

# The National Flood Insurance Program

## Background

Until the mid-1960s the federal government's response to the floods that struck various parts of the country was to fund the construction of levees to prevent flood damage and provide disaster relief to victims when damage occurred. An example is the Great Mississippi Flood of 1927. In that year the Mississippi River broke out of its levee system in 145 places and flooded 27,000 square miles. This water flooded an area 50 miles wide and more than 100 miles long. The area was inundated up to a depth of 30 feet. The flood caused over \$400 million in damages and killed 246 people in seven states. In response, the federal government assisted in the operation of 154 refugee camps set up throughout the country by the American Red Cross to house nearly 325,000 people forced from their homes and began the construction of a new system of dams, levees and spillways along the length of the lower Mississippi.

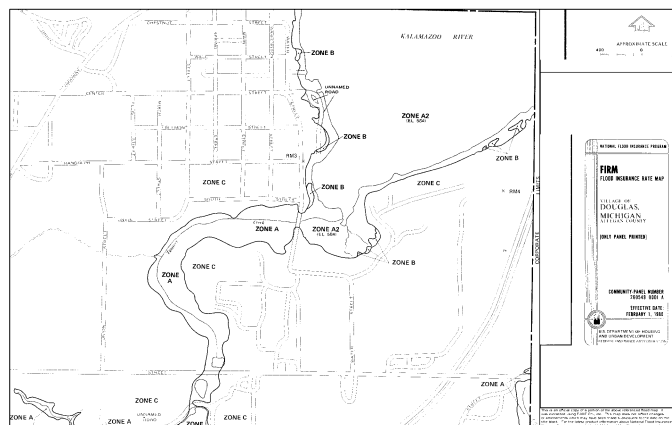
In the 1950s studies were conducted on the feasibility of a national flood insurance program. It was determined that the private insurance system could not provide insurance at rates that were both profitable and affordable. As a result of flooding caused by Hurricane Betsy in 1965, the Congress passed the Southeast Hurricane Disaster Relief Act, which included authorization of a feasibility study of a national flood insurance program. In 1968 the National Flood Insurance Program was passed. The law was designed to:

- Better indemnify individuals for flood losses through insurance;
- reduce future flood damages through state and community floodplain management regulations; and
- reduce federal expenditures for disaster assistance and flood control.

The program had three parts:

- The federal government would map areas that were prone to flooding (Special Flood Hazard Areas or SFHAs)
- The federal government would establish standards that new construction would be required to comply with in the SFHA to mitigate future flood damage and which local units of government could adopt
- If local units of government adopted and enforced the standards, flood insurance would be made available to the property owners in the community

The standard established for the SFHAs was an area with a 1% per year chance to flood, also referred to as the 100 year flood or the base flood. The maps produced to identify the SFHA are Flood Insurance Rate Maps (FIRMs). They are based on elevation data of the land adjacent to the river, stream, drain or lake and the estimated height of the waters during a base flood, referred to as the Base Flood Elevation (BFE). In addition, some communities also have had the 100-year floodway mapped. This is the channel of a



river, stream or drain plus any adjacent floodplain areas that carries the waters of a base flood downstream and must be kept free of obstructions in order to prevent an increase in size of the floodplain.

Initial participation by communities and property owners within those communities was less than anticipated. By the early 1970s only 2,200 communities participated in the NFIP and only 95,000 policies had been issued. When reports on relief efforts from Tropical Storm Agnes in 1972 demonstrated the lack of participation, Congress acted by amending the NFIP. The amendments prohibited federal agencies from providing certain types of financial assistance, including disaster assistance for any community with an identified SFHA that did not participate in the NFIP. It also prohibited federal agencies and federally insured or regulated lenders from approving any grants or loans for acquisition or construction of buildings in identified SFHAs unless flood insurance was acquired and maintained. As a result of these changes, participation by communities and property owners increased and by 1997 there were 15,000 communities participating and 1.2 million policies in place.

In 1994 the act was amended again. Two significant provisions were the codification of the Community Rating System which provides benefits to policy holders if their local municipality implemented additional steps to mitigate damage from flooding and a requirement that FEMA assess its flood hazard maps at least once every five years.

### **The NFIP Concept**

The NFIP was designed to replace the federal government's reactive method of addressing flooding disasters with a proactive one. By mapping the floodplains the federal government would identify the areas of potential flooding hazards. By requiring local communities in these areas to adopt and enforce flood mitigation regulations, the potential damage to new buildings built in the flood-prone areas would be reduced. By ensuring that property owners in the flood-prone areas who chose to build or expand in flood-prone areas carried flood insurance, and by setting rates appropriately, the program shifted the cost of flood relief from the federal government to the property owners. For property owners of structures built before the SFHAs were identified, the program subsidized the cost of their flood insurance, with the expectation that these structures would eventually be eliminated through normal wear and tear. The intention was for a system that prevented inappropriate development within floodplains and was funded by the property owners who chose to build within the floodplain.

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The goals have not been completely reached to date for several reasons:

- Participation within identified SFHAs is relatively low. The reasons for this include lax enforcement in the past of participation requirements by lenders and the fact that not all buildings are covered by a mortgage from a federal agency or from a federally insured or regulated lender.
- The number and extent of flood hazard areas have not been completely mapped. Increases in impervious surface within a given drainage basin can increase the rate of floodwater discharge and increase the size of a floodplain. It has been predicted that global warming will increase the intensity of rain events, which would have the effect of increasing the SFHA in impacted areas. Due to mapping priorities, smaller and less developed areas have not been mapped to date.

- The buildings that existed at the time the SFHAs were mapped are not being reduced as quickly as was hoped and new ones are continuing to be added as new SFHAs are being mapped and old ones being amended. This means that the number of subsidized buildings is not being reduced as much as initially hoped.

## NFIP in Michigan

As a state comprised of two peninsula and many rivers, streams, lakes, and drains flooding is a concern. The Michigan Department of Environmental Quality (MDEQ) website estimates that about 6% of Michigan's land is flood-prone, including about 200,000 buildings.

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The State of Michigan's Floodplain Regulatory Authority, found in Part 31, Water Resources Protection, of the Natural Resources and Environmental Protection Act (NREPA), 1994 PA 451, as amended, requires that a permit be obtained prior to any alteration or occupation of the 100-year floodplain of a river, stream or drain.

Coordination between FEMA and local communities is the job of the MDEQ's NFIP Coordinator. The coordinator works with local units of government to assist them in meeting the NFIP requirements. This is carried out through a program of education, technical assistance, and oversight. In addition, assistance is provided to lenders, realtors, and insurance agents, as well as private citizens who have questions about flood insurance or floodplain management.

Michigan has seen significant participation in the NFIP. As of August 12, 1998, there were 26,374 flood insurance policies in the state, providing coverage in the amount of \$2,305,979,400. Since 1978, Michigan flood insurance policy holders have been paid over \$28,000,000 for flood losses.

## The National Floodplain Map Update

As noted above, in 1994 the NFIP law was amended to require a review of the floodplain maps at least every five years. In 1997 FEMA developed a plan for a comprehensive update to take place over seven years. The goals of the project included:

- Converting existing maps to a digital format
- Incorporating updated detailed flood data through studies and restudies for approximately 4,700 communities with inadequate floodplain mapping
- Develop flood map for approximately 2,700 flood-prone communities without flood maps
- Improving customer service to make the maps easier to obtain and use, including electronic and digital printing and distribution

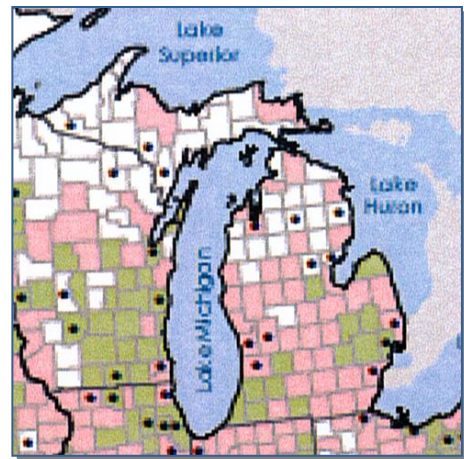
Funding for the Map Modernization project was not secured until 2003. By 2009 a majority of the work had been completed, but mapping work in some parts of the country continue. In the meantime, the project was superseded by the Risk MAP program, which intends to focus future map updates in the areas of greatest risk.

In Michigan, the Map Modernization program focused initially on the urban counties with the greatest flooding risk. Unlike the previous efforts that were undertaken on a municipality-by-municipality basis, these studies were undertaken at the county level and the new maps are being made available by county. The steps in the process have been:

- Preliminary mapping of flood hazard areas conducted
- Preliminary maps distributed to local municipalities in the county for review, followed by public meetings with FEMA and MDEQ staff to discuss map issues
- Public comment period
- Publication of notice of adoption of revised maps in Federal Register
- Six month period for communities to adopt/readopt maps

The Map Modernization program has created some concern and confusion at the local level in Michigan. Communities that previously had no flood-prone areas mapped under the NFIP were added under the project. In some communities that were already part of the program, the new maps added additional property to the SFHAs, including property owners who had never been required to participate in the program before.

Several counties are going through the map adoption process in 2011 including Alpena, Cheboygan, Clare, Clinton, Eaton, Gratiot, Ingham, Iosco, Isabella, Kent, Mason, Monroe, Newaygo, Oceana, Osceola, Roscommon, Saginaw, Shiawassee, Tuscola and Wayne counties. The Map Modernization Program is expected to wrap up in Michigan in 2012 with map adoption in Allegan, Charlevoix, Chippewa, Grand Traverse, Leelanau, Lenawee, Marquette and Mecosta counties.



### **Administering the NFIP Locally in Michigan**

Communities that enroll in the NFIP agree to adopt and enforce restrictions on construction with the SFHAs identified by FEMA on their maps. These restrictions regulate new construction within the SFHAs, prohibit new construction within the floodway, and require flood-proofing measures in certain circumstances. When the program was first established, many communities adopted the floodplain management regulations into their zoning ordinances. But after the establishment of the NFIP, the minimum standards required under the program were incorporated into most standard building codes. The State of Michigan's building code, which is enforced in every municipality in the state, includes those minimum standards. Therefore, all communities in the state comply with the NFIP's requirement for adopting and enforcing these minimum FEMA standards. Communities that want to enforce more restrictive standards, such as a prohibition of any new construction within the SFHA, can do so by adopting those standards in their zoning ordinance or a separate floodplain ordinance. Otherwise, such ordinances are an unnecessary duplication of regulations.

Minimum required local regulation of the NFIP in Michigan consists of enforcing the building code, maintaining a record of all permits issued for structures within the floodplain for a bi-annual report to FEMA, and making floodplain information available to the public. Many communities exceed these minimum requirements through local building, zoning and planning efforts, but these efforts are at their discretion.

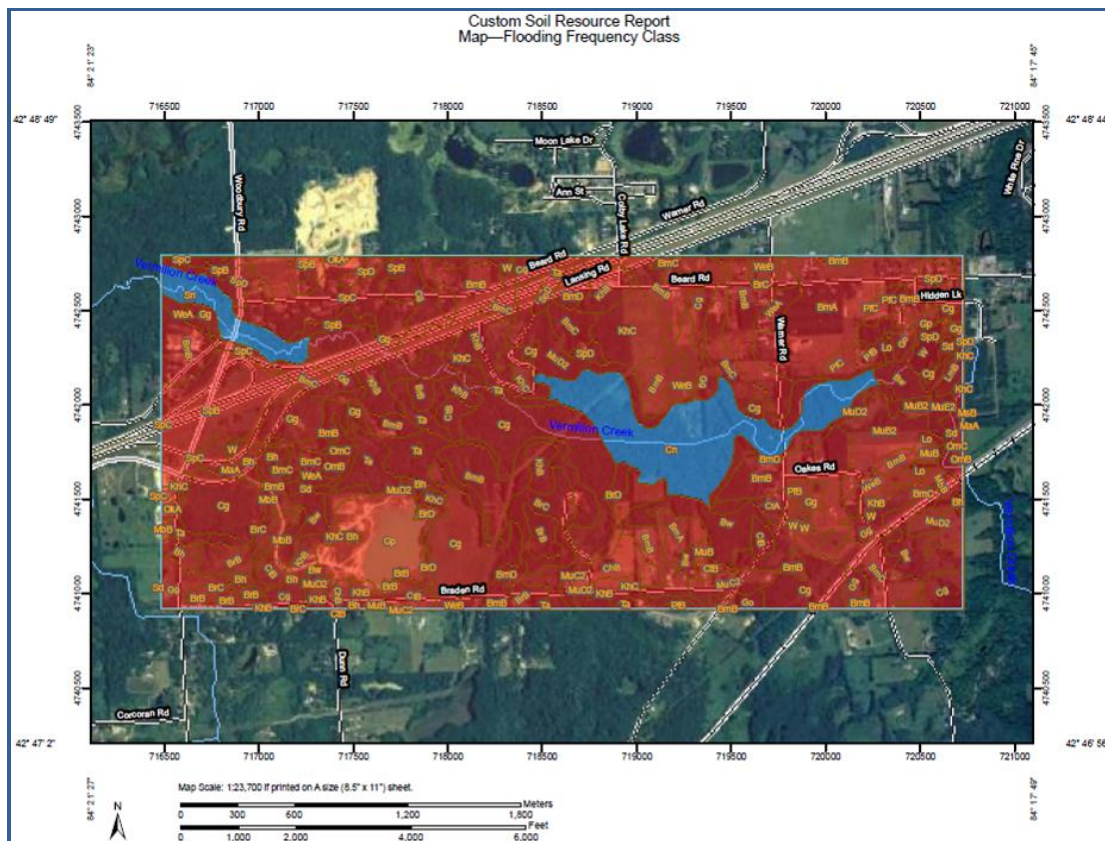
One area that some communities get involved as part of the local administration of the NFIP is providing information to property owners interested in getting their property out of a SFHA. The most common approach is through the Letter of Map Amendment (LOMA). Because the NFIP guidelines only apply to structure(s) located below the base flood elevation, property owners whose property is shown on a

FIRM as within the SFHA, but whose structure(s) is above the 100-year flood elevation either due to inaccuracies in the FIRM, local variations in elevation or because the property was built up prior to construction, can apply to have the structures removed from the FIRM. They are required to provide elevation data on the structures along with an application to FEMA. Despite the name, the approved LOMAs are not actually reflected in a change in the FIRM, but are simply notes appended to the FIRM record.

### Using Floodplain Data for Local Planning

A basic tenant of planning is to integrate limitations imposed by natural features into future land use considerations. Many communities with identified SFHAs include that information in their master plan with the intention of limiting future development of these areas in order to limit the damage caused by future floods.

One point to keep in mind is that the SFHA maps show only a portion of the total floodplains in the state. There are many communities, primarily rural, that have rivers, streams or drains running through them but do not have floodplains identified by FEMA. It does not mean that flooding does not occur, but that the potential threat to the current population was not high enough to warrant the cost of a study to identify it. Communities in that situation may use other data to help identify potential floodplains. One source is the MDEQ that has data on floodplain elevations in many areas of the state. In addition, the Natural Resource Conservation Service’s soil survey can be used to identify potential floodplains. A characteristic of the soils identified in the survey is “flooding frequency”. Using the NRCS’s web-based GIS, maps can be generated showing areas with high flooding frequency.



Another point in considering the issue of flood prevention is that NFIP regulations are intended to minimize loss from flooding within the currently identified floodplain and prevent increases in the size of the floodplain from construction within the floodplain or floodway. Increases in the size of the floodplain are often the result of development far from the river, stream, drain or lake impacted. Addressing increases in impervious surface and the lack of flood retention in new developments are approaches that can have significant impact on future flooding in the municipality and should be given consideration for local communities in their efforts to address future flooding.

### **The Community Rating System**

As was noted above, many municipalities have chosen to go beyond the minimum actions required under the NFIP to limit losses from flooding for many reasons. The Community Rating System is a program designed to recognize these efforts and encourage them. The system works similar to the rating system in local communities for fire insurance. Under that program, if a community takes actions to improve its ability to fight fires such as a full-time fire department, the cost for insurance for property owners is reduced. In the same way, if a community takes certain actions that are expected to reduce losses from flooding, the homeowners' premium rate for flood insurance drops.

There are 10 CRS classes: Class 1 requires the most credit points and gives the greatest premium reduction; Class 10 receives no premium reduction. A community that does not apply for the CRS, or does not obtain the minimum number of credit points, is a Class 10 community

The CRS Schedule identifies 18 creditable activities, organized under four categories:

- Public Information – These are activities that advise people about the flood hazard, flood insurance, and ways to reduce flood damage. They also provide data needed by insurance agents for accurate flood insurance rating.
- Mapping and Regulations – These credits are given for programs that provide increased protection to new development. These activities include mapping areas not shown on the FIRM, preserving open space, enforcing higher regulatory standards, and managing storm water. The credit is increased for growing communities.
- Flood Damage Reduction – These credits are for programs that reduce flooding threats for existing development. Credit is provided for a comprehensive floodplain management plan, relocating or retrofitting flood-prone structures, and maintaining drainage systems.
- Flood Preparedness – This series credits flood warning, levee safety, and dam safety programs.

The CRS Schedule assigns credit points based upon the extent to which an activity advances the goals of the CRS. Communities are allowed to propose alternative approaches to these activities in their applications.

Because the program benefits property owners that participate in the NFIP, it is understandable that communities with a high number of property owners with flood insurance are more likely to participate in the program. In 2002 only 900 (6%) of the 15,000 NFIP communities participated in the CRS program, but these communities accounted for over 66% of the active flood insurance policies.

As the number of properties in a community's SFHA required to obtain flood insurance increases due to changes in the SFHA boundary and/or increased enforcement of mandatory purchase requirements, communities may find it appropriate to look at some of the "low hanging fruit" in the CRS Schedule to see if they might qualify for a Class 9 (5% premium reduction) or Class 8 (10% premium reduction)

designation. Even for those municipalities that do not wish to go to the time and expense of obtaining an upgraded designation, the CRS Schedule is a good source of ideas for communities looking for potential floodplain mitigation activities.

## Resources

### ***MDEQ***

The MDEQ's Floodplain Management /National Floodplain Insurance website is a great site for all kinds of info on the states management of the NFIP program and resources for local communities including requests for floodplain elevations, the LOMA process, contact information for MDEQ staff and links to related sites. [www.mi.gov/floodplainmanagement](http://www.mi.gov/floodplainmanagement)

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### ***FEMA – National Flood Insurance Program***

The Federal Emergency Management Agency's National Flood Insurance website is the agency's gateway to all of their NFIP resources. Below are some specific links to sites that are very useful.

[www.fema.gov/plan/prevent/floodplain/index.shtm](http://www.fema.gov/plan/prevent/floodplain/index.shtm)

#### **FEMA Map Service Center**

The Map Service Center provides a source for FIRM maps, including an on-line ordering option. In addition, it allows for the creation of "firmettes", free customized maps or portions of a FIRM, which is perfect for the property owner or staff person trying to get info on a particular piece of property.

<http://msc.fema.gov/webapp/wcs/stores/servlet/FemaWelcomeView?storeId=10001&catalogId=10001&langId=-1>

#### **Community Rating System Documents**

This site includes manuals, worksheets, and application information for the CRS program

<http://training.fema.gov/EMIWeb/CRS/>

#### **NFIP Publications**

This site includes order forms, brochures, information sheets, booklets and other material on the NFIP, including the booklet *Answers to Questions About the NFIP*, a 70-page manual in a question-answer format that addresses most of the questions I have heard asked about the program. <http://www.fema.gov/business/nfip/libfacts.shtm>

#### **FloodSmart.gov**

Listed as the "official site of the NFIP" the website deals more with insurance for the property owner than regulation and planning for municipalities.

[http://www.floodsmart.gov/floodsmart/pages/preparation\\_recovery/pr\\_overview.jsp](http://www.floodsmart.gov/floodsmart/pages/preparation_recovery/pr_overview.jsp)

### **NFIP Community Status Book**

This site provides access to a state-by-state report on the status of all municipalities in the state that are, or have been in the program, and those communities that have identified SFHAs but are not currently participating. If you're wondering about your community's status, this is the place to go. <http://www.fema.gov/cis/MI.html>

### ***Michigan Stormwater – Floodplain Association***

This statewide association is 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 the state's floodplain and stormwater management systems. It includes an interesting paper on floodplain mapping issues in Michigan and a video on a very interesting stormwater floodplain simulator developed by one of their members and an Okemos High School science teacher. <http://mi.floods.org/>

### ***The USDA Natural Resource Conservation Service Web Soil Survey***

This site has a range of uses for planners, but its particular value with regards to floodplain mapping is its data on flooding frequency for areas not covered by a FIRM, which can be accessed by:

1. zoom in to your community
2. select an "Area of Interest" (it cannot exceed 10,000 sq. ft. so you can't do an entire township at once) using one of the "AOI" buttons on the tool bar
3. click on the "Soil Data Explorer" tab at the top
4. click "Soil Properties and Qualities" tab on the lower set of tabs
5. click "Water Features" on the left hand column
6. select "Flooding Frequency Class "
7. click "View Rating"
8. to get a pdf of the map and report click on either "Printable Version" or "Add to Shopping Cart" (it's free)

<http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>