

The Antediluvian

Ohio's Floodplain Management Newsletter



Providing leadership in the cooperative management of Ohio's floodplains to reduce flood damage and recognize their natural benefits.

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Issue 1

What Happens When the Flood Comes and FEMA Doesn't?

By Cynthia J. Crecelius, CFM—Program Manager
ODNR, Division of Water—Floodplain Management Program

During the first week of February 2008, many of the northwest Ohio communities impacted by last summer's flooding found themselves wet again. This time the damage and devastation did not result in either a State or Federal Disaster Declaration. There were several County Disaster Declarations and reports of damage to structures. The media and many elected officials dismissed the event quickly and returned to other pressing issues. If you are the floodplain manager and FEMA didn't come to town, do you have permitting responsibilities and follow-up actions in response to the flooding? YES!

If the water touches buildings, you have work to do! Remember, any triggering event (e.g. tornado, winter storm, erosion, or fire) means that substantial damage determinations and permits for repair, replacement, and alteration must be completed. As a participant in the National Flood Insurance Program (NFIP), communities agree to issue permits for all development actions in the identified Special Flood Hazard Areas as well as to perform substantial damage determinations. Before repair or alteration, the local floodplain manager is required to determine whether damaged structures must be flood protected to comply with the local floodplain regulations for "substantially damaged" buildings. If the event is not large enough to result in a State or Federal Declaration, the burden of follow-up rests with the community. This requires that the community support completion of the NFIP responsibilities.

Following the February 2008 flooding, it became apparent that even smaller events could tax the resources of local floodplain programs. The large event in August 2007 provided some local floodplain manager's experience that left them better prepared to meet their NFIP responsibilities. They have new skills and forms to document substantial damage determinations. They have good knowledge of where the Special Flood Hazard Areas are, and how many structures they need to inspect / permit. They also have a backlog of work, however, and some have even less money in the budget for these activities because of the costs from the previous flood. The question is how do you keep going?

The Division of Water, Floodplain Management Program has provided support to impacted communities over the years and offers the following simple advice: build off what you know and help each other. The following may assist you, if your community is impacted:

- Make sure that your elected officials understand that enforcement responsibilities are triggered by the damage and NOT the declaration of disaster.
- Make use of the preliminary damage assessment information gathered by county emergency management offices as they determine the scope and impact of the event.
- If this is a repeat flood, compare the initial damage information with community records including substantial damage determinations and permits issued in the previous event(s). In other

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words, use the past information to help prioritize which buildings are likely to be substantially damaged, and which owners are already familiar with the local floodplain management regulations.

- A letter to the previous floodplain development permit applicants may be an efficient way to start the application for permits this time. Property owners can complete applications for repair permits that will verify estimates of repair cost and pre-damage market value, while the floodplain administrator is tackling the inspections for potentially “substantially damaged structures.”
- Develop working relationships with the local floodplain managers in other communities within your county and those nearby. Without the state and federal declarations, large-scale help (such as assistance from the Ohio Building Officials Association for substantial damage inspections) may not be available.
- Identify opportunities to mitigate or reduce flood risk and improve your knowledge of FEMA mitigation programs that do not require the Federal Disaster Declaration.

With large events and the State or Federal disaster declarations, people are aware that there are added resources and more funding for mitigation. However, we still have mitigation opportunities even when “FEMA does not come to town.” For example, the Flood Mitigation Assistance Program and Pre-Disaster Mitigation Grant Program are available on an annual competitive basis. They fund actions similar to those eligible in the post-disaster Hazard Mitigation Grant Program (HMGP). There are also specific opportunities for properties that have repeated flood damage. While the HMGP is the best-known source of significant funding, it is not the only assistance for accomplishing community actions and projects to reduce flood risk.

Consider a “team” of local floodplain managers from your county (or those nearby) to assist with the substantial damage determinations and permit issuance. ODNR, Floodplain Management Program has developed a short training along with a substantial damage handbook and worksheets to help build this capability. Often, the county floodplain administrator has the resources to provide the necessary coordination for this type of teamwork. Don’t forget that the county emergency management structure is already in place, and this capability could be shared with the county floodplain managers. Each NFIP participating county has anywhere from 5-30 community floodplain managers that constitute a significant source of “local” knowledge of the area. This approach will be supported as FEMA completes Map Modernization with the countywide studies and maps. Creating this “team” approach to post event floodplain management responsibilities could help meet individual needs where no State or Federal disaster declaration is made.

Capitalizing on your fellow local floodplain managers has another advantage; they are already familiar with the floodplain development permit process and NFIP regulations. Considering new and different approaches for how we prepare, respond, and recover from flood disasters, can only put us in a better position when the next flood happens!

2008 OFMA Executive Board Elections

OFMA will be holding its annual election of officers at the 2008 Ohio Statewide Floodplain Management Conference. Members of the organization will vote upon seven positions including:

- Chair
- Vice Chair
- Secretary
- Treasurer
- three Member-At-Large positions

The term of office for these Board positions will run from January 2009 - December 2010. If you are interested, candidates must be WMAO members in good standing and are asked to submit a completed application with a brief summary of qualifications. The application can be obtained from Membership/Nominating Committee Chair, Ray Sebastian, who can be contacted at (513) 732-7213. Completed nominations and candidate information should be forwarded to Ray by fax (513) 732-7163 or by email: rsebastn@co.clermont.oh.us.

Springtime, Summertime; Anytime is Awareness-time

By Christopher M. Thoms, CFM—Program Supervisor
ODNR, Division of Water—Floodplain Management Program



..ANOTHER WINTER STORM WILL AFFECT THE REGION THURSDAY...
LOW PRESSURE TRACKING ACROSS THE OHIO VALLEY WILL BRING A
STRONG COLD FRONT THROUGH THE REGION WITH THE POTENTIAL OF SIG-
NIFICANT SNOWFALL SATURDAY. GUSTY NORTHWEST WINDS WILL ACCOM-
PANY THE SNOW AS MUCH COLDER AIR SWEEPS INTO THE REGION BEHIND
THE LOW. ..WINTER STORM WATCH IN EFFECT FROM FRIDAY MORNING
THROUGH SATURDAY AFTERNOON...

Driving northbound I-77 last weekend, I was enjoying the sweeping vistas of Guernsey and Tuscarawas counties beneath strikingly blue skies and bright white clouds. I mention this because, typically, February in Ohio is a gray month and my pleasure at the exceptionally beautiful day was even greater because I had braced for hours of driving through the dismal weather. I was pleasantly surprised.

For many, February in Ohio is a month of preparation. Indians and Reds fans preparing for Spring Training, basketball fans for the opening championship round in Dayton; hunters for wild turkey season; walleye fishermen for lining up along the banks of the Maumee, Portage, Mahoning, and Sandusky rivers; and farmers and gardeners for Spring planting. In the midst of all this preparation, we should not neglect being prepared for the severe weather that is also an expected, if unpredictable, feature of the season. As floodplain managers, we need to regularly remind those we serve of the importance of severe weather awareness and preparation.

Ohio's Committee for Severe Weather Awareness (OCSWA) can support your efforts to promote severe weather awareness in your area. The committee's website at www.weathersafety.ohio.gov/ contains detailed information for the range of severe weather events that affect Ohio. The website can help you as you remind people in your area to not wait until severe weather strikes before taking action, to be aware of weather conditions, listen for broadcasts from the National Weather Service and local news stations, and to prepare and practice a Family Disaster Plan so they know what to do when severe weather approaches.

Each year the committee sponsors two *Severe Weather Awareness Weeks* and a Poster Contest (for elementary-age students). This year, Governor Strickland designated March 23 through 29 as Ohio's *Spring Severe Weather Awareness Week*. During that time, radio and television stations across the state will run public service announcements promoting severe weather awareness. Join in and take advantage of this opportunity to increase severe weather safety for your area. If we brace for severe weather by properly preparing for it, then we increase our safety. And if severe weather doesn't strike this time, we can all be pleasantly surprised.

2008 Ohio Statewide Floodplain Management Conference

August 27-28, 2008

**The Columbus,
A Renaissance Hotel**

2nd Annual OFMA Golf Outing

Please join us for the 2nd Annual OFMA Golf Outing at Darby Creek Golf Course. The cost is \$60 per person or \$240/team and includes range balls, greens fees, cart, beverages, catered lunch after the round, and prizes. Teams or individual golfers of all skill levels are encouraged to register. You can obtain the Golf Outing Registration Form from Dave Straub at (614) 430-7744. Check out the golf course website at: www.darbycreekgolf.com/.

Frequently Asked Questions Regarding “Enclosures Below the Lowest Floor”

By: Jonathan Sorg, CFM—Environmental Specialist
ODNR, Division of Water—Floodplain Management Program

We receive numerous questions about “enclosures below the lowest floor,” and the most common inquiries are listed below with their answers. Please see the figure on page 5 for an example of a compliant enclosure.

What is an “enclosure below the lowest floor?”

According to 44CFR 60.3(c)(5), it is a fully enclosed area below the lowest floor of a structure that is usable solely for parking of vehicles, building access, or storage. Since this area is subject to flooding, it must be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwaters.

What are “hydrostatic flood forces?”

Hydrostatic flood forces are lateral forces due to hydrostatic pressure. Hydrostatic pressure is the force that water at rest exerts on any submerged object or, in this case, structure. This type of pressure is capable of severely damaging structures via wall collapse or wall displacement.

What designs can be used to meet the requirement of “automatic entry and exit” of floodwaters?

An “enclosure below the lowest floor” must meet one of the following requirements:

- It must have a minimum of two openings (*i.e.* flood vents) on different walls having a total net area of not less than one square inch for every square foot of enclosed area, and the bottom of all such openings must be no higher than one foot above finished grade, or
- It must be designed and certified by a registered professional engineer or architect to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwaters.

FEMA’s Technical Bulletin 1-93, *Openings in Foundations Walls for Buildings Located in Special Flood Hazard Areas*, provides guidance on both options.

What materials must be used to construct

an “enclosure below the lowest floor?”

Since the enclosure is susceptible to inundation from the base flood, it must be constructed with flood-resistant materials, which is in accordance with 44CFR 60.3(a)(3).

Please see FEMA’s Technical Bulletin 2-93, *Flood-Resistant Materials Requirements for Buildings Located in Special Flood Hazard Areas*, for further information.

Do the interior and exterior grade elevations need to be same for an “enclosure below the lowest floor?”

The floor of the enclosure (interior grade) must be at or above the lowest adjacent grade to the structure to prevent the ponding of water within the structure and minimize the hydrostatic pressure against the walls. If the interior grade elevation is lower than the exterior grade elevation, the enclosure would be considered a basement according to 44CFR 59.1. Any basement with a floor below the base flood elevation is a violation of NFIP standards.

As a local official, how can I better ensure that an “enclosure below the lowest floor” remains unfinished?

If a structure is elevated eight feet or more, regulating the use can be difficult. The owner may forget about the flood hazard and convert the area into a livable space. Permit officials would be hard pressed to catch such a conversion since it was hidden behind walls. One way to help prevent such renovations is to have the owner sign a Nonconversion Agreement, which binds them to the conditions of the “enclosure below the lowest floor.” Please call our office if you would like an example of this agreement.

Where can I find more information about flood vents?

There are a few companies that have developed flood vents for installation in “enclosures below the lowest floor,” and some are listed below.

- Cooke Associates
(www.cookesupplies.com/products.htm)
- Floodex
(www.floodex.net/)
- Smart Vent
(www.smartvent.com/)

For more information, please feel free to contact our office at (614) 265-6750.



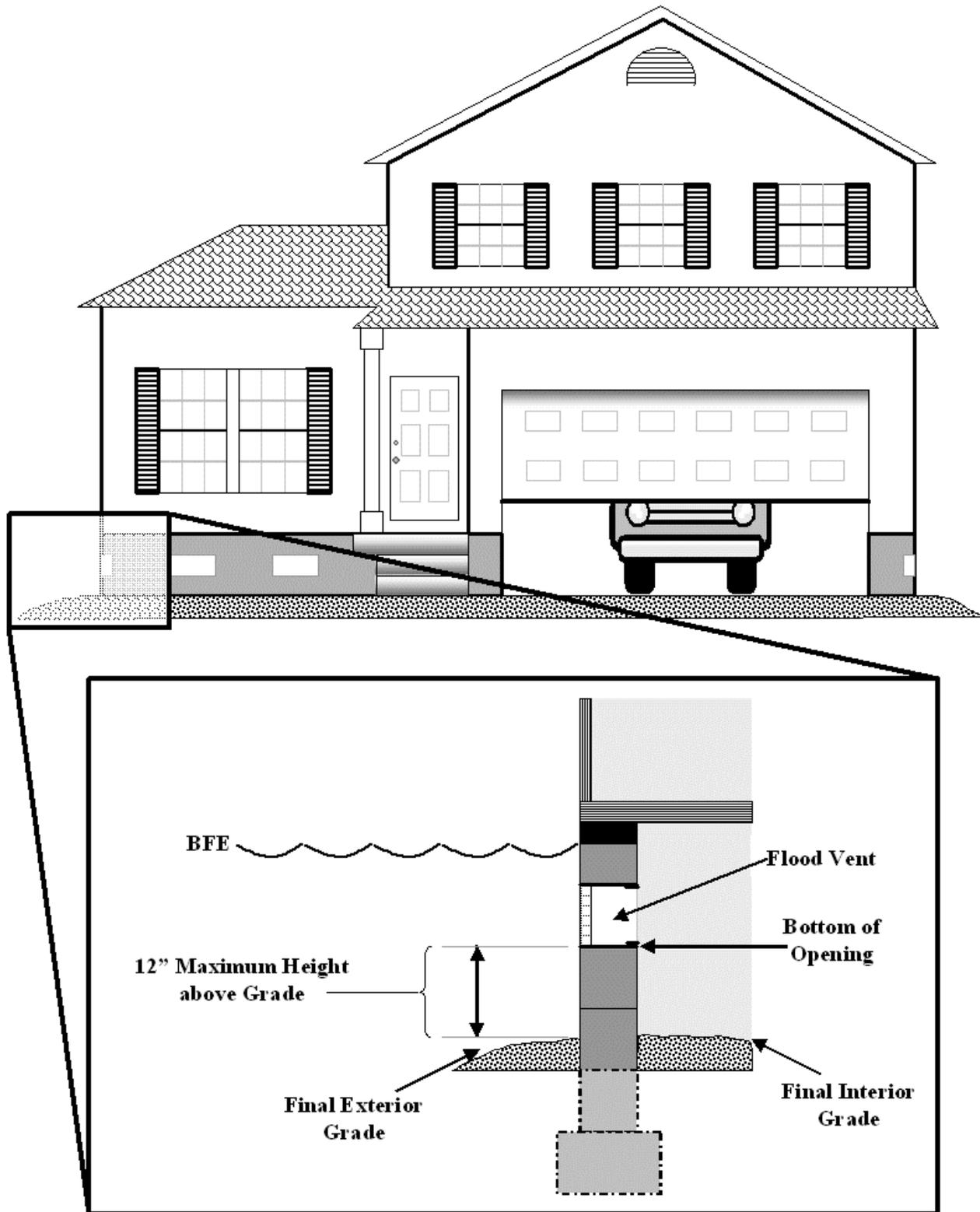


Figure 1: Compliant Residential Structure with Attached Garage Built on Solid Foundation Walls, Picture created by Jonathan Sorg

Floodville Floods Unexpectedly for a Third Time Again this Year!

ODNR, Division of Water—Floodplain Management Program

The Floodville Journal April 1, 2008 Alex D. Tocqueville
(reprinted without permission by Christopher M. Thoms)

*The story you are about to read is true (sort of).
The names and places have been changed and
combined to protect the author.*

Having endured three catastrophic floods in the last eight months, some Floodvillians are taking action.

This week, the Brookside Neighborhood Action Committee sent a letter of protest to city hall, the statehouse, and the Federal Emergency Management Agency (FEMA) objecting to the frequency of flooding and demanding that something be done to solve this problem.

"We're going to make sure residents and business owners get all the help they can so they can get on with their lives as quickly as possible" assured Mayor Betsey Whetz.

At Tuesday's city council meeting, Brookside resident, Sam Soghie, expressed shock at seeing a flood mark of 54" on the living room wall of his ranch home on Rockwater Hollow Road. "It's never flooded here before," he said, "and when it did last summer, it wasn't this deep!" Mr. Soghie, who repaired last summer's flood damage using a low-interest federal loan that he's still paying off, proclaims that he "never asked FEMA for anything" but complains that "FEMA does nothing... No one here has ever seen any flood maps and they're all wrong anyway 'cause these floods were freak, once-in-a-lifetime events."

Similar concerns were voiced at the meeting by another committee member, lifelong resident, and self-described "river rat", Deirdre Damph, who complained "It's just not fair, they said the flood last summer was a 100-year flood and this one was a 50-year flood, but I'm only 30."

Mrs. Damph spent last weekend removing debris from the basement and first floor of her Wetmeadow Blvd. home on the banks of the Rapid River. Earlier on Tuesday, with a mixture of anger and sorrow, she surveyed an extensive and growing curbside pile of flood-ruined carpeting, drywall, furniture, electronics, and family pictures. Only a week before, she had completed renovating her basement family

room, damaged during last summer's flood. Mrs. Damph doesn't know how she will pay for these repairs since she doesn't have flood insurance. Despite being advised by FEMA to the contrary, she thought that she didn't need to. "They said *that* flood was a 100-year flood. I thought I'd be long gone before that happened again, apparently I was wrong."

Not everyone is sympathetic. "Don't build next to a river that floods all the time!" complains Councilman Rock Hardline. "You should also refrain from eating paint chips, playing in traffic, and drinking expired milk. Why should anyone expect government bailouts for their poor choices?"

Mr. Soghie dismissed Councilman Hardline's criticism saying, "It wouldn't ever flood here if the Village of Buckeye Falls dam wouldn't leak so badly. Water pours over that dam and drowns us the minute it starts to rain." Bill Muteman, City Engineer, pointed out that the dam doesn't "leak", rather the spillway functions (as its name implies) as it was designed. Mr. Soghie concluded his remarks by saying, "If FEMA were serious about wanting to help this community, why don't they just buy out these damaged properties?"

Defending the city's flood maps as "pretty accurate", Floodplain Administrator Marsha Fillups conceded that Mr. Soghie was understandably upset since his basement wall collapsed again as he was pumping it out during the flood. Mrs. Fillups also noted that Mr. Soghie declined to participate in last Summer's FEMA-funded post-flood mitigation project where the city offered to purchase several repetitively flooded properties.

Mr. Soghie may not have to worry about bailouts this time around. Unlike last time, when Floodville was included in a Presidential Disaster Declaration, no federal disaster relief will be available this time. Mrs. Fillups warned that, without the federal declaration, no Hazard Mitigation Grant Program-funded mitigation project will be offered. According to Mrs. Fillups, this flood is not as bad as the last time so it doesn't meet the threshold for state or federal declaration. Cold comfort to those who bet against the river ever flooding them again.

A FEMA senior staffer, D. V. Cloud, cautioned against dependence on federal (or state) disaster assistance, even when it is available. "While disaster assistance will help, it will never be sufficient to

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restore flood damaged property” he said. “Flood risk varies but, no matter where they live, people should purchase flood insurance to help protect their homes and businesses. As long as your community participates in the NFIP, federal flood insurance can be purchased for any structure whether in floodplain or not. Nationally, flood damage is reduced by nearly a billion dollars each year in communities that enforce their local flood safety regulations and when property owners purchase flood insurance.”

Environmental Specialist and Certified Floodplain Manager, Di Ogenes, of ODNR’s Floodplain Management Program, agreed saying, “a flood insurance claim can be made whenever an insured structure is flooded, it doesn’t require any declaration. But, better still is when flood safety laws are followed so that less flood damage occurs to begin with.”

Enforcing flood safety regulations and correcting violations is a priority for city officials year-round. However, following a flood, Mrs. Fillups has an opportunity to correct flood risk by conducting damage inspections. For those structures that sustained 50 percent or more damage, Mrs. Fillups notifies owners that their structures are “substantially damaged;” they must be brought into compliance with the city’s flood safety law. “Over time, most floodplain structures will need to be flood protected in some way,” she says. “It would be nice if people would choose to

protect themselves sooner rather than later.” While expressing frustration that no one seems to care about flood safety until after it floods, Mrs. Fillups did say she was pleased that no one who participated in the city’s flood mitigation project reported flood damage this time.

“We’re looking to discuss solutions,” said Mrs. Fillups. “FEMA and ODNR have been very helpful, but it takes local commitment to make this work.” As with last Summer, she finds herself again on the front lines in responding to this flood, as she meets with owners of flood-damaged properties to discuss their recovery options. She reminded the council that while many of the flooded structures were built before FEMA provided flood maps to the city, some of the worst flood damage occurred to newer structures in flood hazard areas that did not comply with community floodplain regulations.

City Councilman Pete Bayou expressed support for Mrs. Fillups work and hope that this flood will serve as a lasting wake-up call for the whole community. “We have a problem we can’t ignore. We don’t solve anything by making excuses or trying to blame it on somebody else. What are we going to do about it?”

In the words of Mrs. Damp “I bought this house for the river view but I’ve just seen too much of it.” The National Weather Service reports that more rain is in the forecast.



Understanding Your Flood Risk

Introduction by Cynthia J. Crecelius, CFM – Program Manager
ODNR, Division of Water – Floodplain Management Program

ODNR, Division of Water has produced a new Fact Sheet compiled by the Floodplain Management Program. There are many schools of thought on why people continue to develop, build and live in high hazard areas such as floodplains. Some believe that there is a basic distrust of risk analysis methods (e.g. FEMA studies and maps aren’t correct). Others think that the likelihood of something hazardous happening to them is relatively small (e.g. lived here 25 years and never been flooded). Still others find false security in believing that existing risk management approaches have eliminated the entire threat (e.g. dams, levees and flood control projects).

Our purpose is not to convince you that any one philosophy is more correct than the others, it is just to give better information about risk and the consequences. Please share this information with your community. A downloadable version of Fact Sheet No. 66 – UNDERSTANDING YOUR FLOOD RISK, suitable for copying, can be obtained from the Division of Water Web page at:

www.dnr.state.oh.us/water/floodpln/publications/tabid/3519/Default.aspx





Ohio Department of Natural Resources Division of Water Fact Sheet

Fact Sheet 07-66

Understanding Your Flood Risk

What is Risk?

Risk is a combination of the likelihood that something will happen and the consequences when it does. For instance, a high likelihood with little consequence may have low risk.

example: seasonal flooding of undeveloped wetlands.

A low likelihood with extreme consequences may have high risk.

example: overtopping of a levee that protects a city from up to the 500-year flood.

What is the Likelihood of Flooding?

Years in floodplain	Chance of at least one 10-year flood	Chance of at least one 50-year flood	Chance of at least one 100-year flood	Chance of at least one 500-year flood	<p>The longer you occupy the floodplain, the greater your chance of being flooded.</p> <p>FEMA has not identified all areas that may be at risk of flooding. Between 20%–25% of flood insurance claims are from areas OUTSIDE of the FEMA Special Flood Hazard Area in supposedly "low risk" areas.</p> <p>**Over a 30 year mortgage, there is a 26% chance of a 100-year flood.</p>
1	10%	2%	1%	<1%	
2	19%	4%	2%	<1%	
3	27%	6%	3%	1%	
4	34%	8%	4%	1%	
5	41%	10%	5%	1%	
10	65%	18%	10%	2%	
15	79%	26%	14%	3%	
20	88%	33%	18%	4%	
25	93%	40%	22%	5%	
30	96%	45%	26%**	6%	

Risk Level:	High Risk	High Risk	High Risk	Medium Risk	Low Risk
	In FEMA 100-year floodplain*	In FEMA 100-year floodplain*	In FEMA 100-year floodplain*	In 500-year floodplain	Above 500-year floodplain
	Also in: 10, 50 and 500 year floodplain.	Also in: 50 and 500 year floodplain.	Also in: 500 year floodplain.		
	10-year flood height	50-year flood height	100-year flood height	500-year flood height	
	<p>FEMA Special Flood Hazard Area* One-percent or greater chance of flooding in any year. (FEMA Flood zones A, AE, A1– A30, AO, AH)</p>			0.2% or greater chance of flooding in any year (FEMA flood zones B, shaded X)	< 0.2% chance of flooding in any year (FEMA flood zones C, unshaded X) Basement may be at risk of flooding from sewage backup, inundation from bigger floods and structural damage from elevated ground water levels.

*The Special Flood Hazard Area has a 1% or greater chance of flooding in any year. On average floodwaters will get high enough to flood this area once in every 100 years. It is known as the 100-year floodplain. A 100-year flood can occur more than once in a 100-year period. Refer to the FEMA Flood Insurance Study and Flood Insurance Rate Map for your community to help determine your flood risk.

Are you as safe as you'd like to be?

If you are within the FEMA Special Flood Hazard Area (100-year floodplain) you may also be at risk of damage from smaller, more frequent floods. If you are outside of the FEMA Special Flood Hazard Area you are still at risk from larger, less frequent floods.

Things to Consider

You don't need to be next to a stream or river to be flooded. Flood waters can extend hundreds or thousands of feet from the nearest open watercourse, either overland or through backup of storm or sanitary sewers. Even shallow depths of floodwaters can cause damage in the thousands of dollars.

Continued on back!

What are the Consequences of Flooding?



Floods may disrupt your life for days, weeks, or months. Your home or business could be uninhabitable for an extended period of time. On average 25% of businesses damaged by flooding will not reopen. Homeowners insurance does not pay for flood damage, and federal disaster assistance is only available following a Presidential Disaster Declaration. Most disaster assistance is in the form of low interest loans.

Anyone can buy flood insurance for your home or business, no matter what your flood risk, as long as your community participates in the National Flood Insurance Program. Consider the consequences before writing off flood insurance as too expensive. Can you afford to not be covered?

If your lender requires flood insurance it is only for your structure. Purchase additional coverage to cover your contents. Plan ahead. Except when newly purchasing a home or business there is a 30 day waiting period before flood insurance policies go into effect.

How Can You Reduce Your Risk?

Reduce your risk either by reducing the likelihood you will be flooded or by reducing the consequences when you get flooded.

Reducing Your Likelihood of Flooding

- Choose to build/live on higher ground.



Ted Strickland Governor • Sean D. Logan Director • Deborah Hoffman Chief

- Elevate the lowest floor of your building above anticipated flood levels.
- Construct dams or detention basins to hold stormwater run-off.
- Construct levees to hold back flood waters.

What damages/repairs can you expect following a flood?	Depth of flooding				
	1-4 inches	5-8 inches	9-12 inches	13-15 inches	16-18 inches
Remove Dirt and Debris	x	x	x	x	x
Clean and Sanitize	x	x	x	x	x
Replace Carpet/Flooring	x	x	x	x	x
Repair Drywall	x	x	x	x	x
Replace Insulation in Exterior Walls	x	x	x	x	x
Replace Baseboard Molding	x	x	x	x	x
Repair/Replace Baseboard Heaters	x	x	x	x	x
Replace Bookshelves and Floor Lamps	x	x	x	x	x
Some Furniture Damaged or Destroyed		x	x	x	x
Computer Accessories		x	x	x	x
Some CDs and Books Destroyed		x	x	x	x
Repaint Interior		x	x	x	x
Repair/Replace Washer/Dryer		x	x	x	x
Replace Kitchen/Bath Cabinetry			x	x	x
Repair/Replace Kitchen Appliances			x	x	x
Replace Living Room Furniture			x	x	x
Replace Bedroom Furniture			x	x	x
Clean Exterior			x	x	x
Repair/Replace Furnace/AC				x	x
Repair/Replace Hot Water Tank				x	x
Repair Electrical System				x	x
Replace Warped Doors					x
Replace TV, DVD, Stereo					x
Replace Personal Items					x
Repaint Exterior					x

Note: Dams and levees are costly to build and maintain. They also create additional risk from failure or overtopping that did not exist without the dam or levee.

Reducing the Consequence of Flooding

- Elevate utilities, appliances, and contents above anticipated flood levels.
- Purchase flood insurance to cover damages from flooding.
- Construct your home/building using flood resistant materials and methods.
- Have an emergency plan in place before the flood starts.

"There are risks and costs to a program of action. But they are far less than the long-range risks and costs of

comfortable inaction."

President John F. Kennedy

For additional information please contact:

ODNR, Division of Water
Floodplain Management Program
(614) 265-6750

Website: <http://www.dnr.state.oh.us/water/>
E-mail: water@dnr.state.oh.us

NGVD to NAVD?

Reprinted from *NFIP/CRS Update* (Summer 2007 Edition)

Regulatory floodplains are defined by the elevation of the base flood in relation to the elevation of the ground. Base flood elevations are used to determine the required elevation of new buildings in the floodplain. Floodplain management cannot succeed without accurate measurements of flood elevations, ground elevations, and building elevations. Needless to say, if flood elevations are based on one system and ground or building elevations are based on another, things won't work.

NGVD 29 stands for National Geodetic Vertical Datum of 1929. It is the system of vertical measurement that has been used by surveyors and engineers for most of the 20th century and was the basis for relating ground and flood elevations. Now, however, it has been replaced by the more-accurate North American Vertical Datum of 1988 (NAVD 88). Because it has such an impact on floodplain management, it is important for local officials to understand what's happening.

First, what is a "datum?" If we say that a flood will rise to 100 feet, one must ask "100 feet above what?" We need a consistent starting point so we can compare flood and ground elevations. The starting point for measuring elevations is our "datum plane," and the system and records we develop based on that plane are usually just called the "datum." In most cases, when we talk about elevations, we mean "above sea level." But some inland communities' elevation records were developed in relation to some other starting point. For example, the Chicago City Datum was developed with the level of Lake Michigan as its datum plane.

The National Geodetic Survey, the government people responsible for mapping, needed a common, consistent national datum plane from which to map the whole country. During the 1920s, the NGS established a network of 26 tidal gauges in the United States and Canada. Maps were prepared with elevations based on "Mean Sea Level Datum of 1929." In the 1970s, the name was changed to the National Geodetic Vertical Datum (NGVD) of 1929.

One reason for the name change was that it was found that the sea is actually not level. There are local variations caused by currents, wind, barometric pressure, temperature, sea bed topography, and salinity differences. The NGS ran more surveys around the country and had trouble making the numbers fit because mean sea level at one location was higher or lower than mean sea level elsewhere. This leveling work also found that ground elevations had risen or fallen due to earthquakes, subsidence, and rebounding of the earth that has continued since the glaciers receded. New satellite technology has discovered distortions in surveyed elevations caused by gravity.

Because of these shortcomings, the NGS established a new system on which to base elevation measurements. The North American Vertical Datum of 1988 corrects many of the problems with NGVD 29. It is also based on satellite systems that account for differences in gravitational forces in different areas. One can readily convert elevations in one datum to those based on another. For example, zero in the Chicago City Datum is 579.48 feet above zero ("mean sea level") in NGVD 29. If one tries to compare ground elevation in CCD to a flood elevation in NGVD 29, the 579-foot difference will make it readily apparent that something is off. A simple formula can convert elevations from CCD to NGVD 29, and vice versa.

Unfortunately, it's not so easy to convert to NAVD 88. The North American Vertical Datum is the product of thousands of corrections in elevation data. In the Rocky Mountains (where gravitational forces caused a lot of distortion to traditional surveys) the difference can be three feet or more. In other areas, the difference may be only a matter of inches. It takes a computer program called VERTCON to relate those two systems at any given point. (It should be noted that VERTCON 2.0 is not considered reliable beyond the boundaries of the lower 48 United States.)

Up until recently, most FEMA Flood Insurance Rate Maps used NGVD 29. However, FEMA's new maps are using NAVD 88 as the basis for published flood elevations. If local surveyors or your community have not made the switch, errors will arise unless elevations in NGVD 29 or a local datum are converted to NAVD 88.

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What is most important is that the same datum be used consistently. Since the base flood elevations used by the NFIP are on the FIRM, the FIRM datum must be used for the FEMA Elevation Certificate, Letters of Map Amendment, Letters of Map Revision, and other insurance-related purposes.

A community and the surveyors in the community may normally use NAVD 88 for most purposes, but if the community's FIRM uses NGVD 29, then NGVD 29 must be used for all flood, ground, and building elevations on elevation certificates and other NFIP uses.

It is basically the responsibility of the professional

surveyor, engineer, or architect to use the appropriate datum on FEMA documents. However, the community must be aware of the potential for errors if more than one datum is used. You don't need to know the conversion factor between the two, but you do need to ensure that the same datum is used for all elevations on the same document. In time, that datum will be NAVD 88 for just about every community. Meanwhile, local officials should review their benchmarks and other elevation reference marks to ensure that they state which datum is referenced and that they are consistent with any code requirements.

For more information on datums and their use in FEMA mapping, see www.fema.gov/pdf/fhm/fm_gsab.pdf



Certified Floodplain Manager (CFM) Exam Opportunities:

To register for the CFM Exam, please contact the Association of State Floodplain Managers (ASFPM) at (608) 274-0123. You may also visit www.floods.org for additional information. There are two upcoming opportunities scheduled in Ohio to take the exam:

June 25, 2008
OSU Extension Building
280 West Union Street (2nd Floor Meeting Room) Athens, OH 45701
6:00-9:00 pm

August 26, 2008
Ohio Department of Natural Resources
2045 Morse Road, Bldg. I-1 Columbus, OH 43229
1:00-4:00 pm

Please contact Alicia Silverio for local scheduling information on the Ohio exam dates at (614) 265-1006.



A Note from the Editor:

We recently said goodbye to George Meyers, P.E., CFM (or *GeoM* as he liked to sign his emails). We will miss his dry humor and wit, but most of all, we will miss his unsurpassed translation of engineering jargon to the English language.

Thank you, George, for more than eight years of service to the Division of Water, Floodplain Management Program. We wish you all the best as you move forward in your career!



Select Higher Standards Based on Your Flood Risk

Kimberly M. Bitters, CFM—Environmental Specialist
ODNR, Division of Water—Floodplain Management Program

Development decisions are made locally in Ohio, so your residents are depending on you to protect their health and safety! As local officials, your actions (or lack thereof) to reduce flood risk represent a deliberate choice. If your regulations include only the minimum requirements to participate in the NFIP, then your community has decided that at least a one-foot increase in flood heights is acceptable. You've also made decisions on how much your community is willing to tolerate the consequences of this natural hazard. That includes the cost of damages to both private and public investment as well as the health and safety of your residents. Did you know that 30% of flooded small businesses never reopen?

Hopefully by now, you've heard our office say that you have the option to adopt higher standards, which could benefit your community by reducing flood risk. To really make a difference, your community should choose higher standards based on your unique mix of community goals and flood risk. Of course, we realize that identifying these higher standards is a whole lot easier to say than actually do. So I'd like to provide a discussion on community characteristics that may get your process started.

What has this hazard cost your community so far? What would it cost in a worst-case scenario? How much more damage can your community and the individuals within it afford? You may already have a pretty good idea of which areas are going to be impacted by flooding. But a more specifically defined risk assessment can help you prioritize an action plan and build public support for implementation. Commonly overlooked assets put at risk by increasing flood heights are historic, cultural, and natural resources. In addition, flood damage can hinder economic growth through blight and the trickledown effects of poverty. So don't forget to consider the potential resources that can be uncovered through corrective regulatory standards.

There are a number of tools available that can assist in determining answers to these questions. One such tool is HAZUS-MH (see related article on page 17), which can assist you in characterizing your unique flood risk. To get an accurate representation of your flood risk the HAZUS-MH application requires the use of all the reliable data available. Existing data can be obtained for use in this evaluation through high water marks, local knowledge of historic flood heights, stream gauges, and miscellaneous studies provided by professional engineers.

These sources can verify or supplement FEMA-provided flood data.

Whether you use HAZUS-MH or other flood risk as-

essment tools, the result can provide details such as the number of structures, value of those structures, and the number of people who will be directly impacted by each flood event (*i.e.*, 10, 50, 100, 500-year floods). It's important to have a true understanding of your community flooding characteristics to efficiently use community resources in solving these problems. Inviting ODNR, FPM staff to assist you identify community risks, goals, and existing flood hazard information can improve the local understanding of your flood characteristics.

Knowing the timing, depth, duration, and location of your flooding can guide which higher standards you bring forward for consideration. Because there is limited public support for additional development restriction, you need to build strong connections between flood characteristics and the regulatory standards intended to correct the impacts. This is going to take some work, so you need to prioritize the higher standards in the best interest of the community. By clarifying the details of your local flooding situation, we begin to reveal which higher standards will make the biggest difference to your community.

Once you have a comprehensive risk assessment, an evaluation of community goals is needed to guide your consideration of higher standards. You must decide if flooding is preventing the community from achieving its goals. Does flooding hinder needed infrastructure expansion by forcing a large percent of the budget to go to preventable reconstruction of roads, bridges, and culverts? Is the redevelopment of your downtown seemingly impossible due to repeated flooding? Is your emergency response equipment ineffective during flooding events?

Where flooding is preventing the community from achieving its goals, there may be higher standards that begin to solve these problems.

Next, review your existing plans to determine how flooding has already been addressed. Comparing your community goals with the current limitations imposed by repeated flooding,

How has this risk already been addressed in current plans?

Land-use Plan / Zoning
Capital Improvement Plan
Emergency Management Plan
Debris Management Plan/Contract
Park Expansion Plan
Downtown Redevelopment Plan
Historic Preservation District Plan
Evacuation Plan

(Continued on page 13)

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can begin to shed light on how this risk should be managed. Does your land-use plan discourage additional development in high-risk areas? The existing plans can begin to expose the true costs of flooding in your community. The answers to these questions can translate into priorities and identify regulatory solutions that address specific community needs.

With knowledge of what is at risk, what your community wants to achieve, and the plans you have as guides, you must now make difficult floodplain management decisions. Do you still think that the potential costs of damage and risk are manageable? Does it make sense to spend more on protecting your community property, infrastructure, and citizen's health? Community investment to address these problems doesn't have to be exclusively financial. Often, the investment of staff time and resources can result in exponential returns. Building staff and citizen knowledge of what is at risk (as well as potential solutions) can produce dramatic results through partnerships, grants, and avoided damages. Implementing solutions isn't easy, but it is possible for any community.

A detailed flood risk assessment may convince you that the status quo is not your community's best management strategy. Once the flood risk has been detailed, communicate this information to your residents and provide them the opportunity to decide if development restrictions can be supported as a reasonable approach to making your community safer and less susceptible to floods. Very often, the actual risk is not the same as their perceived risk. Providing a factual basis for decision-making can make the difference in garnering citizen support for more restrictive flood reduction standards.

There are many inexpensive ways to spread this information including public outreach letters (*i.e.*, send a one-page insert with the water bill), street signs, high water markers, and public workshops. Communicate the flood risk and let your citizens decide how they want to respond. Let them decide: Where do they want to live and work? Do they want their homes, schools, and businesses built to a higher protection level? Do they want public expenditures placed in high-risk areas? Providing the forum for public discussion will give your citizens the power to control their own flood risk.



The City of Findlay's Response to Repeated Flooding

Steve Ferryman, CFM—Environmental Specialist
ODNR, Division of Water—Floodplain Management Program

The City of Findlay has experienced four major flood events since December 2006. Three of those events are in the City's top ten historical river crests. The August 2007 flood was less than one tenth foot from the record flood on the Blanchard River that occurred in 1913. Preliminary rain gauge data from the U.S. Geological Survey (USGS) indicates that the rainfall for the August event exceeded the 1000-year/24-hour rainfall frequency. Twenty-two hundred structures were flooded in Findlay alone, many of them for the third time in nine months. This article will highlight the City's response to these floods and discuss some of the future challenges that face Blanchard River Watershed residents.

Findlay Flood Task Force

Following the flood events in December 2006 and January 2007, the Mayor at the time, Mr. Anthony P. Iriti, established the Findlay Flood Task Force (FFTF). Mr. Iriti invited stakeholders from all levels of government, non-profit organizations, academia, citizens, and local officials from downstream communities to participate on the task force. The FFTF was charged with identifying factors that contributed to the recent flood damage and recommend strategies to mitigate future flood damage.

The FFTF produced a final report containing nine findings and recommendations for flood hazard reduction in Findlay. The City has implemented many of the recommendations in the report, and is continuing to work on others. The following is a summary of task force recommendations and the City's implementation efforts.

More Data Needed

With the help of the USGS and the National Weather Service (NWS), the FFTF determined that existing river

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stage/flow and precipitation data limited the accuracy of flood event predictions. To help with this problem, USGS proposed a real-time flood-warning network for the City that includes inundation mapping for multiple flood stages. The City committed the matching funds for this project, which will be completed this fall.

USGS recently completed upgrading the existing stream gauge on the Blanchard River downstream of Findlay, and installed four new stream/rain gauges upstream of Findlay. Two of the gauges are on the

Blanchard River, and one each on Eagle Creek and Lye Creek. These two creeks are the major tributaries to the Blanchard River upstream of Findlay. These new gauges will enhance the NWS's ability to accurately forecast flood peaks in the Findlay area and allow more time for local officials to react. Later this year, USGS will provide the City with detailed flood inundation maps that will show which areas of the City will be affected at various flood stages. The maps will be available to the public on the NWS Advanced Hydrologic Prediction Service website. The real-time stream gauge data is currently available on the City's website: www.ci.findlay.oh.us/.

Reduce Flood Insurance Premiums

Findlay has the fourth highest number of flood insurance policies in the State of Ohio. There are 1,436 policies in the City of Findlay for \$136 million in coverage. There have been 1,206 paid claims in Findlay totaling over \$27.5 million dollars. The average flood insurance policy premium in Findlay is \$706 per year, which is the average premium rate for Ohio communities. In an effort to reduce the flood insurance premiums for Findlay residents, the task force recommends joining the Community Rating System (CRS).

The CRS is an incentive based program of the NFIP that rewards communities that exceed minimum NFIP criteria by providing reductions in flood insurance premiums. A community gets points for documented flood mitigation activities in many different categories. The City of Findlay has completed the CRS application and has determined that their current floodplain management efforts would result in a 5% reduction in flood insurance premiums. A 5% reduction in flood insurance premiums would be \$34 per policyholder, for a total of \$45,700 for the community. Increased workloads from the recent flood events have slowed the City's efforts to join CRS. Mayor Pete Sehnert, who took office in January, will be briefed on CRS and decide whether or not to submit the City's application.

Structural Flood Control Project

Findlay has determined that the U.S. Army Corps of Engineers (USACE) will be an essential partner in any major flood mitigation project. The USACE completed an Interim Survey Report on Flood Control for Findlay in 1962 in response to two floods in 1959. That report recommended:

- Constructing a system of levees and floodwalls through Findlay. The levees would be approximately 10 feet higher than the existing ground.
- Constructing a diversion channel to re-route flow from Eagle and Lye Creek to the east edge of Findlay, and enter the Blanchard River near the Findlay Country Club. The proposed channel connects to Eagle Creek south of Olive Street.
- Install floodgates on Howard Run, Eagle Creek and Lye Creek where they join the Blanchard River. Water within these streams would be pumped over the levees during flood conditions.
- Install pump stations and flood gates on all storm sewers where they enter the Blanchard River.
- Rebuild bridges at Cory Street, Main Street and Blanchard Street as well as two railroad bridges.

The estimated project cost was \$12 million in 1962, with the USACE willing to commit 75% of the cost. Findlay wants the USACE to develop a new project management plan and feasibility study based on the 1962 report. These studies are estimated to cost \$600,000, with the local cost share being \$250,000. Communities in the watershed are currently searching for potential sources of funding for the local match. A project similar in scope to the 1962 proposal is estimated to cost \$1.5 million to design, and \$100 million to construct. The current local match requirements for design and construction are 65% federal and 35% non-federal.

Remove Structures from Harms Way

There are approximately 2,200 structures in the floodplain according to Mr. Todd Richard, a Certified Floodplain

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Manager and Findlay's Zoning/Floodplain Administrator. With the help of the Ohio Building Officials Association inspectors, the City conducted substantial damage determinations for all flooded structures after the August 2007 event (see *The Antediluvian* Volume XV, Issue II). With the help of the Hancock County Regional Planning Commission, the City has applied for over \$7.4 million in Hazard Mitigation Grant Program funds to acquire and demolish 90 substantially damaged and repetitive loss structures.

Strengthen Flood Damage Reduction Regulations and Improve Enforcement

The City of Findlay has several different regulations intended to reduce flood damage. Minimum NFIP requirements are the foundation of most community's floodplain management programs. However, it is up to each NFIP participating community to evaluate their specific flood risk, determine how much flood damage they are willing to accept, and adopt and enforce regulations accordingly. The City's current flood damage reduction regulations contain several higher standards including a compensatory storage requirement and the prohibition of hazardous or buoyant materials in the floodplain. City officials have now realized that additional standards are needed to further reduce flood damage.

Even development outside of the floodplain can contribute to flooding problems. Streets, parking lots, rooftops and other impervious surfaces increase runoff, which can aggravate flooding. In an effort to reduce this impact, Findlay and Hancock County recently updated their stormwater regulations. The updated regulations require new subdivisions to build detention ponds that are sized to detain the 100-year flood and release it at a pre-determined rate.

Low Level Flooding

The City's water pollution control and engineering staff were encouraged to continue efforts to reduce the impact of minor flood events. Recent projects include the installation of flap gates on stormwater discharge pipes, the removal of Liberty Street low head dam, and channel modification projects on the Blanchard River. The channel modifications included scaling back the riverbank in areas to reconnect the river with the floodplain and installing several riffle structures. This project resulted in a five-inch reduction in flood elevations during a five-year flood event.

Utilizing the Natural Benefit and Function

Wetlands and floodplains provide many valuable services to society at a fraction of the cost of man-made systems designed to perform similar functions. Wetlands and floodplains store flood water, which reduces flood damage and erosion, improves water quality and habitat, and provides excellent places for recreation. The City is in the process of identifying and protecting these areas from future development.

Commitment to Floodplain Management

To ensure that the FFTF report does not become just another plan on the shelf, the last recommendation of the report is to create an organization with implementation oversight. The Findlay business community convened a meeting to discuss ways that the private sector could be part of the flood mitigation effort. As a result, the Northwest Ohio Flood Mitigation Partnership, Inc. (NWOFP) was formed. The non-profit partnership was initiated by Mr. Gary R. Heminger, President of Marathon Petroleum Company, LLC. The purpose of the NWOFP is to expedite the design and development of the USACE project management plan and feasibility study. Funding has been provided by nine local businesses and a local private foundation, each of which is a member of the Board of Directors. Former-Mayor Anthony P. Iriti is the President of the NWOFP. If you are interested in additional information, please contact the NWOFP at nwofmp@gmail.com or by calling (567) 251-3802.

Conclusion

The FFTF Report concludes that there is no set of measures that will eliminate flooding in the Blanchard River watershed. Flooding is a natural process that is essential for the health of all streams. This natural process is the result of rain that falls over 771 square miles of land, which makes flooding a watershed-wide issue. Reducing future flood damage in Findlay will require all levels of government to work with the private sector, non-profit organizations, citizens, academia, and other interested parties. It will be a challenge to balance competing needs with limited resources to achieve the common goal of sustainable resource management.



A message from the OFMA Chair

Alicia Silverio, CFM—Environmental Specialist
ODNR, Division of Water—Floodplain Management Program

As floodplain management professionals, I truly believe we see the world through different eyes. We observe flooding (or the potential for it) everywhere we go. Aside from all the floodplain management issues and regulations that I encounter through work and OFMA, I constantly think about flooding. (I believe this is more of an occupational hazard than a commentary on my social life.) Even outside of work hours, I notice floodplain development wherever I travel. Every time it rains, I become concerned and wonder if and where there will be flooding. When I see various floodplain development projects, I wonder if they were designed to withstand the effects of flooding. I often find myself scrutinizing each news-cast for the incorrect subtleties about the NFIP and wondering how to give the public the correct information. Call me obsessed, but it's true. Based on the comments I receive daily from floodplain managers across Ohio, I know that I'm not the only one who sees the world from this perspective.

Our interest in flooding is not an obsession, but it is a sincere concern about the long-term sustainability of our communities. Damage to homes, businesses, and infrastructure is costly. The danger to public health and safety from flooding is alarming. When we witness our own communities repeatedly suffer the devastating effects of flooding, how do we ensure that these situations do not worsen over time? How do we convince our citizens, public officials, and businesses that flooding could be just one rainstorm away? I don't know that there's a perfect answer to these questions, but I am certain that finding your community-specific answer is an effort worth making.

Since 1964, 30 out of 44 Presidential Disaster Declarations in Ohio were the result of flooding. Inevitably, there will be flooding. How do you, as a Floodplain Manager, deal with this inevitability? Ask yourself this important question, "What can my community do to minimize flood risk?" Identify the possibilities, and then decide what your community can accomplish in the short term and what activities should be implemented over time. Make decisions today that are in tomorrow's best interest. As floodplain management professionals, we must remember that we are stewards of the floodplain. We are responsible for fostering an attitude towards sound and effective floodplain management. You decide how to create sustainability within your community.

Are you aware of resources available to assist you

minimize flood risk within your community? ODNR and OFMA are both available to arm you with information and guidance that will help you accomplish floodplain management goals. Consult with other Ohio floodplain managers who have encountered success and setbacks and learn from them. Work with other public officials within your community to integrate and coordinate local resources. Keep your public informed and involved - their interest and support is needed to get your job done.

The next time thoughts of flooding creep into your mind and there's no rain in sight, go ahead and try to convince yourself it's just a healthy interest. You're not alone, I'm probably still thinking about it too...

OFMA Activity Update:

December 2007, OFMA evaluated and revised its Strategic Plan to ensure the organization's efforts are focused on achieving the mission and vision of the organization.

In March 2008, OFMA submitted correspondence to the Ohio Congressional Delegation regarding the unprecedented scope of project specific earmarks in competitive grant programs like Pre Disaster Mitigation (PDM).

Ongoing Activities:

- OFMA is looking for individuals interested in serving on the Executive Board. The organization is working to prepare a slate of candidates for the 2008 Election at the fall conference.
- OFMA continues to work closely with ODNR and the Ohio Building Officials Association (OBOA) to provide post flood damage assessment training and response.
- Planning for the 2008 Ohio Statewide Floodplain Management Conference is underway. The Conference Committee is working to generate an agenda that provides the most current information on floodplain management strategies and issues. OFMA will be offering scholarships to Floodplain Managers interested in attending the conference. For scholarship information, visit www.ofma.org/education/.
- OFMA is continually updating its website to provide current information for Ohio's floodplain management community.



Got HAZUS-MH?

Matt Leshner, CFM—Environmental Specialist
ODNR, Division of Water—Floodplain Management Program

FEMA works with states and local governments to help identify high-risk areas susceptible to floods. For these high hazardous areas, FEMA has established minimum regulations that NFIP participating communities must follow to help reduce the loss of lives and personal property. Why do people and businesses take the risk of developing in these high hazards area? It may be because they do not think the hazard will impact them, or because the cost of damage is not obvious at the time of purchase. It is up to people and business owners to understand their risk from natural disasters. To help show what is at risk and how big the impact can be, FEMA has developed HAZUS-MH. This risk assessment tool uses computer software to identify high-risk areas and determine the impacts natural disasters will have on communities. HAZUS-MH can also be used for future planning and mitigation activities to compare alternatives for reducing the risk to people and property.

HAZUS-MH provides potential loss estimate for physical damage to buildings and infrastructure; economic loss due to lost jobs; business interruption and repair costs; and social impacts, including shelter needs and population impacts. Estimates can be made to support planning, rescue, and recovery efforts. FEMA has worked with the National Institute of Building Sciences to develop HAZUS-MH, which is based on a Geographic Information Systems (GIS) platform. To perform damage estimates, HAZUS-MH includes default demographic data and general building stock information. This default data set is broken down by building construction type and building function. A basic analysis can be performed using the default data set, but it is possible to supply more detailed local data to improve the analysis capability. HAZUS-MH provides refined damage estimates if data specific to the study area is supplied.

Communities can focus on the risk areas for specific events such as the 25, 50, or 100-year flood. HAZUS-MH will identify the areas expected to be inundated during each flood event and will estimate the potential impacts to residential and commercial buildings, schools, critical facilities and other infrastructure.

Before the disaster occurs, communities can use HAZUS-MH for planning to identify locations that are considered high risk. Land use regulations can be used to discourage development in the highest risk areas. Communities may decide to leave high-risk areas as green space, which provides storage for stormwater as well as recreation opportunities. This information can be used to guide development away from the high hazard areas to reduce damages. By restricting development in high hazard areas, communities maintain a high regard for their citizen's safety and reduce impacts to community infrastructure.

HAZUS-MH can also be used as a mitigation tool to prioritize cost effective projects and solutions. The user has the ability to run different scenarios to identify which areas would most benefit from mitigation activities. To accomplish this task, existing conditions can be modified to demonstrate potential impact sites. The application allows modifications to be made to the general building stock (*e.g.* retrofit, elevate, or demolish) that would represent the mitigation activity in the HAZUS-MH analysis. These various scenarios can be compared to existing conditions to determine what mitigation activity is most beneficial.

The State of Ohio is taking advantage of the HAZUS-MH risk assessment capability in updating the State Hazard Mitigation Plan. In a joint effort by the Ohio Department of Natural Resources, Ohio Emergency Management Agency, and the U.S. Army Corps of Engineers, HAZUS-MH loss estimations have been developed for the 25 and 100-year flood events in 49 of Ohio's counties. The use of HAZUS-MH for hazard identification and risk assessment will enhance the existing flood risk information prepared for the State plan. The damage potential information developed through HAZUS-MH will support planning efforts and will provide a better understanding of structural impacts in both the 25 and 100-year events. Emergency management agencies will use the detail to better serve the citizens of Ohio.

If your community is interested in learning more on using the risk assessment software go to: www.fema.gov/plan/prevent/hazus/. Instructions and a free copy of the software can be downloaded at this site.



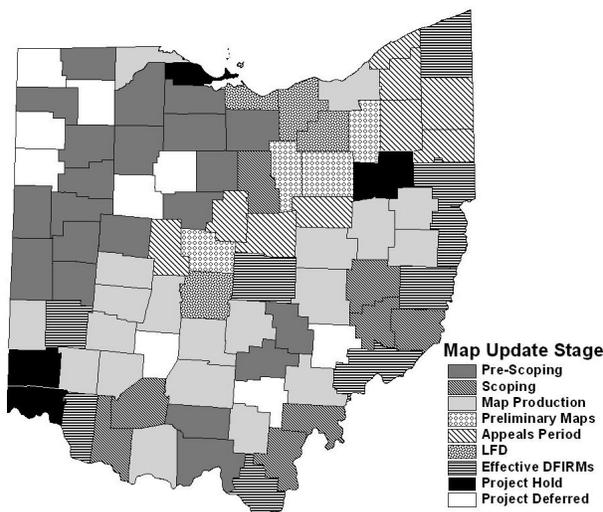
Ohio Map Modernization Update

Jonathan Sorg, CFM—Environmental Specialist
 ODNR, Division of Water—Floodplain Management Program

FEMA’s Map Modernization Initiative is nationwide, with a projected need of one billion dollars to support the goal of modernizing the nation’s inventory of flood maps. The ODNR-Division of Water, Floodplain Management Program is coordinating the State’s involvement. Until the initiative is finished, **The Antediluvian** will carry this feature, highlighting the status of flood map updates that are ongoing.

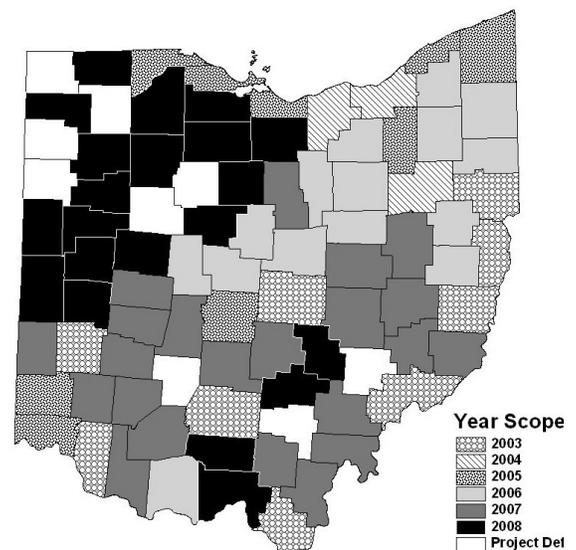
Seventy-nine counties have begun the map update process to date. Figures below better illustrate the map update process, each county’s current stage of map update, and the years they should be funded to begin their respective projects.

ODNR recently received sequencing changes from FEMA for several counties in the *Pre-Scoping* and *Scoping* phases of Map Modernization. Nine county projects have been deferred due to reduced funding for 2008. Counties within this group were excluded from funding based on relative flood risk (*i. e.* flood insurance claims, policies, flood disasters, population, structures at risk, *etc.*). These counties will be priorities with future funding for continuing Map Modernization past Fiscal Year 2008. Counties deferred include: Fayette, Hardin, Henry, Morgan, Paulding, Van Wert, Vinton, Williams, and Wyandot.



This figure represents each county’s current stage in the map update process.

Counties that are currently in the *Pre-Scoping Activities* stage and should have a *Scoping Meeting* this Spring include: Allen, Auglaize, Crawford, Darke, Defiance, Fulton, Hancock, Hocking, Huron, Logan, Marion, Mercer, Miami, Perry, Pike, Putnam, Sandusky, Scioto, Seneca, Shelby, and Wood.



This figure represents the approximate year each county will be funded to begin the flood map update process.

Counties in the *Map Production* phase are: Adams, Athens, Carroll, Champaign, Clark, Clinton, Coshocton, Cuyahoga, Fairfield, Greene, Harrison, Jackson, Lucas, Madison, Muskingum, Pickaway, Preble, Ross, Tuscarawas, and Warren. (Please note that Map Modernization projected funding was reduced in 2007, and *Map Production* was delayed for some counties having their *Scoping Meetings* this past June. Most of these counties are considered priorities for *Map Production* in Fiscal Year 2008.)

FEMA has issued new flood mapping guidance for areas landward of levees currently shown as being protective to the 1-percent-annual-chance flood. Communities with this type of levee will be required to provide adequate documentation that their levees were built and maintained in accordance with

(Continued from page 18)

FEMA standards. Four county updates have been delayed until they provide such documentation for their levees: Butler, Hamilton, Ottawa, and Stark.

Preliminary Maps have been issued for Ashland, Delaware, Geauga, Holmes, Knox, Lake, Mahoning, Morrow, Portage, Summit, Trumbull, Wayne, and Union counties.

The *Appeals Period* has begun for Trumbull County. *Appeals/Comment Periods* have ended recently for Geauga, Holmes, Knox, Morrow, and Union counties.

The following *Letters of Final Determination* have been issued: Erie County (effective August 28, 2008), Franklin County (effective June 17, 2008), Lorain County (effective August 19, 2008), and Medina County (effective August 4, 2008).

Ten counties presently have effective DFIRMs in Ohio: Ashtabula, Belmont, Clermont, Columbiana, Jefferson, Lawrence, Licking, Montgomery, Ross, and Washington.

Should you have any questions about the map update process, or Map Modernization in Ohio, please contact ODNR's Jonathan Sorg at (614) 265-6780 or Jonathan.Sorg@dnr.state.oh.us. Also, please visit our website at www.ohiodnr.com/water/floodpln/map_modernization/default/tabid/3522/Default.aspx.

Flood Insurance Grandfather Rules

Jonathan Sorg, CFM—Environmental Specialist
ODNR, Division of Water—Floodplain Management Program

When FEMA issues a new map to a community, many citizens question how the map changes affect them. In order to recognize policyholders who have maintained continuous flood insurance coverage and/or who have built in compliance with the prior FIRM, the Federal Insurance and Mitigation Administration instituted grandfather rules. Listed below are the rules as they pertain to Pre-FIRM and Post-FIRM structures taken from FEMA's "NFIP Map & Zone Grandfather Rules." You may download this brochure on ODNR's website www.dnr.state.oh.us/Water/FloodPlains/FloodInsurance/tabid/18985/Default.aspx.

Pre-FIRM (construction prior to the date of the community's initial FIRM)

- 1) If a policy was obtained prior to the effective date of a map change, the policyholder is eligible to maintain the the premium from the prior zone and base flood elevation as long as continuous coverage is maintained. The policy can be assigned to a new owner at the option of the policyholder.
- 2) If a building is Pre-FIRM and a policy was not obtained prior to the effective date of a map change, the applicant is always eligible to receive the Pre-FIRM subsidized rates based on the new map.

Post-FIRM (construction on or after the date of the community's initial FIRM)

- 1) If a policy was obtained prior to the effective date of a map change, the policyholder is eligible to maintain the prior zone and base flood elevation as long as continuous coverage is maintained. The policy can be assigned to a new owner at the option of the policyholder.
- 2) If a building was constructed in compliance with a specific FIRM, the owner is always eligible to obtain a policy using the zone and base flood elevation from that FIRM, provided that proof is submitted to the insurance company. If the structure was located in flood zone B, C, or X at the original time of construction, proof should include either the FIRM used at the date of construction, or a letter from a community official stating the structure was built in compliance with the local flood damage reduction regulations. If the structure was not located in flood zone B, C, or X at the original time of construction and it was built in compliance, proof should include an Elevation Certificate, the FIRM showing the old base flood elevation, or a letter from the community verifying compliance. Continuous coverage is not required.

The Antediluvian

Ohio's Floodplain Management Newsletter

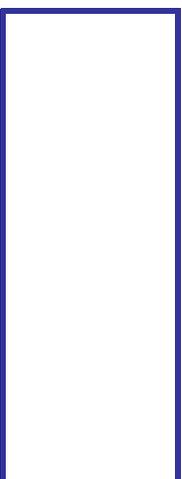


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Kimberly M. Bitters, Editor.

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