _____

Indicate elevation datum used for the elevations in items a) through h) below. Datum used for building elevations must be the same as that used for the BFE.

Check the measurement used.

<p>a) Top of bottom floor (including basement, crawlspace, or enclosure floor) 727.0</p> <p>b) Top of the next higher floor 728.0</p> <p>c) Bottom of the lowest horizontal structural member (V Zones only) 724.5</p> <p>d) Attached garage (top of slab) 727.0</p> <p>e) Lowest elevation of machinery or equipment serving the building (Describe type of equipment and location in Comments) 724.5</p> <p>f) Lowest adjacent (finished) grade next to building (LAG) 726.5</p> <p>g) Highest adjacent (finished) grade next to building (HAG) 724.5</p> <p>h) Lowest adjacent grade at lowest elevation of deck or stairs, including structural support 724.5</p>	<p><input checked="" type="checkbox"/> feet <input type="checkbox"/> meters</p> <p><input type="checkbox"/> feet <input type="checkbox"/> meters</p> <p><input checked="" type="checkbox"/> feet <input type="checkbox"/> meters</p> <p><input type="checkbox"/> feet <input type="checkbox"/> meters</p> <p><input checked="" type="checkbox"/> feet <input type="checkbox"/> meters</p> <p><input type="checkbox"/> feet <input type="checkbox"/> meters</p> <p><input checked="" type="checkbox"/> feet <input type="checkbox"/> meters</p>
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ELEVATION CERTIFICATE (partial)

In this example, the BFE is 725.0 feet.
 The slab-on-grade house was elevated on fill 2 feet above the BFE; the garage is 2.5 feet below the BFE (with flood openings).

The Michigan Construction Code requires submission of elevation documentation two times: when the lowest floor is set and prior to further vertical construction and again prior to the final inspection. A Michigan licensed professional surveyor must fill out and seal the surveyed elevations. The EC includes diagrams for different building types. Several points must be surveyed.

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MICHIGAN QUICK GUIDE

The Quick Guide does not have every answer to floodplain development questions, but it is always a good reference to start with. You can also use the [National Flood Insurance Technical Bulletins](#) when more in depth information is needed. Here is a list of the Technical Bulletins.

- [Openings in Foundation Walls and Walls of Enclosures](#)
- [Flood Damage-Resistant Materials Requirements](#)
- [Non-Residential Floodproofing Requirements and Certifications](#)
- [Elevator Installation](#)
- [Free-of-Obstruction Requirements](#)
- [Below-Grade Parking Requirements](#)
- [Wet Floodproofing Requirements and Limitations](#)
- [Design and Construction Guidance for Breakaway Walls Below Elevated Coastal Buildings](#)
- [Reasonably Safe from Flooding Requirement for Building on Filled Land](#)
- [Crawlspace Construction for Buildings Located in Special Flood Hazard Areas \(Interim Guidance\)](#)

Printed copies of the Quick Guide will be sent to Michigan communities. District Floodplain Engineers also have a limited number at the EGLE district offices.

If you have questions about the Quick Guide, please contact [Matt Occhipinti](#), Michigan's National Flood Insurance Program (NFIP) Coordinator.



Turn Around Don't Drown

We often associate flooding with spring snowmelt and rains. However, flooding in Michigan can happen during any season. When floods, safety must be a priority for everyone, but especially for floodplain managers who have responsibilities during flooding events. It is NEVER safe to drive or walk into flood waters.

Never walk or swim in floodwaters. It only takes six inches to knock down an adult. In addition to the threat of drowning, floodwater can expose you to infectious diseases, chemical hazards, and injuries. Flood water is not clean water.

There is no way to know what types of hazards are present in the water during a flooding event. Here is just a short list of hazards that may be the water during a flood.

- Physical objects such as lumber, vehicles, and debris
- Wild or stray animals such as rodents and snakes or carcasses of animals
- Human and farm waste
- Household, medical, and industrial waste and hazardous waste
- Carcinogenic compounds such as arsenic, chromium, and mercury
- Threat of electrocution from Downed power lines

It is also extremely dangerous to attempt to drive through flood waters. The Centers for Disease Control and Prevention report that over half of all flood-related drownings occur when a vehicle is driven into hazardous flood water. It takes just 12 inches of rushing water to carry away most cars and just 2 feet of rushing water can carry away SUVs and trucks.

Never drive around the barriers blocking a flooded road. The road may have collapsed under that water or may collapse with the added weight of your car.

The National Weather Service has additional resources at its [Turn Around Don't Drown website](#). [Ready.gov](#) also has resources about how to stay safe during a flood. Stay safe out there.



What Is Appendix G?

Most communities in Michigan rely on [Michigan Building Codes](#) as the baseline for floodplain management. There is a lot of time and effort making sure that building in the floodplain area constructed to be safe through elevation and special foundation requirements.

Managing floodplains includes more than ensuring buildings are elevated. The minimum standards under the NFIP includes the regulation of all development in the 100-year floodplain which is sometimes called the Special Flood Hazard Area (SFHA).

The NFIP minimum requirements are found in the Code of Federal Regulations Title 44 § 60.3. Under that law, a community must require permits for all proposed construction and other developments including the placement of manufactured homes, within the SFHA. Development is defined as any man-made change to improved or unimproved real estate, including but not limited to buildings or other structures, mining, dredging, filling, grading, paving, excavation or drilling operations or storage of equipment or materials.

Under Appendix G of the Michigan Building Code, “The building official shall review all permit applications to determine whether proposed development sites will be reasonably safe from flooding. If a proposed development site is in a flood hazard area, all site development activities (including grading, filling, utility installation and drainage modification), all new construction and substantial improvements (including the placement of prefabricated buildings and manufactured homes) and certain building work exempt from permit under Section 105.2 shall be designed and constructed with methods, practices and materials that minimize flood damage and that are in accordance with this code and ASCE 24.”

Under Appendix G, development is “any manmade change to improved or unimproved real estate, including but not limited to, buildings or other structures, temporary structures, temporary or permanent storage of materials, mining, dredging, filling, grading, paving, excavations, operations and other land-disturbing activities.”

It can be tricky for building officials to implement the non-structural portions of Appendix G since their focus is usually on buildings and not some of the other activities that are included as development. To make things more complicated, some activities, such as dredging, can meet permitting exemptions under the state’s the State’s Floodplain Regulatory Authority found in Part 31, Water Resources Protection, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Part 31).

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Flood Talks: A Quarterly Opportunity to Discuss Floodplains

Department of Environmental Quality Water Resources Division (WRD) floodplain staff will be holding quarterly outreach Teams Meeting. The day and time have not yet been chosen. If you are interested in Flood Talks and would like to have input on when the meetings will be held, please contact [Donna Cervelli](#).

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Michigan Stormwater Floodplain Association Notes



Floodplain management cannot happen in a vacuum. It takes elected officials, local building and zoning officials, planners, engineer, emergency managers, state, federal and private partners. It takes informed citizens and non-profit organizations and other champions to ensure we have flood resilient communities.

The [Michigan Stormwater Floodplain Association](#) (MSFA) is the Michigan Chapter of the [Association of State Floodplain Managers](#) (ASFPM). You can be a member of the MSFA even if you are not an ASFPM member. The MSFA began in 1987 to promote the common interest in floodplain and stormwater management, enhance cooperation among various local, state and federal governmental agencies, and to encourage effective and innovative approaches to managing Michigan's floodplain and stormwater management systems. It is an organization for everyone involved in floodplain management.

You can find out more about the MSFA at their website: [Mifloods.org](https://mifloods.org) or consider attending a board meeting. The board meets every other month on the second Thursday of the month. You are welcome to join any of the meetings.

August 10, 2023
October 12, 2023
December 14, 2023
February 8, 2024

Microsoft Teams meeting

**Join on your computer, mobile app or
room device**

[Click here to join the meeting](#)

Meeting ID: 288 373 827 072

Passcode: oDpBoh

[37th Annual MSFA Conference](#) will be held at the H Hotel in Midland
March 6 – 8, 2024



State Floodplain Staff and Contacts June 2023

You can always check online for current maps of [WRD permitting staff](#)

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If you would like to contribute to the next newsletter or have a topic you would like to see addressed, please contact [Matt Occhipinti](#).

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