

Flood News for Michigan Floodplain Managers

A Newsletter of the
Water Resources Division
Michigan Department of Natural Resources and Environment
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2011 MSFA Conference

The Michigan Stormwater-Floodplain Association (MSFA) 2011 conference is scheduled, and the planning is well underway. The dates are set for March 8-11 and will be held at the DoubleTree Hotel in Dearborn, at 5801 Southfield Expressway. The program itinerary is oriented toward urban stormwater and floodplain management especially related to the Dearborn/Detroit metropolitan needs, practices, and resolve. The Certified Floodplain Manager program will be supported by the availability of a refresher and the setting of the exam. Training/refresher sessions and exam setting will be provided for the stormwater industrial program.

Play to Learn

From Bible stories to modern-day disaster movies, humans have always had a fear of and fascination with floods. Few acts of nature match the power of floods, which have been known to wash away entire cities and permanently alter landscapes. In the United States, the average annual cost of flood damage is over \$4 billion, with about 35 lives lost each year.

Now, professionals can test and improve their understanding of how flooding affects their communities with FloodManager, a serious game designed to stimulate thinking about how to mitigate the damage flooding can cause. The

game, developed with funding from the Association of State Floodplain Managers (ASFPM) Foundation, places the player in the very situation most community leaders face – dealing with past development decisions that were implemented before their time, often before any floodplain regulations existed.

Careful planning and intelligent use of available budgets can help such decision makers mitigate against the inevitable encroaching flood as the available real estate and resources needed to sustain the community become scarce. To see the game, go to <http://www.floodmanager.org>.

The Flood Insurance Committee's Corner

(from the ASFPM News and Views June 2010 edition)

LOMA Out as Shown – A User's Guide

At the recent Flood Insurance Committee meeting at the ASFPM's annual conference in Oklahoma City, one of the points of discussion was the LOMA – Out As Shown (LOMA-OAS). This column summarizes that discussion for those who were unable to attend.

A recent survey by the National Flood Determination Association (NFDA) of its members confirms what many of us have suspected since the beginning of the Map Modernization process: when new FIRMs become effective, about the same number of structures are being taken out of the mapped floodplain as are being included within the floodplain.

Good news for some, not so good for others. There are many options for property owners who believe that they have been incorrectly mapped in the Special Flood Hazard Area (SFHA), but perhaps the most effective—and least utilized—is the LOMA-Out as Shown (LOMA-OAS).

As many local officials will tell you, even though they have more accurate data that demonstrates that a property is out of the SFHA, many lenders will only accept official documents from FEMA for purposes of lifting the mandatory flood insurance purchase requirement.

A traditional LOMA (form MT-EZ) is certainly an acceptable method, since it establishes the actual lowest adjacent grade around a structure and is certified by a Registered Land Surveyor. For many properties, however, the time and expense involved with a traditional LOMA is not necessary. If the property owner or the community has reliable documentation clearly demonstrating that the structure (or building site) lies outside of the SFHA, the LOMA-OAS is in most cases the quickest and cheapest way to remove the mandatory purchase requirement.

The LOMA-OAS is a document issued by FEMA that officially shows that a property and/or structure is not located in the SFHA. To obtain a LOMA-OAS, the applicant must submit mapping and survey data for the property, much of which is available from the municipality in which the property is located (e.g., the City Hall, County Courthouse).

Remember; only use this method if it is clear, visually, that the structure/building site is not in the SFHA.

Applying for a LOMA-OAS

To obtain a LOMA-OAS, the applicant must provide information to locate the property and/or structure on the FIRM. There is no fee for FEMA's review of a LOMA-OAS request, but the applicant is responsible for providing all of the information needed for FEMA's review.

The following items should be submitted in support of all LOMA-OAS applications.

(1) A copy of a recorded plat map for the property or a copy of the recorded deed for the property and a copy of the local tax assessor's map of the neighborhood in question (or other map that shows property lines, local roads, and watercourses).

(2) A completed MT-EZ application form with "out as shown" written at the top.

This form is available on the FEMA website (<https://www.fema.gov/mt-ez-form-instructions>). Write in "OAS" after the word LOMA in the fourth box down from the top. In the next box down, answer question 1 as "No." Under question 2 write "See Attached." Under question 3 check the third box "A structure on your property? What is the date of construction?" and write "N/A LOMA-OAS" at the end of the question. Fill out the last box on page one of Section A. Write "OAS" after "Structure located on natural grade (LOMA)." Write "OAS" after "Legally recorded parcel of land or portion thereof (LOMA)." Fill out the rest of the form as appropriate.

(3) A FIRMette, created at <http://www.msc.fema.gov>. For information on how to create one, click on "FIRMette Tutorial" at the bottom of the screen.

The issuance of a LOMA-OAS eliminates the federal flood insurance purchase REQUIREMENT as a condition of obtaining federal or federally backed financing. However, the mortgage lender retains the prerogative to

require flood insurance as a condition of providing financing, regardless of the location of the structure. The property owner also needs to be reminded that there is still a risk of the property's being flooded; it has been just reduced, NOT REMOVED.

If you have questions about the use of the LOMA-OAS form, you can call 1-800-FEMA MAP (877-336-2627). For an example of the easy procedures for completing a LOMA-OAS, we have placed on our Insurance Committee web page a copy of directions with illustrations that Steve Samuelson, CFM, and Alicia Benson (Kansas Department of Agriculture, Division of Water Resources) use to help applicants complete the form. If you have any comments that you would like to share about LOMA-OAS, please email us at

InsuranceCorner@floods.org

—
Your Humble Insurance Committee Co-Chairs

Gary Heinrichs and Bruce Bender

This column is produced by the ASFPM Insurance Committee.

Send your questions about flood insurance issues to InsuranceCorner@floods.org and they will be addressed in future issues of the newsletter.

FEMA NFIP Highlights

SUBJECT: Extension of Preferred Risk Policy Eligibility Effective January 1, 2011, for Buildings Affected by Map Changes On or After October 1, 2008

FEMA is revising its Preferred Risk Policy (PRP) eligibility. Effective January 1, 2011, owners of buildings newly designated in a Special Flood Hazard Area following a flood map revision on or after October 1, 2008, may be able to maintain the lower cost PRP for two years following the effective date of the map change. Please see the attached documents for more details on this change and the implications for policyholders and insurers:

SUBJECT: FEMA is introducing a new "Risk Rating Method" indicator.

FEMA is introducing a new "Risk Rating Method" indicator on the Transaction Record Reporting and Processing (TRRP) Plan to identify policies newly issued or renewed as a PRP under the 2-year PRP eligibility extension beginning January 1, 2011. Related changes to the TRRP Plan and Edit Specifications will be provided separately.

We appreciate your support and assistance to help us improve the NFIP and get more Americans covered by flood insurance. If you have any questions, please contact Jhun de la Cruz at (202) 212-4714.



What Should New FEMA Flood Maps Mean for Citizens?

Some floodplain facts first:

- All waterbodies have a floodplain even if not shown on a FEMA flood map
- Floodplains are natural features not necessarily obvious to see
- Floodplains vary in size due to many factors (topography, precipitation, human actions)
- Floodplains are three dimensional
- Floodplains have associated hazard risks when attempts are made to use them for purposes other than those for which they are designed (Mother Nature's flood storage area).

Now, knowing these facts about floodplains, wouldn't it be nice to have available a resource that could help define a floodplain in a particular area of interest, such as lot #23 on the south shore of Favorite Creek in Get Away Bend Development where you are contemplating a major real estate investment for your ideal home? Well, that is exactly how the FEMA digital flood insurance rate maps (DFIRMs) assist, if FEMA mapped your community. The DFIRMs are a resource tool for citizens and community officials alike to use for many purposes in the community.

In addition to the DFIRMs being used by individual citizens and community officials they are also an important and required resource for lenders to use in the mortgage industry. The NFIP and other banking regulations require federally regulated lenders to determine if the mortgage collateral is located in the 1 percent chance special flood hazard area as shown on the effective FEMA DFIRM before a mortgage is issued. If such a structure is shown to be in a high risk flood area then obtaining and maintaining a flood insurance policy becomes a mortgage condition for new and existing mortgages.

Today's modernized (digitally based) flood maps are developed using air photography base layers allowing structure locations to be more easily and accurately identified with respect to the floodplain boundaries. The floodplain boundaries are calculated through accepted engineering, geography, GIS, and mapping industry methods to show flood hazards within the community in relationship to best available topographical information for the area. It is important to keep in mind that more accurate topo data will result in more accurate representations of the flood zone areas on the maps.

New FEMA DFIRMs can assist citizens in making risk based land use and transactional decisions (building location, zoning, purchasing, and selling) regarding real estate and development actions in areas near waterbodies or low drainage areas within a watershed. For all communities participating in the NFIP, the DFIRMs are a resource information tool to be made available by the local community at an identified community location for public use.

The DFIRMs show flood risk levels that become the basis for application of the National Flood Insurance Program (NFIP) and for local development regulations. The placement of the high risk A Zone shaded areas on a DFIRM does not mean that all floodplains have been identified or that the land area defined by the shading is the only area that has a high risk level of being flooded. Federal funding limitations controlled how much time and effort was expended for each county wide study such that only higher priority land areas were usually studied for any county wide study.

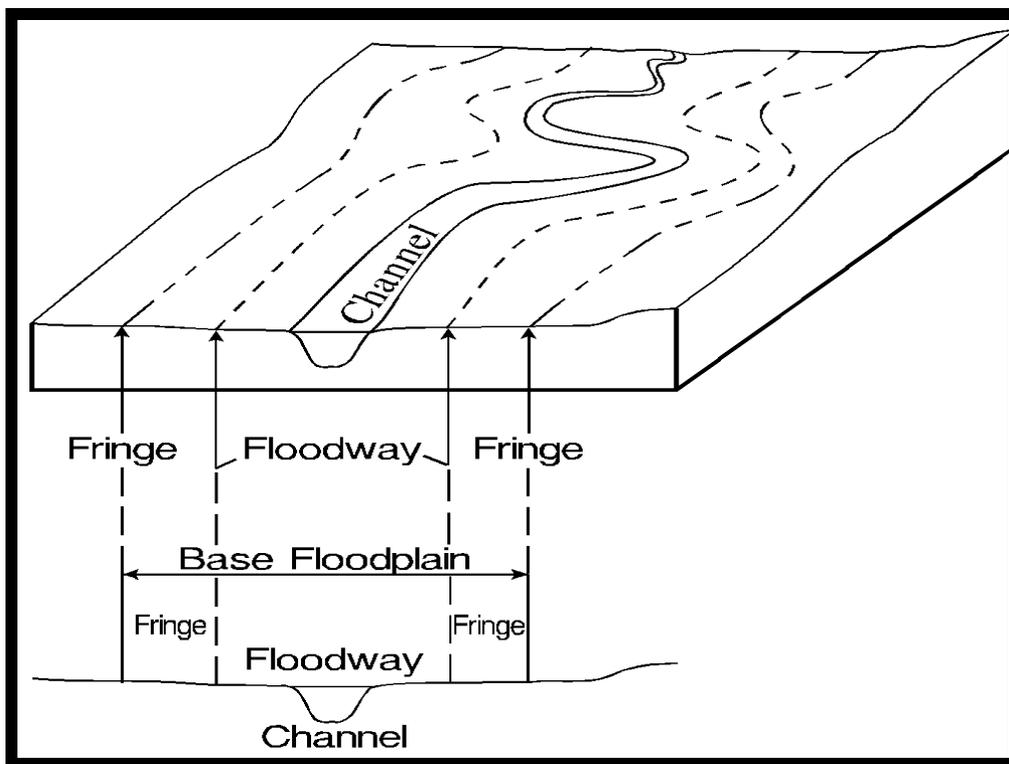


Questions and Answers

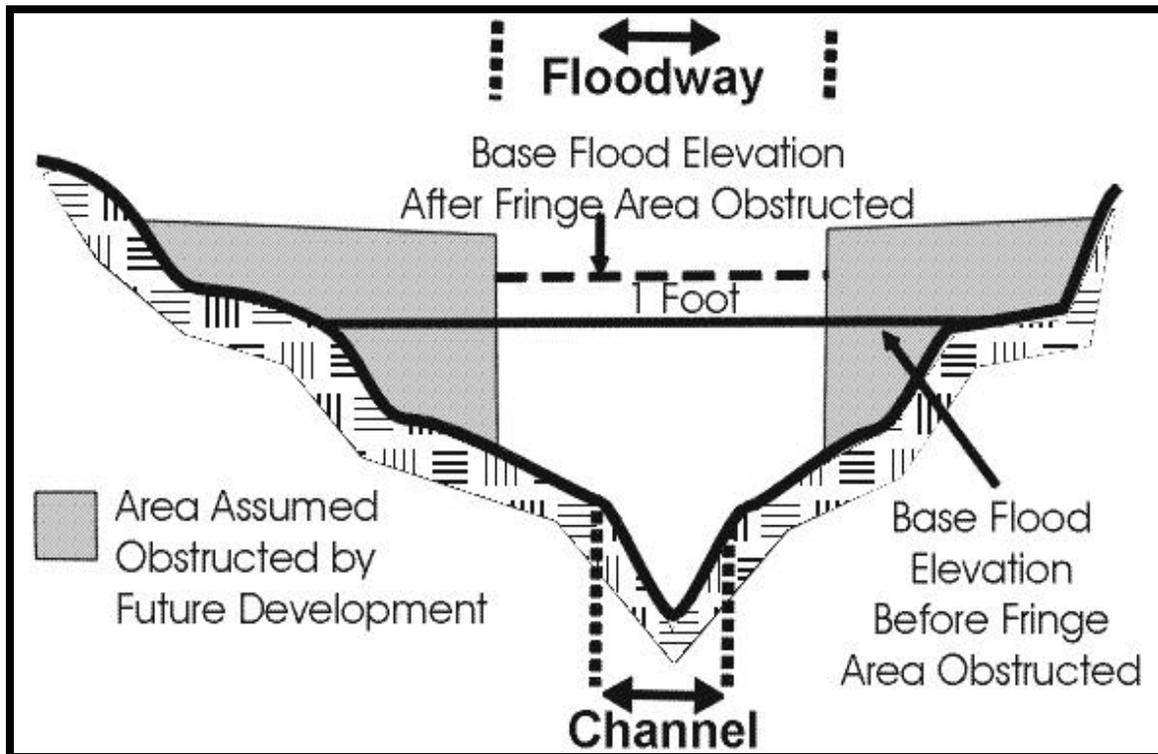
Question: What is a floodplain? Is it one thing or several things together?

Answer: Pictures are worth a thousand words, and so it holds true with getting a better feeling about what a floodplain is. Following are two schematics from FEMA's home study course of "**Managing Floodplain Development Through The National Flood Insurance Program.**"

These drawings should help put commonly used floodplain terms into perspective and give one a better feeling about the makeup of a floodplain.



Oblique sectional of a typical stream floodplain



Typical cross section of a stream floodplain and what happens to the base flood elevation as the flood fringe is occupied

Question: Part 61.17(IV) of the code of federal regulations 44 for the NFIP describes property not covered by a policy as that which is located entirely in, on, or over water or seaward of mean high tide, etc. Is this interpreted to mean that every square inch of the building has to be over water, or if any portion of a building is over water then there is no coverage on any portion of the building?

Answer: If the building is entirely in, it is not insurable. If it is partially in, it is insurable. The only time it gets a little complicated is when there is erosion. If erosion causes an insured structure to become completely over water, insurance can be maintained, but claims are extremely limited in that circumstance.

Question: Are non-below grade parking garages/structures with partial walls serving a convention center insurable structures under the NFIP? It is not a below-grade structure.

Answer: An insurable structure (building) as defined by the NFIP as having two or more outside rigid walls, and a fully secured roof that is affixed to a permanent site. If there are not 2 or more outside rigid walls, the structure is not insurable. We do not define whether the walls must reach from the roof to the ground (two or more 'partial' outside rigid walls may qualify if otherwise eligible).

Additionally, the building must resist flotation, collapse, and lateral movement, and at least 51% of the actual cash value of the building, including machinery and equipment, which are part of the building, must be above ground level (unless the lowest level is at or above BFE, and is below ground by reason of earth having been used as insulation material in conjunction with energy efficient building techniques).

Joe Cecil is an Insurance Examiner in the Underwriting Branch of DHS/FEMA, Mitigation Directorate, Risk Insurance Division

Vortex Valves: Flood Prevention Tools Catching on in UK Dam Projects

By Robert Y.G. Andoh

The 100,000 or so dams that operate in the U.S. serve a variety of purposes. More than 30 percent are used primarily for recreation. About a fifth of the dams were built primarily for fire protection. The third most popular use is for flood control (16 percent), followed by irrigation, water supply, hydroelectric, fish and wildlife, mining, debris control and navigation.

Dams used for flood control are particularly important for public safety purposes, because if they fail, the runaway floodwaters cause extensive damage to local communities. Among the more destructive dam failures in the U.S. were two that took place in the 1970s – in Buffalo Creek, West Virginia, where a 16-mile valley flooded, killing 125 people; and near Rexford, Idaho, where the failure of the Teton Dam caused up to \$2 billion in property damage and killed 11.

To protect against downstream flooding in heavy rain events, engineers typically deploy two principal strategies. They build up the communities' flood defenses, and/or they hold back the flood waters upstream.

Building up a community's defenses is an expensive and disruptive proposition. Municipalities must enlarge their existing conveyance channels or build up protective walls to ensure that heavy flows don't flood local streets. They need to create higher embankments or shored-up levees. But that can be a challenge in many older urban areas, where residential and commercial projects have been built close to the channels. To ensure adequate protection, local leaders often have to resort to land takings.

Holding back flows is usually the more efficient, cost-effective way. To allow for a regulated flow downstream of the dam, and to protect against excessive, damaging flows, flood scheme designers deploy flow control devices upstream of dams. These devices contain an orifice sized to allow a calculated flow that will proceed through the dam and get slowly released during a major flood threat. But the downside of holding back flows is that the practice creates floods on the other side of the dam. This creates a problem for farmers upstream of the dam: They don't want their land to flood every time it rains. And it often requires municipalities to resort to additional land takings of developments that fall within the expanded floodplain.

The challenge is to deploy a flow control scheme that balances the need to stop the damaging floods downstream of the dam and limit the protective flooding on the upstream side. In Europe, a number of dam projects have used vortex valves to help strike this balance. These valves are currently used in the United States for flow control purposes in urban drains and ponds, but they haven't been applied to dam projects.

Vortex valves act like natural hydraulic brakes. Designed with a snail or conical shape, high flows initiate a vortex within the valve which in turn restricts the flow of water out of the device. When head pressure builds, water circulates in a vortex pattern, allowing an air core to form within the device, preventing excess amounts of water from entering conveyance systems, such as channels through urbanized areas or combined sewers and other collection systems.

Under low-flow conditions, the valve acts as a large orifice where water and debris pass directly from the inlet to the outlet. As flow increases and reaches the flush flow point, high peripheral velocities start to throttle the flow. As pressure increases, an air core, accompanied by substantial backpressure, effectively restricts the flow through the outlet aperture.

Examples of the use of vortex valves in dam projects can be found in Weedon Bec and Glasgow in the United Kingdom. Both projects have deployed vortex flow control valves supplied by Hydro International Inc. (www.hydro-international.biz).

Weedon Bec, U

The village of Weedon Bec, situated west of Northampton in the UK, suffered serious flooding from the River Nene during the Easter of 1998. The village had no formal flood defenses, and there was a risk of flooding once every three years with some 95 properties at risk of flooding. The main cause of flooding was the limited capacity of culverts under a railway embankment downstream of the village and at a road bridge within the village.

The project team considered a range of options, and it became evident that the most viable option was the provision of upstream flood storage, because improving the capacity of the channel to pass flood flows required the existing river channel to be doubled in size, producing unacceptable disruption and loss of land. The cost of enlarging the road bridge and railway culvert would also have been very high.

Enlarging the channel would have had the effect of transferring the problem further downstream, as this produced an intolerable increase in downstream flows through several villages and the town of Northampton, which were already at risk of flooding. Containment of floodwater within the river channel would also have required construction of flood walls through 30 private gardens, the costs of which were very high and the resulting disruption to residents unacceptable. This, coupled with potential problems with access for future inspection and maintenance, made the channel enlarging option unattractive.

A site was identified less than a mile upstream of the village where the river flows through a

well-defined valley with little habitation, and this formed a suitable location for implementing a flood storage scheme. The scheme, which was completed in the fall of 2002, comprises an earth fill dam with a maximum height of 22 feet and a crest length of just under 500 yards. The storage area occupies the valleys of the Newnham and Everdon arms of the River Nene, providing a flood storage area of approximately 91 acres and volume of approximately 215 million gallons at full capacity.

The flow from the reservoir passes through a 7.8-foot wide by 6.9-foot high box culvert constructed on the line of the original river channel. A conical-type (C-type) vortex flow control with outlet aperture of 5.7 feet and overall length and height in excess of 16 feet was installed to attenuate the peak flow through Weedon Bec from 7,000 gallons per second (605 mgd or 935.8 cfs) to the in-bank capacity of the river channel through the village of 2,600 gallons per second (225 mgd or 347.6 cfs) during a 50-year event.

A C-type vortex valve was chosen on the basis of its simplicity, low maintenance requirements, and relatively lower cost for this site. Other alternative options for controlling flows through the culvert, such as a fixed orifice, an electrical or hydraulically actuated penstock, or a float operated radial gate, were considered but discounted because of the following reasons:

- There is no power supply near to the site for automatic gate operation, and to provide this added greatly to the scheme cost. There would also be a risk of power or equipment failure during a flood event.
- Arrangements to allow manual operation of penstocks during a flood event were not considered to be of practical benefit, because it would be unrealistic to expect maintenance staff to operate them safely during a flood event. The penstock would, therefore, in effect, act as a fixed orifice.
- A fixed orifice would cause unnecessary, frequent, and significant flooding upstream of the dam, which would limit use of the land for agriculture. This was unacceptable to the affected landowners.
- A float-operated radial gate across the culvert exit controlled by downstream water level was rejected, because it would have

pressurized the culvert and required maintenance.

- There was also the a risk of failure of operation of equipment with moving parts that only came into operation only intermittently, and this would impose a significant maintenance requirement, which the responsible Agency wished to minimize.

An essential requirement of the scheme was environmental sensitivity, adaptability the ability to allow the passage of both fish and small aquatic mammals through the culvert and control structure under normal operating conditions. The unique two-stage head-flow characteristics for the vortex valve, which in effect meant it operated like a large orifice with unimpeded flows under normal flow conditions, made it well suited to this application. The unit installed at Weedon Dam has the facility to adjust the controlled outflow between just over 2,000 (172.8 mgd or 267.4 cfs) to 3,000 gallons per second (259.2 mgd or 401 cfs) via the use of removable stop logs on its intake. This provides flexibility and the ability to adapt flows in response to major changes in the hydrological characteristics of the catchment such as impacts of climate change.

City of Glasgow, Scotland

Another example of the use of vortex valves in an urban drainage context to address space constraint issues is the city of Glasgow's White Cart Water Flood Prevention Scheme. The project, currently under way, is Scotland's largest Flood Prevention Scheme, designed to protect 1,750 homes and businesses from flooding.

For nearly a century the White Cart Water has inflicted serious flooding on homes and other

properties on the south side of Glasgow. This shallow, fast flowing river is prone to flash flooding to the extent that 12 hours of rain can cause water levels to rise by more than 19 feet. Over 20 significant floods have taken place since 1908, and in 1984 more than 500 homes were inundated.

The solution involved the formation of three flood storage areas upstream of the city to temporarily hold back the bulk of floodwater generated by extreme rainfall and control the release of water passing downstream through the city to an acceptable level. The general criterion adopted for design was that each pond would fill to its top water level during the 1-in-200-year flood event.

Conclusions

Vortex valves help provide a high degree of flexibility in the design of stormwater management systems. Rather than send flows downstream to be dealt with later, vortex valves regulate flows and allow drainage systems to distribute them in a more natural manner.

A number of case studies have been described that show the utilization of these valves over a wide range of flow control duties – from controlling flows from catch basins into collector sewers to controlling dammed flows on rivers to alleviate flooding in a city. To solve future water issues in the most economical, efficient manner possible, society will have to adopt integrated water management plans that prevent problems before they occur. Vortex valves illustrate how those plans can work.

Robert Y.G. Andoh is director of innovation for Hydro International Inc.



Tips for Lenders and Agents: The Emergency Program

Susan Bernstein, FEMA
from the NFIP eWatermark 10/15/08

So, you are a lender or an insurance agent and you have a client who lives in a community that has just joined the NFIP and is in the Emergency Program. You've just found out the insurance coverage for communities in the NFIP Emergency Program is capped at \$35,000. How do you make sure the homeowner gets sufficient coverage to meet the requirements the lender's regulators have established for flood insurance coverage?

A typical scenario for such a situation might look something like this: the borrower has a \$200,000 loan for a home with a replacement value of \$280,000. The lending regulator and the lender require the home be insured to the full cost of the loan, but the community in which the home is located has only recently joined the NFIP.

The NFIP Emergency Program

First, I'd like to offer a brief refresher about the NFIP Emergency Program.

A community applies for participation in the NFIP for a variety of reasons ranging from the need to make sure NFIP flood insurance is available to residents to the need to respond to notification from FEMA regarding the presence of one or more Special Flood Hazard Areas (SFHAs) within the community's boundaries.

The application the community submits to the FEMA Regional Office must include information showing the adoption of resolutions or ordinances to minimally regulate new construction in SFHAs. Once the application is received and approved, FEMA authorizes the sale of flood insurance in the community up to the limits of coverage set for the NFIP Emergency Program (see box).

NFIP Emergency Program Flood Insurance Coverage Limits	
Building Coverage	
Single-Family Dwelling	\$ 35,000
2- to 4-Family Dwelling	\$ 35,000
Other Residential	\$ 100,000
Non-Residential	\$ 100,000
Contents Coverage	
Residential	\$ 10,000
Non-Residential	\$ 100,000

Next, FEMA assesses the degree of flood risk and development potential in the community and, if appropriate, arranges for a study to determine Base Flood Elevations (BFEs) and flood risk zones in the community. Consultation with the community occurs at the start of and during this "flood study." Communities with minimal or no flood risk are converted to the NFIP Regular Program without a flood study.

FEMA provides the studied community with Flood Insurance Rate Maps (FIRMs) delineating the BFEs and flood risk zones. The community is given 6 months to adopt BFEs in its local zoning and building code ordinances, and to meet other requirements.

Once the community adopts more stringent ordinances and FEMA converts the community to the NFIP Regular Program (see box), basic floodplain management requirements apply, and higher levels of flood insurance coverage are made available to residents.

NFIP Regular Program Flood Insurance Coverage Limits			
	Basic Insurance Limits	Additional Insurance Limits	Total Insurance Available
Building Coverage			
Single-Family Dwelling	\$50,000	\$200,000	\$250,000
2- to 4-Family Dwelling	\$50,000	\$200,000	\$250,000
Other Residential	\$150,000	\$100,000	\$250,000
Non-Residential or Small Business	\$150,000	\$350,000	\$500,000
Contents Coverage (per unit)			
Residential	\$20,000	\$80,000	\$100,000
Non-Residential or Small Business	\$130,000	\$370,000	\$500,000

Mandatory Purchase Requirements

The purchase of flood insurance is required by federally regulated or insured lending institutions for loans secured by buildings located in SFHAs. If FEMA notifies a community that it is flood prone and the community does not apply for participation in the NFIP within 1 year of notification, residents will be ineligible for federal or federally related financial assistance for acquisition, construction, or reconstruction of insurable buildings in the SFHA. Conventional loans may be available for buildings located in the SFHA of a nonparticipating community; however, such loans are made at the lender's risk.

Excess Insurance

Lenders will notify borrowers there is an insurance requirement to maintain coverage in excess of what is available under the Emergency Program. Federal regulations cap NFIP coverage at \$35,000 for residential property in communities in the Emergency Program. For this reason, it is rare for a property owner to get sufficient coverage for the cost of the loan. Excess coverage will be needed for the property.

How does an insurance agent find an excess insurer? The federal government does not endorse any companies, so agents may need to contact some of the larger insurance companies doing business and those offering marine coverage. As always, the Internet is a wonderful search tool. You can use a regular search engine to enter the phrase "excess flood insurance coverage," and you'll be presented with a number of excellent links. I did.

So, let us return to the hypothetical scenario. The borrower has a \$200,000 loan for a home with a replacement value of \$280,000. The lending regulator legally can stipulate the bank require the home be insured to the full cost of the loan but, since the borrower lives in a community just the joining the program, the maximum NFIP coverage available is \$35,000.

The borrower's insurance agent will need to contact an excess insurer to cover the amount exceeding \$35,000. Remember, some banks may legally require a home be protected to the full cost, even if it is more than the NFIP cap. Lenders, this means, even after the community joins the NFIP Regular Program, you may need to maintain excess coverage on the property for the amount above \$250,000 (in this case, \$30,000). Always remember to check the insurance requirements of your regulator.

Lenders need to keep track of the community status, because communities often move to the NFIP Regular Program quickly. For community status information, visit the NFIP [Community Status Book](#) page on the FEMA website. Information about an NFIP status change is also usually available in local newspapers or from other media in the community.

Most of this information is covered in the handbook [Mandatory Purchase of Flood Insurance Guidelines](#), also available online or by contacting the FEMA Distribution Center at 1-800-480-2520.

Finally, lenders must remember to always keep the borrower notified of all this information. Property owners may be confused about the reason(s) they need to get a policy from two different insurance companies, but this is a problem easily solved if their lender keeps them informed. As always, keep track of all notice requirements (see [Mandatory Purchase of Flood Insurance Guidelines](#)) to ensure you don't get warned by your regulator and, worse, sued by your borrower.

Susan Bernstein is the Editor of Watermark and writes regulations for the NFIP. She worked as the Mitigation Division Legal Liaison to WYO Companies and the FEMA Office of General Counsel for 10 years.



Watershed Protection and Flood Prevention Operations

From usda nrcs website

Introduction

There are over 1,300 active or completed watershed projects. Watershed Operations assistance may be provided in authorized watershed projects to install conservation practices and project measures (works of improvement) throughout the watershed project area. The planned works of improvement are described in watershed project plans and are normally scheduled to be installed over multiple years. All works of improvement, including floodwater retarding dams and reservoirs, are owned and operated by the sponsoring local organizations and participating individuals.

How The Program Works

NRCS does watershed planning in the following ways:

- Sponsoring local organizations can request that watershed project plans be authorized for Federal Watershed Operations funding assistance.
- Watershed plans involving federal contributions in excess of \$5,000,000 for contribution, or construction of any single structure having a capacity in excess of 2,500 acre feet, require Congressional approval.
- Other plans can be authorized for federal funding by the Chief of NRCS.
- After approval, technical and financial assistance can be provided for installation

of works of improvement specified in the plans, subject to annual appropriations, through Watershed Operations.

Technical and Financial Assistance

Watershed Operations provides technical and financial assistance in authorized watershed projects which have public sponsors who:

- Conduct public meetings to assure local involvement
- Obtain all land and water rights and permits required for the installation of works of improvement
- Provide local share of funds to install works of improvement
- Operate and maintain works of improvement

Eligibility Authorized Watershed Projects

Criteria include:

- Public sponsorship
- Watershed projects up to 250,000 acres
- Benefits that are directly related to agriculture, including rural communities, that are at least 20 percent of the total benefits of the project

Funds for Watershed Projects

Funds that may be available for watershed projects are subject to the following:

- Annual Congressional appropriations
- State and national resource priorities
- Acquisition of land and water rights, permits

- Local funding established for specific project measures
- Completion of structural, agronomic, and vegetative designs for project measures
- NRCS and the project sponsor approval of an Operation and Maintenance Agreement involving the measures to be installed

Additional Information

The documents below require [Adobe Reader](#)

[Watershed Operations: 2010 Status of the Program](#) (document no longer available)

[Watershed Protection and Flood Prevention Act, P.L. 83-566](#) (PDF, 42KB)

[Watershed Operations Historical Appropriations, 1947 - 2010](#) (PDF, 35KB)

[USDA Brochure: Watershed Program Meeting Today's Natural Resource Needs](#) (PDF, 1.6MB)

[Watershed Benefits](#) (document no longer available)

[Watershed Protection and Flood Prevention Program Guide](#) (PDF, 221KB)

[National Watershed Coalition's "What Is A Watershed?" Page](#)



Instant Information about Water Conditions: Ask the River to Text You a WaterAlert

Sign up at <http://water.usgs.gov/wateralert>.

Now you can receive instant, customized updates about water conditions by subscribing to [WaterAlert](#), a new service from the U.S. Geological Survey. Whether you are watching for floods, interested in recreational activities, or concerned about the quality of water in your well, [WaterAlert](#) allows you to receive daily or hourly updates about current conditions in rivers, lakes, and groundwater when they match conditions of concern to you.

“Real-time water data are essential to those making daily decisions about water-related activities, whether for resource management, business operations, flood response or recreation,” said Matt Larsen, USGS Associate Director for Water. “WaterAlert continues USGS efforts to make data immediately available and relevant to every user.”

[WaterAlert](#) allows users to receive updates about river flows, groundwater levels, water temperatures, rainfall, and water quality at any of more than 9,500 sites where USGS collects real-time water information. This information is crucial for managing water resources, including during floods, droughts, and chemical spills.

“This is fantastic,” said Jim Cantore, Weather Channel field meteorologist. “The new WaterAlert system from the USGS provides the latest river information to people in harm's way. This could be the first alert to a developing flood and can even help out during drought periods.”

[WaterAlert](#) also allows kayakers, rafters, and boaters to better understand when conditions are optimal and safe for recreational activities.

“The WaterAlert service is a fantastic resource for boaters of all abilities and disciplines,” said Wade Blackwood, executive director of the American Canoe Association. “During rain events, water levels on some rivers can rise quickly. This service will be useful as a warning system and will keep paddlers aware of water conditions in order to paddle safely.”

WaterAlert users start at <http://water.usgs.gov/wateralert> and select a specific site. Users then select the preferred delivery method (e-mail or text), whether they want hourly or daily notifications, which data parameter they are interested in, and the threshold for those parameters. Users can set the system to alert them when conditions are above a value, below a value, and between or outside of a range.

For example, emergency managers may be interested in setting up alerts when thresholds are exceeded, such as in the case of a flood. Water-supply managers could set an alert for times when groundwater well levels are low enough to require shutdown of supply pumps. Recreational rafters may find it useful to set a threshold that lets them know when the water levels are high enough to pass over rocks but not so high as to be unsafe. There is no limit to the number of subscriptions per user at a single site or multiple sites.

The USGS operates an extensive, real-time water information network, involving 9,081 streamgages, as well as 369 lake, 1,278 well and 3,632 precipitation gages throughout the United States. [USGS Water Science Centers](#) in each state can provide more detailed information on water conditions and USGS response to local events.

The USGS provides science for a changing world. For more information, visit www.usgs.gov.

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Flood News for Michigan Floodplain Managers

**A Newsletter of the
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