

FREQUENTLY ASKED QUESTION ABOUT FLOODPLAINS

Michigan Department of Environmental Quality

WHAT IS A FLOOD?

The National Flood Insurance Program defines a “flood” as a general and temporary condition of partial or complete inundation of normally dry land areas from overflow of inland or tidal waters or from the unusual and rapid accumulation or runoff of surface waters from any source.

WHAT IS THE 100-YEAR FLOODPLAIN?

The 100-year floodplain is the land adjacent to a river, lake or stream that will be inundated by water during a flood which has a 1% chance of occurring of being exceeded in any given year. Every river, lake or stream has a floodplain associated with it.

HOW IS THE FLOODPLAIN ELEVATION DETERMINED?

The flood elevations for rivers and streams are based on engineering analyses of the hydrology (how much water will runoff the land during a flood event) of the watershed and the hydraulics (flow carrying capacity of a watercourse) of the river or stream.

The amount of runoff during a 100-year flood event is dependent on a number of factors, including rainfall (or snow melt), drainage area, vegetation cover, soil type, moisture content of the soil, land use, slope of land, and presence of wetlands & other flood storage areas. All of these factors are considered in computing the flow rates to be used in the hydraulic analysis. If the United States Geological Survey (USGS) maintains a gaging station (a location on a stream where discharge measurements are made and recorded) on the watercourse, this flow information will also be used in determining the 100-year flood flow.

The hydraulic analysis uses the flood flows to determine how high the water will get during the 100-year (1% chance) flood. The amount that a stream will rise during a flood event is dependent upon a number of factors such as the shape of the channel and the land adjacent to the channel, the slope of the stream, vegetation and obstructions in the stream, and man-made obstructions (including bridges, culverts, and dams). If past flood events have occurred in the area, the hydraulic model will be calibrated to reproduce past flood events. The hydraulic analysis will result in a flood profile being developed which will identify the 100-year flood elevation at any point along the reach of stream that has been studied.

HOW ARE THE FLOODPLAIN MAPS DEVELOPED?

Once the 100-year (1% chance) flood elevation is determined, the flood elevation is then plotted on a topographic map (a map which shows ground elevations referenced to mean sea level). The accuracy of the floodplain maps will depend on the accuracy of the topographic maps. The floodplain maps are only a guide as to whether or not a parcel is located in the floodplain. The most accurate method of determining the location of the floodplain requires an elevation survey to be done by a licensed land surveyor or a professional engineer.

HOW CAN MY PROPERTY BE IN A FLOODPLAIN, I HAVE LIVED HERE FOR 20 YEARS AND I HAVE NOT SEEN IT FLOOD YET?

The standard flood for floodplain management is the 1% chance (100-year) flood. It is possible to go a very long period of time without experiencing the 1% chance flood. It is also possible to have 1% chance floods two years in a row. There are areas along the Grand River that have not

had a significant flood since 1904, while other areas of the state have received “100-year floods” in consecutive years. If you are located in the 100-year floodplain, we do not know when the 1% chance flood will occur, but at some point in time, it will occur.

If a house is located within the 100-year floodplain, it has a 26% chance of being flooded during the life of a 30-year mortgage. The same house during that same 30-year period has only a 1% chance of being damaged by fire.

HOW DO I KNOW IF MY PROPERTY/HOUSE IS IN THE 100-YEAR FLOODPLAIN?

There are various sources that may be checked to see if a floodplain map exists for your community.

Flood Insurance Rate Maps published by the Federal Emergency Management Agency (FEMA) are available on-line, or you can call the FEMA help line at 1-866-336-2627. You can also contact your community (City, Village or Township), your local library, or the MDEQ Geological and Land Management Division.

FEMA has not published maps for every community in Michigan. If a floodplain map does not exist for your area you can contact the MDEQ Geological and Land Management Division to see if your property is within the 100-year floodplain. To make a determination, the MDEQ will need a map showing your property location, (preferably with a legal description), and an estimate as to how high the property is above the water level of the river, lake or stream. This information should be mailed/faxed to the District MDEQ office. Because of workload, please allow about 4 to 8 weeks for such a determination.

HOW DO I KNOW WHAT THE FLOOD ELEVATION IS ON MY PROPERTY?

You may contact your community/county building official, or the DEQ District Office. If FEMA has prepared a detailed flood insurance study, the 100-year flood elevation may be listed on the community’s Flood Insurance Rate Map (FIRM). If a flood elevation has not been established by FEMA, you can contact the DEQ District office, and request a floodplain determination.

WHAT TYPES OF ACTIVITIES WILL REQUIRE A STATE FLOODPLAIN PERMIT?

Any construction, fill or alteration of a floodplain of a river, stream, or drain which has a drainage area greater than or equal to 2 square miles will require a state floodplain permit under Part 31 of the Natural Resources and Environmental Protection Act. Such projects as building a house, placement of fill, installing a culvert or bridge, all would require a permit under Part 31.

CAN I BUILD IN THE FLOODPLAIN?

In general, construction and fill may be permitted in the portions of the floodplain that are not floodway, provided local ordinance and building standards are met. In addition, compensating excavation must be provided that is equal to the volume of fill placed in the floodplain. Floodways are the channel of a river or stream and those portions of the floodplain adjoining the channel which are reasonably required to carry and discharge the 100 year flood; these are areas of moving water during times of flood. New residential construction is specifically prohibited in the floodway.

The current building codes in Michigan requires that new construction or substantially improved buildings within the 100-year floodplain have the lowest floor, elevated at least one-foot above

the 100-year flood elevation. Basements that are below grade on all sides must be at or above the 100-year flood elevation.

WHAT IS A FLOODWAY?

The floodway includes the channel of a river or stream and area adjacent to the channel that will carry moving water during times of flood. This is a high hazard portion of the floodplain. The floodway is that portion of the floodplain that we see on television where the houses have been swept off their foundation. In addition to being a hazard to residents, the floodway also presents a hazard to rescue personnel.

Residential construction is prohibited within the floodway portion of the floodplain. Commercial construction may be permitted within the floodway, however, a hydraulic analysis may be required which demonstrates that the proposal will not harmfully increase flood stages or shift flood flows onto adjacent property owners.

If a Flood Insurance Study has been published for your community, the community may have a copy of the Flood Boundary and Floodway Map, or it may be available on-line, or in your local library.

If a floodway map has not been prepared, the District Floodplain Engineer may be able to provide some guidance into the location of the floodway. Because of workload, please allow 4 to 8 weeks for a determination.

WHAT IS A “HARMFUL” INTERFERENCE?

The term harmful interference or harmful increase is used to determine if a project can be permitted under Part 31. Under the Part 31 rules harmful interference means causing an increased stage or change in direction of flow of a river or stream that causes or is likely to cause damage to property, a threat to life, a threat of personal injury or the pollution, impairment, or destruction of water or other natural resources. If the proposed project does not cause a harmful interference, the project may be permitted under Part 31.

A harmful increase in flood stage can vary from site to site. It is possible in an urban setting, which currently experiences flooding problems, that any increase in flood stage will be harmful. Under this setting, it would have to be demonstrated that the project would not cause any increase in flood stage, for a range of discharges up to and including the 100-year flow.

If a project results in an increase in flood stages, and the increase is not contained on the property of the individual proposing the project, it would be necessary to obtain damage waivers from upstream property owners that will be impacted by the increased flood stages. The damage waivers would state that the upstream property owners are aware of the increased flood potential, and have no objections.

If the increased flood stage is confined to the individual’s property, or it is considered not harmful, the project may be permitted under Part 31.

HOW MUCH DOES A STATE FLOODPLAIN PERMIT COST?

The cost to apply for a permit under Part 31 to alter the floodplain varies depending on what is being proposed. If the project is not located within the floodway portion of the floodplain, the project would meet the “minor” category, and the application fee is \$100.

If the project will involve work within the floodway, but is something that can be permitted without having a hydraulic analysis prepared, the application fee is \$500.

If the project will involve work within the floodway, but will require the submittal of a hydraulic analysis to demonstrate the effects of the floodway alteration, the application and review fee is \$2000.

Download a permit application or fee schedule.

WHAT IS INVOLVED IN A HYDRAULIC ANALYSIS?

A hydraulic analysis may be required when a project is proposed within the floodway portion of the floodplain, and it is necessary to demonstrate the impacts on flood stages. The analysis will require a detailed site plan, stream valley cross sections at locations where the proposed alteration will occur, representative photographs of the channel and overbank areas, and detailed hydraulic computations prepared by a professional engineer licensed in Michigan.

Download the hydraulic report guidelines.

I NEED TO INSTALL A CULVERT IN A STREAM, RIVER, OR DRAIN, DO I NEED A STATE FLOODPLAIN PERMIT?

If the drainage area of the stream is 2 square miles or greater, a permit will be required for the culvert installation. Whether or not a permit could be issued under Part 31 will depend on what impact the proposed culvert will have on upstream flood stages.

The culvert can be reviewed as a minor project (no hydraulic analysis required) if the proposed culvert crossing meets the all of the following criteria:

- Has an effective waterway opening that equals or exceeds the area of the channel
- Has no more than 1.5 feet of fill over the culvert
- Has approach fill that slopes to natural ground elevations within 10 feet of either side of the culvert

Another option which meets the minor project category is to install a clear span bridge that has the lowest bottom of the beam elevation at or above the natural ground elevations on either bank, and the approach fill sloping to natural ground elevations within 10 feet of either end of the bridge.

If the culvert will not meet the minor project category, a hydraulic analysis may be required to demonstrate that the project will not cause a harmful increase onto adjacent property owners. You should contact the district floodplain engineer to discuss the project.

DO I NEED A STATE FLOODPLAIN PERMIT TO PUT AN ADDITION ONTO A HOUSE THAT IS IN THE FLOODPLAIN?

If the addition will increase the size of the “foot-print” of the house, and the addition is in the floodplain, a permit under Part 31 will be required. If the addition will not increase the size of the foot-print of the building (such as adding a second story), a permit under Part 31 will not be required. It should be noted that local building codes will require that the addition be elevated above the 100-year flood elevation.

I PLAN TO BUILD A HOUSE NEAR A LAKE, DO I NEED A STATE FLOODPLAIN PERMIT?

A state floodplain (Part 31) permit is not required for the construction of a house within the floodplain of a lake, provided the construction is not being proposed on the inlet or outlet of the lake. However, the local building code will require that the house be elevated above the 100-year flood elevation.

Following are other activities that do not require a permit under Part 31:

- Part 31 does not apply to a watershed that has a drainage area that is less than 2 square miles at the downstream limit of the proposed project.
- Excavating within the floodplain where dredged materials are placed in an upland (non floodplain) area.
- Utility crossing of a floodplain where the floodplain is restored to existing elevations.
- Planting or cutting of vegetation in the floodplain.

It should be noted that while these activities do not require a state floodplain permit, other state, county or local permits might still be required.

DO I NEED A STATE FLOODPLAIN PERMIT TO INSTALL A CULVERT IN A DESIGNATED COUNTY DRAIN?

If the drainage area of the county drain is 2 square miles or greater, and the culvert is not being installed under the authority of Act 40 of the Michigan Drain Code, a permit will be required from the DEQ under Part 31.

THE RUNOFF FROM MY NEIGHBOR'S PROPERTY IS CAUSING FLOODING PROBLEMS, WHAT CAN I DO?

The runoff from individual lots is considered a local drainage issue. You may want to talk with your neighbor to see if there is something that can be done to remedy the problem. You may also want to contact the community to see if there is assistance that can be provided by the community or the county. In some instances, the only remedy is through the court system to try to correct the situation.

Following are some answers to questions pertaining to the National Flood Insurance Program, a more detailed list of questions and answers may be found by clicking [here](#).

WHAT IS THE NATIONAL FLOOD INSURANCE PROGRAM (NFIP)?

The NFIP is a federal program enabling property owners to purchase flood insurance. The federal government makes flood insurance available to communities that agree to enforce requirements that will reduce future flood losses to new construction within the special flood hazard area (100-year floodplain). The NFIP came about following many years and billions of dollars spent on constructing dams, levees, and sea walls to try to reduce flood losses, only to see flood losses continue to rise.

The goal of the NFIP is to mitigate future flood damages by requiring proper construction methods, and to provide a method of insuring against damages due to flooding.

I HAVE HOMEOWNERS INSURANCE, DOES THAT COVER DAMAGE DUE TO FLOODING?

Home owners insurance does not include damage due to flooding. Flood insurance is only available through the [National Flood Insurance Program](#).

WHERE CAN I PURCHASE FLOOD INSURANCE?

Flood insurance is available only within communities that participate in the National Flood Insurance Program (NFIP). If your community participates in the NFIP, any licensed insurance agent can sell flood insurance, if they choose to. You may want to check with insurance agent that handles your homeowners policy. The flood insurance rates are set by the Federal Insurance Administration, and should not vary from agent to agent.

HOW CAN I FIND OUT IF MY COMMUNITY (CITY, VILLAGE, OR TOWNSHIP) PARTICIPATES IN THE NFIP?

You may want to contact your community, contact the [DEQ](#), or obtain a National Flood Insurance Program [community status list](#) from the FEMA website.

WHY DO I HAVE TO BUY FLOOD INSURANCE?

Under the National Flood Insurance Program Reform Act, if a building securing a loan is located within a federally identified special flood hazard area (100-year floodplain), and the lender is federally regulated, supervised or insured, flood insurance must be required as a condition of the loan. Under the Act, if the lender makes a loan on a structure that is in the special flood hazard area and does not require the flood insurance, they will be subject to fines.

WHAT IS A SPECIAL FLOOD HAZARD AREA?

The Special flood hazard area is another term for the 100-year (1% chance) floodplain. The Federal Emergency Management Agency (FEMA) has published [Flood Insurance Rate Maps \(FIRMs\)](#) which identify special flood hazard areas throughout the United States. Within Michigan there are floodplain maps published for about 750 communities.

MY COMMUNITY DOES NOT HAVE A FLOOD INSURANCE RATE MAP, DOES THAT MEAN THERE NO FLOODPLAINS IN THIS COMMUNITY?

If community does not have a flood insurance rate map, it means that there are currently no federally identified special flood hazard areas in the community. There would be no federal mandatory flood insurance purchase requirements as a condition of a loan. However, there is a floodplain associated with every river, lake, stream, or drain, even if it has not been identified by the FEMA. It is possible that a flood insurance rate map could be published at a later date. If you are considering purchasing property close to a watercourse, you may want to talk with local, county and state officials to determine if the area may be prone to flooding, and if there are any building restrictions or permit requirements. At the state level, you should contact the [DEQ district floodplain engineer](#).

HOW DOES A COMMUNITY JOIN THE NATIONAL FLOOD INSURANCE PROGRAM?

Flood Insurance is available only in a community that participates in the National flood Insurance Program. Because of the state laws and building codes in effect in Michigan, every community meets the minimum requirements to participate in the NFIP. To join the NFIP, a community would have to pass a resolution indicating they would like to join, pass a resolution directing the building official to strictly enforce the flood resistant construction standards of the building code, and submit the application. In some communities, the county does the building inspection. In those communities, an agreement must be signed by the county and the community

indicating building inspection is provided by the county. There is no fee or cost associated with joining the NFIP. There would be record keeping requirements for new construction within the floodplain.

Questions on joining the NFIP may be addressed to the DEQ.

MY LENDER SAYS I HAVE TO PURCHASE FLOOD INSURANCE BECAUSE MY HOUSE IS IN THE FLOODPLAIN (SPECIAL FLOOD HAZARD AREA), HOW CAN I PROVE THAT I AM NOT IN THE FLOODPLAIN?

To demonstrate that your house is not in the floodplain, the first thing is to get a copy of the Flood Insurance Rate Map (FIRM) for your community. If your house is shown to be within the special flood hazard area on the map, the lender must require the purchase of flood insurance. If only a portion of your property is within the floodplain, but the house is not in the floodplain, there are no federal requirements for the purchase of flood insurance. If you feel that the FIRM does not show your house to be within the special flood hazard area, you should contact your lender to make sure that they have correctly located your property and your house.

If the house is shown to be within the floodplain on the FIRM, the only way to remove the flood insurance purchase requirement is to apply to FEMA for a letter of map amendment (LOMA). A LOMA requires that the property owner submit elevation information that demonstrates that the structure is above the 100-year flood elevation. The elevation certificate and the LOMA application can be downloaded from FEMA's website. These forms are also available from the local DEQ office or the Lansing DEQ office at 517-241-1515.

If the house was constructed before the date of the FIRM, it would have to be shown that the lowest ground elevation next to the house is above the 100-year flood elevation. If the house was constructed after the date of the FIRM, it would have to be demonstrated that the lowest ground elevation next to the house, and the lowest floor elevation (including basement) are above the 100-year flood elevation.

If you have questions on the LOMA process, you can also call the FEMA's toll-free help line at 1-877-336-2627.

MY INSURANCE AGENT SAYS I CANNOT BUY FLOOD INSURANCE BECAUSE I LIVE IN THE FLOODPLAIN, IS THIS TRUE?

Another common false statement that is received is: "my insurance agent said I could not buy flood insurance because I do not live in the floodplain". Actually, neither statement is correct. Flood insurance is available to any resident of a community that participates in the National Flood Insurance Program. It does not matter if you live in or out of the floodplain (special flood hazard area). However, the rates for the flood insurance are higher for property that is within the special flood hazard area (100-year floodplain).

HOW MUCH DOES FLOOD INSURANCE COST?

The cost of flood insurance varies depending on how much is being insured, when the house was built, if the house has a basement, and the elevation of the lowest floor of the house.

If the house was built before the date of the existing flood insurance rate map, it qualifies for a subsidized rate. For \$100,000 worth of structural coverage for a house with a basement in the 100-year floodplain, built before the date of the map, the coverage would cost about \$700/year.

If that same house did not have a basement, and if the lowest floor elevation were 1 foot above the 100-year flood elevation, the insurance rate for \$100,000 worth of structural coverage would fall to about \$320/year.

If the house is located outside of the 100-year floodplain, the insurance rate would be about \$241/year, for \$100,000 worth of structural coverage, and would include \$25,000 worth of contents coverage.

You may want to talk with your insurance agent, to discuss your particular situation.

MY HOUSE IS LOCATED IN FLOOD INSURANCE ZONE X (OUTSIDE OF THE 100-YEAR FLOODPLAIN), DO I HAVE TO BUY FLOOD INSURANCE?

Federal mandatory flood insurance purchase requirements only apply to houses located within the 100-year floodplain. Zone X (or on some of the older flood insurance rate maps zones B and C) is outside of the 100-year floodplain. Flood insurance is available in zone X at a lower rate, but there are no federal requirements for the purchase of flood insurance as a condition of a loan. If the flood insurance is being required on a house in zone X as a condition of a loan, it is at the individual lender's discretion, another lender may not require flood insurance.

It should be noted that about 40% of the flood insurance claims occur outside of the 100-year floodplain. Even though a house may not be located in the 100-year floodplain, there is no guarantee that it will not flood.

MY COMMUNITY HAS A FLOOD INSURANCE RATE MAP, BUT NO LONGER WANTS TO PARTICIPATE IN THE NFIP, CAN THE COMMUNITY DROP OUT OF THE NFIP?

A community can withdraw from the National Flood Insurance Program at any time by simply passing a resolution, and notifying FEMA of their desire to drop out of the NFIP.

However, before dropping out of the NFIP, a community must consider the ramifications:

- When a community drops out of the NFIP, flood insurance is no longer available within the community.
- Without flood insurance, lenders will not make a federally insured, regulated or supervised loan on a property that is in an identified special flood hazard area.
- If there are existing loans within the special flood hazard areas, lenders may be forced to call the loans due, as flood insurance can not be purchased.
- Federal money cannot be used within the special flood hazard area.
- In the event of a presidential disaster declaration, federal money will not be available for repair of buildings in the special flood hazard area.

IF I WANT TO PURCHASE FLOOD INSURANCE, IS THERE A WAITING PERIOD?

Once you apply for flood insurance, there is a 30-day waiting period. The exception to the waiting period would involve new real estate transactions, when title is being transferred. Flood Insurance would become effective once the title is transferred.