

# The Antediluvian

{an · te · dā · lōō · vē · ən: Before the Flood}

## Ohio's Floodplain Management Newsletter

Reduce flood damage and protect and promote natural functions of floodplains

Volume XVII, Issue 2

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### ODNR DIVISION OF SOIL & WATER RESOURCES FLOODPLAIN MANAGEMENT PROGRAM

Reducing flood damage and promoting natural functions of floodplains!



While recognizing and supporting consistent, pre-flood local floodplain management as the *most* effective flood risk mitigation strategy, there are also many post-flood successes of the Ohio Floodplain Management Program.



#### Elevating home in Village of Lore City (Guernsey County)

A series of severe floods in the 1990s prompted many citizens to use technical assistance information provided by DSWR, to better protect their existing structures. Responses included, purchase of federal flood insurance, installing foundation flood vents, lifting HVAC units, using flood resistant materials, and in some cases, as shown above, elevating entire structures or, as below, relocating out of the floodplain.



#### Demolition of severely flooded homes in the Village of Russells Point (Logan County)

In 2003, a neighborhood that recurrently floods experienced a multi-crested flood so severe that the entire first floor of one of the structures shown above collapsed. In cooperation with State and Federal agencies, village officials successfully proposed a mitigation project for this area. Property owners were offered a fair market (pre-flood) price for their devastated structures and when the next flood came, within a year, the owners who accepted the offer were



#### Reconfiguration of a home in the Village of Powhatan Point (Belmont County)

During the Ohio River flood of 2005, many more homes were severely flooded, including the one pictured above. But, because these owners had purchased flood insurance, they not only were able to use their flood insurance settlement to rebuild, but with FMP guidance, learned about and received up to \$30,000 in *Increased Cost of Compliance Coverage* that is included with every standard federal insurance policy, over and above their flood insurance claim. With this additional help, they constructed an elevated level for their home, above the regulatory flood elevation. The original first floor is now used for parking, storage, and access.

For more information, contact us at: <http://www.dnr.state.oh.us/tabid/3511/Default.aspx> or (614) 265-6750.

## ***FEMA Announces Cost Saving Flood Insurance Rates in Newly Mapped Flood Hazard Area***

By Richard Roths, AICP—Principle Planner and Region V Regional Program Manager  
iService Team

Property owners required by their lenders to purchase flood insurance due to new flood hazard identification in their area may be eligible for flood insurance discounts for the next two years. On Jan. 1, 2011, FEMA introduced the Preferred Risk Policy (PRP) Extension, which is intended to offer savings to people with structure(s) in newly identified Special Flood Hazard Areas (SFHA).

In July of 2010, the Acting Federal Insurance and Mitigation Administrator announced FEMA would revise its Preferred Risk Policy (PRP) eligibility. On January 1, 2011 owners of buildings designated in a SFHA dating back to October 1, 2008, may be eligible for **the lower cost PRP for two years** following the effective date of the map change.

Several factors prompted FEMA to offer a short term reduced-rate flood policy, one of which is the country's poor economic conditions. Other factors include the large number of counties nationwide receiving new flood hazard maps within a short time period, expanding floodplains due to de-accredited levees, and natural geographic changes that have resulted in new Base Flood Elevations and increased flood risk.

This means property owners and renters who were formerly exempt from mandatory flood insurance purchase requirements imposed by lenders may now be required to purchase flood insurance. The Preferred Risk Policy Extension eases the financial burden on affected property owners, allows them time to understand and plan for the financial implications of the requirement, while providing a lower cost policy for up to two years.

### **How Does the PRP Extension Work?**

If a new Flood Insurance Rate Map (FIRM) is adopted by a community between October 1, 2008, and January 1, 2011, structures that were moved from B, C, or X zones into an A or AE zone due to map revisions may be eligible for a PRP policy. Those who qualify and purchase a new policy in 2011 or renew a policy after January 1, 2011, can obtain a PRP Extension policy for two years. After two years the determination for rating the policy will be based on the zone in which it was rated prior to the PRP Extension. The PRP Extension will also be available to participating communities undergoing map updates after January 1, 2011.

The Preferred Risk Policy Extension should not be confused with the existing Preferred Risk Policy that is available only in B, C or X zones to properties that have a very limited number of insurance claims or disaster assistance applications. Policyholders in the B, C and X zones are not required to purchase flood insurance and can select the amount of coverage that best fits their needs. Whereas, federally insured or regulated lenders will require specific flood coverage to meet or exceed the mandatory purchase regulations in the Flood Disaster Protection Act of 1973 and amended by the National Flood Insurance Reform Act of 1994.

To determine whether a property is eligible for the PRP Extension, the underwriting insurance

*(Continued on page 3)*

(Continued from page 2)

company or agent must:

- verify the loss history of the building
- identify the building on current and previous flood maps
- maintain documentation of the flood risk zone before and after map change

FEMA is working with lenders and insurance providers to facilitate the implementation of the program.

### **How Do Local Officials Fit Into This Picture?**

Many insurance providers will use available data from [www.msc.fema.gov](http://www.msc.fema.gov) (FEMA Map Service Center) or use flood hazard determination firms to determine the flood zones before and after map changes, others may direct their clients to go to their local communities to obtain the information needed to verify eligibility. Information can include:

- Requests for copies of Letters of Map Amendment (LOMAs), Letters of Map Revision (LOMRs) and Letters of Determination Review (LODRs);
- Copies of the flood map with the property clearly marked;
- A community letter, indicating the policyholders address and appropriate map information; or,
- Copies of completed Elevation Certificates.

If the community provides a written response, it must:

- Be on community or department letterhead;
- Include name of property owner and property address;
- Include the type of building;
- Include the prior flood zone, prior map date and prior community number, and the map panel number and suffix; and,
- Include the name and title of the official writing the letter, including signature, date signed and contact information.

For additional information regarding the Preferred Risk Policy Extension, go to [www.floodsmart.gov](http://www.floodsmart.gov); type "Preferred Risk Policy Extension" in the search box in the upper right-hand corner of the page. If you have additional questions, you can also contact your National Flood Insurance Program (NFIP) State Coordinator's office, FEMA Region V Floodplain Management and Insurance Branch, or the NFIP Regional Program Manager's office at (312) 596-6728. 

### **ASFPM Welcomes New Associate Director of Operations: Ingrid Danler**

Ingrid served as the Executive Director of the Fox Waterway Agency in Illinois for the past 14 years. Ingrid contributed to the Fox Waterway Agency's success and gained extensive experience overseeing environmental restoration, water quality management, and other water projects. Additionally, Ingrid has significant experience working with elected local officials as well as state and Federal legislators. Ingrid joined ASFPM's executive management staff, Larry Larson, Executive Director, and Chad Berginnis, Associate Director, on June 1, 2011. Welcome Ingrid!

We also want to take a moment to thank George Riedel for his five years of service, working for the ASFPM as Deputy Director of Operations. Good luck, George, in your next role!

## County Implementation of a Municipality's Floodplain Regulations

By Dylan Pendleton—Environmental Specialist

ODNR, Division of Soil and Water Resources—Floodplain Management Program

Throughout Ohio, there are many communities with elevated flood risk. Unfortunately, many of these communities do not have the people or resources to effectively administer their floodplain regulations. If these communities do not properly administer the Flood Damage Reduction Regulations, it is possible that they could be suspended from the National Flood Insurance Program (NFIP). A community that does not have the money or resources to administer the NFIP requirements definitely does not have enough money to risk losing the financial benefits of NFIP participation.

According to the *FEMA-480 Floodplain Management Requirements*, the Floodplain Administrator position is commonly filled by an existing local staff person such as building inspector, zoning official, engineer, or planner. It also states that a community can contract to have the job done by the county, regional planning agency, another jurisdiction or authority, or a private firm (*FEMA-480*, 7-12). The Ohio Revised Code Section 307.15-*Contracts with other governmental entities* allows for an inter-jurisdictional agreement between a county and a municipality.

To legally allow the county Floodplain Administrator to serve as the community's Floodplain Administrator, a couple of steps must be taken. First, a Memorandum of Understanding must be adopted by both legislative bodies. This is a document that is legally binding and establishes the transfer of administrative authority between jurisdictions. Please send the adopted MOUs to ODNR's, Floodplain Program to facilitate our contacting the correct party with regard to the NFIP. Next, it is a good idea to amend the regulations to designate the correct position of the new Floodplain Administrator. This can be done by amending the appropriate section that designates the Floodplain Administrator, as shown in Section 3.1 of the 2006 Model *Special Purpose Flood Damage Reduction Regulation*.

Even though a community may opt to have their floodplain management regulations administered by an outside party, they must have a local Board of Appeals as well as local enforcement capabilities. The community can either use an existing board, such as a Board of Zoning Appeals, or the community could establish a new board for these duties. For example, Fayette County has a unique board that fills these duties called the "Fayette County Floodplain Board of Appeals". This Board is made up of three county officials, the County Engineer, Chairman of the County Planning Commission, and the County Chief Building Official along with two members appointed by the participating Village's Councils. This satisfies the Appeals Board requirements for the county and the municipalities that are administered by the County Floodplain Administrator. A new Appeals Board can be established by amending Section 5.1(A) of the 2006 Model *Special Purpose Flood Damage Reduction Regulation*. Language for appointing an existing Board to serve as the Appeals Board for the floodplain regulation can be found in the guidance document entitled *How to Use the 2006 Model: Flood Damage Reduction Regulations*. Both of these publications can be found on the Floodplain Management Program's website.

It is important to remember that when a county is contracted to administer the Floodplain Regulations of a municipality, the county must use the municipality's adopted regulation including higher standards. Even though the county is empowered to administer the floodplain regulation, it must be implemented in the way that it was adopted by the municipality's legislative body. 💧



## Why do people drive through flooded crossings?

NFIP/CRS Update; January—April 2011

It's well known among floodplain managers—and confirmed by the National Weather Service—that a significant portion of annual flood deaths occur when people are trapped in vehicles [see statistics at [www.weather.gov/om/hazstats.shtml](http://www.weather.gov/om/hazstats.shtml)]. All too often people in cars or trucks drive through a flooded crossing or wash even though signs caution them against it, and even in the face of public service announcements, news stories about the consequences of such actions, and laws like the one in Arizona that holds people financially liable for some emergency response costs if they must be rescued from flood waters after crossing a barricade.

Why do people take such risky action? Research by a geography graduate student at the University of Arizona sheds some light on this nagging question. The findings of her study contradict the popular notion held by many flood risk managers that the people who drive through flooded areas are being irrational or impulsive, or are not fully aware of the nature and consequences of the flood risk.



On the contrary, according to Ashley R. Coles, people make calculated decisions about whether to drive through a flooded area, and base those calculations on many factors. In a survey of about 170 people in the Tucson area, Coles found that:



- About 90% of the people interviewed trusted the warning signs and believed that the barricades had been placed for a good reason.
- About 78% of respondents said that they relied on the advice of family, friends, neighbors, and others about whether to drive through a flooded wash or crossing—sometimes they even made a phone call right at the flooded roadway.
- People tended TO cross if they believed that weather conditions were worsening, if they could not find another route to their destination, and if they saw that other vehicles had made it through the water.
- People tended NOT to cross if children or other family members were in the vehicle, it seemed too dangerous, or they thought that driving through the flood water might damage their vehicle.



In sum, Cole said in an interview with the *UANews*, “It’s not that people don’t trust the signs or the information,” but that the signs do not indicate whether it’s dangerous to drive through the water RIGHT NOW. Therefore, “people feel they have to use some other information” to make a decision about what to do.

Excerpted from *UANews*, University of Arizona  
<http://uanews.org/node/37950>



## ***Losing Control, Gaining Perspective*** ***50 Years (and more) of Ohio Floodplain Management***

### **Part 1: The Floodplain Unit**

By Christopher Thoms, CFM—Program Manager

ODNR, Division of Soil and Water Resources—Floodplain Management Program

Fifty years ago, ODNR's Division of Water was authorized by the statehouse to form the Floodplain Unit, empowering it to study floods and their control. In recognition of the program's golden anniversary, and with extensive borrowing and appreciation for *A Legacy of Stewardship* by Sherman L. Frost ([www.ohiodnr.com/portals/0/publications/stewardship/chapt\\_9\\_water.pdf](http://www.ohiodnr.com/portals/0/publications/stewardship/chapt_9_water.pdf)), [see related inset] the following is the first part of an abridged timeline for Ohio's Floodplain Management Program.

Of course, while it did not spring whole from anyone's brow, the Floodplain Unit could look to the Ohio flood causation study of **1959** as a key to its creation. A first of its kind, this comprehensive statewide study of flood problems, controls, and needs in Ohio, was the result of cooperative efforts by the Division of Water and USGS. Following the major Ohio floods of January 1959, Governor DiSalle addressed a **1960** conference of water management professionals. In this presentation, he advocated active and systematic floodplain management by local entities, which included preservation of floodways from encroachment by structural development. The Ohio Water Commission, created in 1960, worked closely with the

"Jack" Frost (1909-2004) known as *Mr. Water*, had a career as a natural resource conservationist in Ohio that spanned more than 50 years. When he first moved to Ohio, Jack worked for the Ohio Forestry Association and then ODNR's Division of Water. Among his many accomplishments, he drafted a pioneering water conservation plan (1959), conducted studies of the State's conservancy districts and watershed programs, worked on innumerable water-related management efforts, served as the Division of Water's Assistant Chief and the Executive Director of the Ohio Water Commission (late 1960's and early 1970's), founded the Water Management Association of Ohio, served as Adjunct Professor at the Ohio State University's School of Natural Resources (mid-1980s on) and as a consultant. In 1979, Jack was inducted into ODNR's Hall of Fame in recognition of his many years devoted to conservation.

Division and lent early and lasting support to Ohio floodplain management. In **1961**, extensive flood damages occurring nationally and in 38 Ohio counties (and fresh memories of the 1959-floods) led to authorization for federal agencies to map floodplains and warn against continued building in flood risk areas. In Ohio, the USGS created flood inundation maps; the Army Corps of Engineers studied 350 miles of floodplains in 60 Ohio communities; and Ohio's new Floodplain Unit, working with community officials, obtained flood profiles for nearly 300 stream miles, and started a statewide system of rain gauges. In **1963**, as 20 Ohio counties were designated drought disaster areas, the Floodplain Unit responded to a Hocking River flood with near record damages. In **1964**, another Hocking River flood and an extensive Ohio River flood prompted federal disaster assistance. In **1966**, the Floodplain Unit assisted with a Soil Conservation Service flood protection program for small watersheds. In **1967**, legislative authorization expanded the responsibilities of the Floodplain Unit, including a program to place historic-flood-height markers on public buildings. Ohio agencies were required to consult with the Division before construction of public facilities in floodplains. In **1968**, ODNR's floodplain staff responded to flooding in 27 southern Ohio counties. That same year, the U.S. Congress created the National Flood Insurance Program (NFIP). Governor James Rhodes designated the Division as Ohio's

(Continued on page 7)

(Continued from page 6)

NFIP-Coordinator. In **1969**, a flood over the July 4<sup>th</sup> weekend in north-central Ohio caused 41 deaths and damaged 292 bridges with \$60-million in damages. In **1971**, the Floodplain Unit offered guidelines for local floodplain management and handled more than 660 requests for local assistance as a report called for a State-level program of floodplain management. The federal Department of Housing and Urban Development began to offer flood insurance for sale in communities with identified floodplains. The Ohio River Basin Commission held its first meeting in Cincinnati. In **1972**, the remnants of Hurricane Agnes brought heavy rains to northeastern Ohio with high waves and flooding along the Lake Erie shoreline. At that time, more than 40 Ohio communities had adopted floodplain regulations. In **1973**, as interest in scenic river preservation and floodplain management increased, the Floodplain Unit assisted the Millcreek Valley Conservancy District with a flood protection project for the lower Mill Creek valley (Hamilton County). Surveys along the Lake Erie shoreline were started as part of a coastal zone management program. In **1976**, the Shoreland Management Unit became part of the Division as a coastal plan was completed. In **1981**, more than 300 specially designed historic flood markers were installed in Ohio communities. In **1984**, the Floodplain Unit responded to almost 1,800 requests for technical assistance, and helped 154 communities with their floodplain management programs. The Ohio Water Advisory Council was formed to consider water related policy, legislation, plans, and programs. In **1986**, ODNR published the *Ohio Stream Management Guide* and the Division cosponsored a conference to present stream management flood loss reduction techniques to farmers and engineers. **1987** was the tenth driest year in Ohio since rainfall records were first established in 1882. In **1988**, April through June was the driest on record. The prolonged drought renewed interest in water rights. The Division, in cooperation with the Water Management Association of Ohio, published a circular, giving an overview of Ohio water law. In **1989**, the Ohio Coastal Management Program was established and a Coastal Resources Advisory Council was created to advise ODNR's Director on coastal issues, flooding, erosion, public access, and leasing of submerged lands. State floodplain standards for the Lake Erie shoreline were furthered clarified.

Formed in 1961, within vivid memory of the smashing floods and seminal efforts of 1959, the fruit of many years' efforts, the Floodplain Unit undertook to promote sound floodplain management in Ohio. The program provided technical assistance with flood damage reduction, floodplain mapping, local regulation adoption and enforcement process, support with federal flood insurance, and NFIP-participation. By 1989 there were over 600 NFIP-participating communities in Ohio. Since its inception, the Floodplain Unit used and, often, developed the best techniques available to promote flood risk reduction, working cooperatively with citizens, professionals, local, state, and federal officials. Though the recurring early emphasis on flood *control* may seem strange (and overly optimistic) given our current emphasis on non-structural approaches, sound floodplain management includes both structural and non-structural techniques as appropriate.

Now housed in ODNR's Division of Soil and Water Resources, today's Floodplain Management Program recognizes the skill with which its foundation was laid, as our predecessors sought to achieve the twin objectives of flood damage reduction and protection of the naturally beneficial functions of floodplains. Subsequent developments will be reviewed in the next edition of *The Antediluvian*.



## **OFMA Update: Promoting Floodplain Management in 2011**

By Shawn Arden, CFM, LEED AP—OFMA Chair  
ms Consultants

There is no doubt that the economic downturn has impacted all of us. Companies from the Fortune 500 to the smallest of businesses have been forced to re-evaluate their budgets and operating plans – with some businesses making permanent operating changes. As we see on the news, government units at all levels are also facing budget shortfalls. These shortfalls put additional stress on government operations and force difficult decisions in funding public programs, including floodplain management.

The Ohio Floodplain Management Association (OFMA) is developing strategies for advocating effective floodplain management during the current economy and through the recovery period. Specific tactics include the following:

- Continue to Discuss the Risk – Through support from state agencies, floodplain management policies and regulations are adopted and implemented at the community level. In order to ensure the protection of the public health and welfare, elected officials require education on the risk of flooding and the potential consequences of a flood disaster occurring in their community or region. Education is needed to build a knowledge base and address the periodic turnover of the elected community.
- Discuss Consequences of Inaction in New Ways – Along with understanding the flood risk for a community, elected officials need to understand the consequences of inaction. This discussion needs to be framed appropriately to fit the current economic conditions. By focusing on how a flood event adversely affects a community's society, economy, and environment, a triple bottom line approach can be created. This approach is ideal for measuring the costs and benefits of floodplain management policy change – and justifying the need for action as a positive investment in the community's future.
- Develop Recommendations – The OFMA Legislative Committee is developing recommendations for policy, planning, and regulatory actions to improve floodplain management in Ohio. These recommendations will be published in an updated Legislative Brochure in the upcoming months.

As expected, 2011 is turning out to be a very busy year for OFMA. If you are interested in joining OFMA or assisting on one of our committees, please contact us at [ohiofma@gmail.com](mailto:ohiofma@gmail.com). Please visit our website for news updates at [www.ofma.org](http://www.ofma.org).

I hope to see you at the conference!

## **2011 Statewide Floodplain Management Conference**

**July 27—28, 2011**

**The Doubletree, Columbus/Worthington**

The Ohio Statewide Floodplain Management Conference is an annual training event that focuses on various elements of floodplain management, such as regulations, insurance, mapping, engineering, and natural benefits. The conference is intended to develop and expand the capabilities of floodplain management professionals throughout Ohio. Please see our website for details:

[www.dnr.state.oh.us/Water/tabid/17934/Default.aspx](http://www.dnr.state.oh.us/Water/tabid/17934/Default.aspx)

## ROLL CALL

Hey there! My name is Ben Kelley, and I am one of three new Environmental Specialists with the ODNR, Floodplain Management Program. Previously, I worked with the ODNR, Division of Forestry through the Woodland Job Corp Program. In Forestry, I assisted in the implementation of a number of timber stand improvement projects aimed at strengthening the overall health of Ohio's State Forest Lands. I also have three years of work experience in fisheries, where I primarily performed biological assessments on a wide variety of water systems.



In 2009, I graduated from Shawnee University with a Bachelor of Science in Biology and a concentration in Environmental Ecology. In 2006, I graduated from Hocking College with an Associate in Natural Resource Management. Throughout my college and work careers, I have always found a way to devote time to my true passion: outdoor activities.

I am extremely excited about my new role as a member of the Floodplain Management Program, an abundantly qualified team. I am thrilled with the opportunity to continue my work with individuals and communities to maintain the wise use of Ohio's natural resources.



Hello, my name is Dylan Pendleton. I am one of three new Environmental Specialists with the ODNR-Floodplain Management Program. I earned a Bachelor's of Science in Biology from the University of Akron in the spring of 2010. During that time I also earned an Environmental Studies certificate, was an active member of the ski club, and an active member of the Air Force R.O.T.C. Detachment 630 for two years. In my free time I enjoy many outdoor activities and spending time with family and friends.

In the summer of 2009, I served as an intern for the Yellow Creek Watershed Restoration Coalition, which covers Jefferson, Harrison, and Columbiana counties. During my stint with Yellow Creek, I assisted the Watershed Coordinator and other JSWCD staff with water sampling, data processing, and other duties. During my senior year of college, I was an intern for a program called "Sustainability for Educators and the Environment" (S.E.E.) located in Kent, Ohio. In that position, I spoke to fifth and sixth grade children about the importance of sustainable practices. After graduation, I landed a position as an Environmental Technician with the ODNR-DMRM Acid Mine Drainage Program. Working under the supervision of a biologist, I assisted with macro-invertebrate and water sample collection, electro-fishing, and, of course, data processing. From these experiences I have gained valuable knowledge, and made many new friends.

I am excited and proud to be working along side the expert staff of the Floodplain Management Program here in Columbus. I am also looking forward to assisting communities throughout the state to ensure the wise management of our floodplains.

(Continued from page 9)



Hello! My name is Katherine Skalak and I am one of the new Environmental Specialists with the ODNR, Floodplain Management Program. Prior to my position at ODNR, I was the Darby Creek Watershed Coordinator. In this role, I coordinated efforts of both the agricultural and environmental communities to develop a watershed plan. During my time at the Ohio State University, I worked on drainage and composting research. I have written several research papers concerning these topics for conferences. I am an Engineer in Training (EIT) as recognized by the State Board of Registration for Professional Engineers and Surveyors of the State of Ohio. I received my Bachelor of Science in Agricultural Engineering, with a specialization in Soil and Water Engineering from Ohio State University in December 2004.

Hello! My name is Randy Keitz, and I began working as an Engineer with the ODNR Division of Soil & Water Resources (DSWR), Floodplain Management on April 25, 2011.

I have a Bachelor of Science in Mining Engineering from Ohio State University, a Master of Science in Civil Engineering from the University of Akron that focused on hydraulic and geotechnical engineering, and as part of my continuing education, I obtained extensive training in stream morphology. Additionally, I am a registered professional engineer in Ohio.

I have worked with the ODNR for 26 years at both the Division of Mineral Resources Management (DMRM) and the former Division of Soil and Water Conservation (DSWC). At the DMRM, I participated in regulation and enforcement of surface and underground mining, and spent about ten years designing and overseeing the construction of Abandoned Mined Land (AML) reclamation and emergency projects. At the DSWC, I participated as a member of the Technician Development Program team that developed and provided technical training for County Soil & Water District (SWCD) staff, provided stream morphology assessments, participated on many stream projects teaching and applying stream morphology principles to improve project outcomes, provided sedimentology and stormwater management training, and evaluated watershed management plans to consider and implement strategies that provide more cost-effective water quality services.

I am excited to join the Floodplain Management staff. My stream morphology and watershed management experience has taught me how floodplains provide extensive low-cost services (*e.g.*, storing water to reduce downstream peak flows, maintaining stream stability, improving water quality, providing habitat, and many more), and yet how these services are not sufficiently understood and considered when making floodplain management decisions. I look forward to listening and learning about the unique floodplain management issues facing Ohio communities, and providing technical services to help our communities meet and exceed the minimum NFIP standards.



We're very excited to have these new additions to the Floodplain Staff so that we can better serve the Floodplain Community of Ohio! Please join us in welcoming our four new staff members to the Floodplain Program.





Floodplain Management Program (from left to right): Alicia Silverio, Dylan Pendleton, Katherine Skalak, Tanisha Barnett, Christopher Thoms, Tim Beck, Ben Kelley, Kimberly Bitters, and Matt Leshar.

### **In Deep with Mississippi Flood Control**

Natural Hazard Center; University of Colorado, Boulder  
June 2011



*This article has been reprinted with permission from the Natural Hazard Center. The article can be found on the following website:*  
[www.colorado.edu/hazards/dr/currentdr.html#1](http://www.colorado.edu/hazards/dr/currentdr.html#1)

To breach or not to breach has long been the question when it comes to the swollen Mississippi. Perhaps, experts say, it's time for a different query. Should we give up trying to control the Mississippi altogether?

The answer to that question isn't an easy one. Our 100-year death grip on the mighty river has brought a tangle of boons and burdens that aren't easily unknotted. Although the widespread and serious flooding seen in recent weeks has led to calls for systemic change, returning the river to a more natural state could unleash a deluge of unwanted economic effects.

"The debate is more engineering versus less engineering," Christopher D'Elia, dean of Louisiana State University's School of the Coast and Environment told the Los Angeles Times. "There are a lot of people who just want to build more levees and dikes and control [the river] that way, but the people who understand sediment dynamics understand that's not going to work."

For Louisiana, where levees cause land-building sediments to be carried out to sea leading to salt wa-

*(Continued on page 12)*

*(Continued from page 11)*

ter encroachment and eventual inundation, the solution may be to "let the river run wilder," according to the Times. But D'Elia recognizes that less engineering also has costs, "...how do you manage that socially? How do you recover the social and economic loss that occurs? That's the challenge we're in right now. We're absolutely hamstrung by this situation."

Upstream, D'Elia's comments are equally relevant to the loss of agricultural land should the river be allowed to run wild.

"To abandon the floodplains for crop production would shift the cost of food," Harold Deckerd, Missouri's assistant state conservationist for water resources, told the Wall Street Journal. "The cost of food would become astronomical."

Even so, it's obvious that something will need to give. Severe flooding is becoming increasingly prevalent and the river basin—which has lost more than 35 million water-absorbing acres in its upper basin alone, according to American Rivers—is increasingly unable to handle the stress. American Rivers' Sandra Postel suggests the solution requires striking a balance.

"What is needed is a comprehensive plan to add ecological infrastructure to complement engineering infrastructure—specifically to expand wetlands and re-activate floodplains so as to mitigate future flood risks," she writes in National Geographic Daily News. "Instead of letting the nation's ecological infrastructure degrade further, federal and state authorities should work to expand and rebuild it. Cadres of ecological engineers should join civil engineers in shoring up the nation's flood defenses. Re-creating wetlands and re-activating floodplains in strategic locations will result in a more robust and resilient flood protection system."

There's some indication the United States might be slowly heading in that direction. The Clean Water Framework released by the White House in late April calls for restoring important bodies of water and updating water policies to include more ecological input. The Army Corps of Engineers is also expected to change its focus from building levees to "providing some degree of restoration and ecological services in heavily altered ecosystems," according to a National Academies report.

That sort of political will could go a long way toward finding a balance, but many experts have pointed out that we also need to stop building in vulnerable areas. One of the great unlearned lessons of the Mississippi is that we shouldn't live and work too close to it, Postel points out.

"But fifteen years later, when the 2008 flood hit, there was little evidence of lessons learned. Instead of calling floodplains and wetlands back into active duty, officials in the region had permitted even more floodplain development. According to Nicholas Pinter of Southern Illinois University in Carbondale, 28,000 new homes and 6,630 acres of commercial and industrial development have been added on land that was under water in 1993."

Time will tell if we get any wiser where Mississippi River flood management is concerned. But from Minnesota to Louisiana, it's clear there's little give left in the mammoth water system, and we can no longer afford to be inflexible.

"We need a bend but don't break approach to flood management," American Rivers' Andrew Fahlund told the Wall Street Journal. "Right now, there's very little bending and the breaking has catastrophic consequences."



## ***DON'T GET BIT by the TEETH of a STORM!***

By Ben Kelley—Environmental Specialist  
ODNR, Division of Soil and Water Resources—Floodplain Management Program

According to the National Oceanic and Atmospheric Administration (NOAA) in 2010, 58 fatalities occurred nationally due to lightning strikes. Ohio had one lightning strike fatality in 2010. Ohio is ranked number six among the top ten states in lightning related deaths and injuries while Florida still remains ranked number one

[www.lightningsafety.noaa.gov](http://www.lightningsafety.noaa.gov). The Ohio Committee for Severe Weather Awareness would like to take a moment to remind you that the week of June 19-25, 2011 is Lightning Safety Awareness Week. The goal for this week is to remind you of the severity of thunderstorms and lightning risks. Everyone knows that thunderstorms, in many cases severe, are associated with flash flooding and lightning, these are periods when risk to your safety is high.



### **Lightening and Thunderstorm Safety Tips**

Since summer is approaching rapidly, watch for developing thunderstorms. As the sun heats the air, pockets of warmer air start to rise and cumulus clouds form. Continued heating can cause these clouds to grow vertically into towering cumulus clouds, often the first sign of a developing thunderstorm. When you see signs of a developing thunderstorm seek shelter immediately. Lightning can strike as far as 10 miles away from where it is raining. That is about the distance that you can hear the thunder. So if you can hear thunder, you are within striking distance!

### **Seek Shelter**

A house or other substantial building offers the best protection from lightning and flash flooding. For a shelter to provide adequate protection, it must contain a mechanism for conducting the electrical current from the point of contact to the ground, such as gutters and downspouts. Also, outdoor utility wires and plumbing will ground lightning if the building is struck. To achieve the desired outcome, these mechanisms may be on the outside of the structure, contained within the walls of the structure, or a combination of the two. Try to avoid small wooden, vinyl, or metal sheds, if at all possible, because they offer little or no protection from lightning. Do not assume you will be safe in your vehicle; this is a last resort shelter. If your vehicle is struck by lightning, it will be a grounding mechanism for the current; but, if waters rise you could be trapped. Many thunderstorm victims could have avoided hardship by seeking shelter if they would have kept away from areas of possible flash flooding. Even if a structure is adequate for lightning protection, do not immediately assume that you are safe. Floodwaters can rise very rapidly and move through or around your location with an untamed velocity.



Once you have sought the best available shelter, minimize the risk of being struck indoors by staying off corded phones, computers and other electrical equipment that put you in direct contact with electricity. This is because lightning can travel from the outside of a building down these indoor conductors. Stay away from indoor and outdoor pools, bathtubs, showers, and

*(Continued on page 14)*

(Continued from page 13)

other plumbing. If you are in your vehicle, do not attempt to get out during the storm, be aware of your surroundings, and never attempt to drive through rising flood waters. Once you believe that the storm has passed, wait thirty minutes after the last sound of thunder and assess your surroundings before going outside.



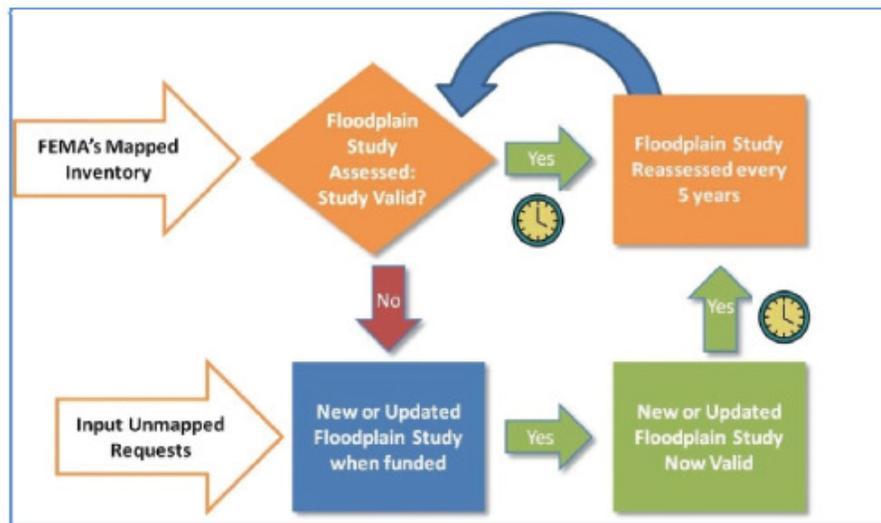
**More Information**

Using some of these reminders will help to protect your safety. For more information regarding safety tips with lightning and thunderstorms please see the OCSWA website at [www.weathersafety.ohio.gov/](http://www.weathersafety.ohio.gov/). Also, please visit the National Weather Service website at [www.lightningsafety.noaa.gov](http://www.lightningsafety.noaa.gov).

**Development of the Coordinated Needs Management Strategy (CNMS)**  
 By Matt Leshner, CFM—Environmental Specialist  
 ODNR, Division of Soil and Water Resources—Floodplain Management Program

Over the past six years, FEMA, ODNR, and local communities throughout Ohio have been working together to update Flood Insurance Rate Maps through FEMA’s Map Modernization Program. As FEMA transitions from the Map Modernization Program to the Risk Mapping, Assessment and Planning (Risk MAP) Program there are increased incentives to evaluate the validity of flood studies throughout Ohio. Floodplains inherently change over time, which is a characteristic that makes their management and mapping a challenge. The underlying concern is that there will be an unending supply of mapping needs due to the changing nature of the physical environment, climate patterns, and engineering methods. In addition, FEMA’s existing system for recording mapping needs has a few challenges. Unfortunately, FEMA’s system is inconsistently used, stored in inconsistent formats, and requires a significant investment to maintain. It would be tremendously beneficial for this data to be easily accessible and usable as well as stored in a predictable, standardized, digital format. If this data met these needs, then it would readily support mapping needs assessment, information management, planning, and reporting activities. That is why FEMA has developed the Coordinated Needs Management Strategy (CNMS). The CNMS is intended to improve efficiencies in communication, documentation, analysis, planning, tracking, and reporting of floodplain mapping needs.

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CNMS Lifecycle found on FEMA factsheet dated March 2011

(Continued on page 15)

(Continued from page 14)

The CNMS uses a GIS platform, which provides spatial analysis capability. Thus, communities, ODNR, and FEMA are afforded an effective means to visualize, enter, and update an inventory of mapping needs as well as visualizing how studies spatially relate to other geographic features. By standardizing and storing data in a geospatial format, CNMS will accomplish the objectives of maintaining current data in a readily available format for improved analysis and reporting.

The review and analysis of flood studies consists of critical and secondary elements (see Table 1 below for details). There are seven critical elements reviewed to assist in the validation of each flood study. If any one of these critical elements is evaluated to be “Yes” as a result of the identification of a deficiency, it is significant enough to trigger an “Unmet Need” validation status. There are ten secondary elements reviewed to assist in the validation of each flood study. If four or more secondary elements are evaluated to be “Yes” as a result of the identification of a deficiency, that is sufficient to trigger an “Unmet Need” validation status. Please see the inset table detailing the critical and secondary elements considered in this review. The “Unmet Need” validation status signifies that a flood study may no longer provide an accurate representation of the flood risk and suggesting the need for an updated study.

CNMS ELEMENTS	
CRITICAL	SECONDARY
Major change in gage record since initial FIRM	Use of rural regression equations in urban areas
Updated and effective peak discharge differ	Repetitive losses outside of SFHA
Model methodology no longer appropriate	Addition/removal of <=5 hydraulic structures
Addition/Removal of major flood control structures	Increase in impervious area in sub-basin more than 90%
Current channel outside of effective SFHA	Channel improvements/shoreline changes
Addition/removal of >5 hydraulic structures	Availability of better topography data
Significant channel fill or scour	Changes to vegetation or land use
-	Failure to identify primary dune in coastal areas
-	Significant storms with high water marks
-	New regression equations

Table 1: Elements of Analysis for CNMS

The CNMS is a tool that will continually be updated with information intended to document mapping needs and help prioritize new flood studies. Along with local input, the CNMS data will assist to identify future Risk MAP projects throughout Ohio.

**Community Rating System Coordinator’s Manual Update Nears Completion**

The CRS Task Force has been working on updates to the CRS Coordinator’s Manual. A summary of proposed changes was released on July 6, 2011 and can be accessed on the following website: [www.crs2012.org/](http://www.crs2012.org/) Comments have been requested to be submitted by August 31, 2011. Instructions for comment submission can be found on the same website under “Outreach and Feedback”.

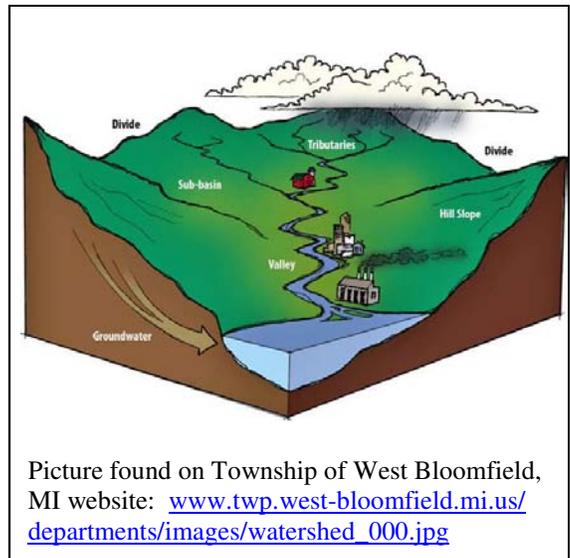
## Risk MAP - A Watershed Approach to Flood Hazard Mapping

By Katherine Skalak—Environmental Specialist

ODNR, Division of Soil and Water Resources—Floodplain Management Program

Beginning in Federal Fiscal Year 2010 (October 2010), FEMA initiated the Risk Mapping, Assessment, and Planning (Risk MAP) program. According to FEMA's website, the vision for this program is "to deliver quality data that increases public awareness and leads to mitigation actions that reduce risk to life and property" ([www.fema.gov/plan/prevent/fhm/rm\\_main.shtm](http://www.fema.gov/plan/prevent/fhm/rm_main.shtm)). Many Ohio counties have recently undergone Map Modernization where Flood Insurance Rate Maps (FIRMs) were updated on a countywide basis to better identify flood hazard areas. With the new Risk MAP program, the emphasis is on evaluating flood risk on a watershed basis. So, you might ask "What does that mean for my community?"

The next question you might ask might be "What is a watershed?" A watershed is the land area, which forms the drainage system for a stream or river. The watershed for a stream will also include the watersheds of its tributaries. For example, the Ohio River Watershed would also include the Scioto, Muskingum, Miami, and others. The Ohio River Watershed would also be included in the Mississippi River Watershed. Watersheds extend across municipal, county, state, and national boundaries. The great thing about Risk MAP is that a complete, consistent, and connected flood analysis will be conducted on the 8 digit Hydrologic Unit Code (HUC) watershed study area. The average 8 digit HUC in Ohio is 1,168 square miles and may include portions of as many as 14 different counties.



Picture found on Township of West Bloomfield, MI website: [www.twp.west-bloomfield.mi.us/departments/images/watershed\\_000.jpg](http://www.twp.west-bloomfield.mi.us/departments/images/watershed_000.jpg)

While Map Modernization was a suitable approach for county based governments, it is not an ideal approach to determine flood risk. To determine actual flood risk, the entire watershed must be considered. Another benefit is that Risk MAP will also address gaps in current flood hazard data as well as other identified needs. If your effective FIRM has Base Flood Elevations (BFEs) and/or Floodways delineated, these will be maintained on Risk MAP products. Another difference between Map Modernization and Risk MAP is the appeal process. In Map Modernization, there was one formal Appeal Period per county update. With Risk MAP, this has changed to be a minimum of one Appeal Period per flooding source and possibly another one per 8 digit HUC. By establishing a separate Appeal Period for each flooding source, significant delays based upon appeals for a single flooding source will not affect the rest of the watershed study.

As with other large-scale projects, this process will take time. There will be challenges with the Risk MAP approach, which will take a significant investment of time and energy to overcome. One such challenge includes coordination between multiple county governments and in some cases multiple states. In addition, some counties in Ohio never went through the Map Modernization process, so there will be challenges stemming from the various levels and compatibility of available data.

(Continued on page 17)

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Therefore, Risk MAP projects may include restudies, new studies, and countywide studies for those counties that were not funded as part of the Map Modernization update effort. Risk MAP will also help to identify the need for future flood studies. ODNR and FEMA are continuing to develop a database to keep track of priority mapping needs for future projects (see related article on page 12).

With Map Modernization, countywide studies were completed. The issue with this approach is that counties typically fall within several watersheds. Water does not stop at county boundaries. Analyzing flood risk with a watershed approach will allow better identification of risk areas and provide connectivity in the mapped flood areas. Map Modernization created only regulatory products: Digital Flood Insurance Rate Map (DFIRM), Flood Insurance Study (FIS), and Flood Insurance Rate Map (FIRM). In addition to those traditional regulatory products, Risk MAP will offer additional non-regulatory products such as depth grids, percent annual chance grid, percent 30-year grid, velocity grid, and changes since last FIRM. These non-regulatory products will help to demonstrate risk by showing the property owner how much flooding they can expect on their property. The changes since last FIRM dataset will enable a property owner to see which areas of the Special Flood Hazard Area (SFHA) have changed since the last FIRM.

There are currently eight Risk MAP projects that have started in Ohio. ODNR and FEMA are continuing to develop a database to keep track of priority mapping needs for future projects and current projects. Even with all of these challenges, the Risk MAP approach will be beneficial. It will better identify flood risks for the project watersheds. 💧



Sedge Meadow Restoration at Reed-Turner Woodland Nature Preserve

Picture found on Indian Creek Watershed Project, Ltd. Website: [www.indiancreekwp.org/images/apr07/What-is-a-watershed.jpg](http://www.indiancreekwp.org/images/apr07/What-is-a-watershed.jpg)

### **Property Owner Interest in Selling Floodplain Easements Far Exceeds Available Funding**

American Rivers recently published a report entitled, *The Multiple Benefits of Floodplain Easements: An Assessment of American Recovery and Reinvestment Act-Funded Emergency Watershed Protection Program Floodplain Easements in the Upper Mississippi River Basin*. The assessment considers investments in floodplain easements made by several federal funding sources with the expressed intent of flood damage reduction. These programs show our federal government embracing (and funding) the multiple benefits and opportunities afforded by protecting naturally functioning floodplains. Even with the recent large federal investments, this report finds a huge unmet need. The report says that many applications for purchase of floodplain easement remain unfunded in study area.

Is there an unmet demand for floodplain easement purchase by property owners in your community? We urge each Ohio community to find out—and then look into the many ways you may assist your citizens in profiting from these funding sources.

## TRAINING OPPORTUNITY FOR FLOODPLAIN MANAGERS:

**L273: Managing Floodplains through the NFIP**  
**August 30—September 2, 2011 (4 day course)**  
**Princeton Road Campus**  
**1802 Princeton Road Hamilton, OH 45011**

This course is normally only offered in Emmitsburg, MD; but, for the first time, FEMA is coming to Ohio to bring the E273 course to us! Please contact Alicia Silverio at (614) 265-1006 to register. Don't miss this fantastic opportunity for training and to meet our FEMA, Region V staff!

### ***The Lion of Chauncey Passes On.***

By Christopher Thoms, CFM—Program Manager  
ODNR, Division of Soil and Water Resources—Floodplain Management Program

We are sad to report that a former floodplain administrator for the Village of Chauncey, Daniel E. Lyons (age 65), passed away Saturday, February 12, 2011. Following a fall, he died of complications after being life-flighted to Grant Hospital in Columbus.

Stating that “Mr. Lyons” was his father, he insisted on everyone calling him, Danny. Born August 21, 1946 in Kimberly, Ohio, Danny is survived by his beloved wife of 27 years, Pamela (Spears) Lyons and children: Danny DeLoach of Columbus; Waylon, Jessica, and Lisa, all of Chauncey; and Lori (James Rupe) Lee of The Plains; grandchildren: Robert, Josselynn and Kaydence; eight siblings; and many nieces and nephews. To his family we extend our deepest sympathies.

Danny worked tirelessly on behalf of his hometown, the Village of Chauncey, a municipality of just over 1,000 people in Athens County, on the bank of Sunday Creek north of its confluence with the Hocking River. He knowingly undertook the job of Floodplain Administrator in the face of long-standing and vocal opposition to enforcement of the Village's flood safety standards. He seemed to enjoy the challenge. At times, he also served as a Village Councilman on a council where confrontations were legendary. While Danny officially served as Floodplain Administrator for the Village of Chauncey for only the nine months (October 2000 to June 2001) he was never far from the action. Whether in or out of office, Danny was unflagging in his efforts to find out who could (and would be willing to) accomplish a wide range of jobs that needed doing for the Village. While Danny wasn't always the most tactful in expressing his many opinions, no one could mistake that his intent was to “get something done” in a community where that was the exception rather than the rule. And Danny *did* get things done. Few people could match Danny for his perseverance (and overcoming seemingly insurmountable obstacles) in working to help his community. Danny was a regular caller (and sometimes visitor) to our office. On almost a monthly basis, Danny would call with the latest village updates concluding with a fond “talk to you later Bubba” (to date, the only one to direct that particular salutation to me). The residents of Chauncey owe a debt of gratitude to Danny for his many services and for his spirited efforts on their behalf. I will always remember him with admiration, as an inspiration and a friend. We will indeed miss him.



## Dry-Floodproofing: An Option for Nonresidential Structures

By Ben Kelley—Environmental Specialist

ODNR, Division of Soil and Water Resources—Floodplain Management Program

### Dry-Flood Proofing

When a property owner prefers not to elevate a nonresidential structure, we are frequently asked “If I do not want to elevate my nonresidential structure, what other options do I have?” This question is often raised when the circumstances warrant a more cost-effective method of flood protection. A Non-residential Structure is any walled and roofed building or manufactured unit which is not used for human habitation. In order to achieve compliance through elevation, a nonresidential structure must be raised to or above the base flood elevation (BFE). This can be done by any means such as solid foundation walls, aboveground crawlspace, piles, posts, piers, or compacted fill. In cases where elevation will not be used, dry-floodproofing is the alternative construction method that meets the needs of those seeking approval for their floodplain development permit. The term “floodproof” means “any combination of structural and non-structural additions, changes, or adjustments to structures, which reduce or eliminate flood damage to real estate or improve real property, water, and sanitary facilities, structures and their contents” (44 CFR 59.1). There are two types of floodproofing techniques, wet and dry. Wet-floodproofing is used to allow flood waters to automatically enter and exit a structure in a way that significantly lowers the hydrostatic pressures in an attempt to minimize flood damage. This is contrasted with dry-floodproofing, which is designed to be a watertight structure capable of resisting hydrostatic and hydrodynamic loads and the effects of buoyancy.

### The Basics

The National Flood Insurance Program (NFIP) requires new or substantially improved nonresidential buildings in an AE Zone to either elevate the lowest floor (including basement) or dry-floodproof to or above the base flood elevation (BFE). The design must account for flood warning time, building use, mode of entry and exit from the building and the site, floodwater velocities, flood depths, and the potential for debris impacts. The NFIP

regulations require that dry-floodproofed structures be designed so that areas below the base flood elevation are watertight, walls must be impermeable to the passage of water, and structural components must have the capability to resist hydrostatic and hydrodynamic loads. The structure must be properly anchored to protect from the risks of buoyancy. For new construction, dry-floodproofing should be incorporated into the design of the building so that below the base flood elevation:

- Walls, windows, and doors are water tight,
- Structural components can resist hydrostatic and hydrodynamic loads and effects of buoyancy by reinforcement measures, and
- Utilities are protected from the flood damage. This includes check valves on sewage and water lines and the location of other utilities (electrical, gas, fuel oil, *etc.*).

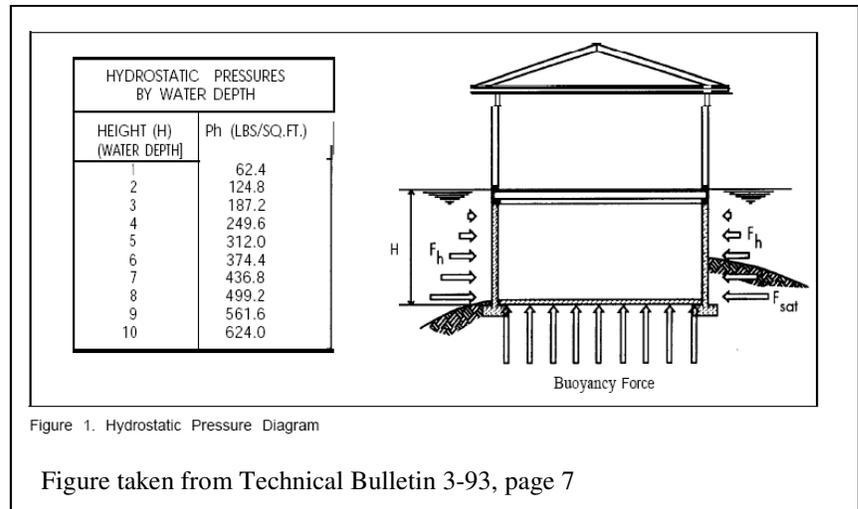


Figure 1. Hydrostatic Pressure Diagram

Figure taken from Technical Bulletin 3-93, page 7

(Continued from page 19)

Dry-floodproofing cannot be used to bring residential structures into compliance. However, dry-floodproofing can be used to remedy a nonresidential structure that is in violation of the elevation standard or to bring a Substantially Damaged/Improved nonresidential structure into compliance. For a structure to be considered Substantially Improved, any type of repair or additional modifications need be valued at 50% or more of the current market value. A Substantial Damage determination can be the result of any natural disaster, fire, or any other source of damage. A structure that was built prior to the initial effective date of the community's Flood Insurance Rate Map (FIRM) would be called Pre-FIRM. Pre-FIRM structures are subject to the "grandfather rules" for insurance purposes. However, once the Pre-FIRM structure has been officially determined to be a Substantial Improvement by the local Floodplain Administrator, the building will need to be brought into compliance with the Post-FIRM flood safety standards. The property owner may choose to use dry-floodproofing in accordance with the NFIP standards to meet the requirements. Buildings that were built after the initial FIRM date, called Post-FIRM, should have been built in compliance with the standards. These structures must maintain compliance with the requirements if they are damaged.

### Certificate

The "Floodproofing Certificate for Non-Residential Structures" (FEMA Form 81-65) has been developed by FEMA for use in the certification of nonresidential floodproofing designs. The NFIP requires a design certification for all floodproofed buildings. A registered engineer or architect must certify the floodproofing design and plans for construction. The engineer or architect shall certify that the design is in accordance with the accepted criteria of the NFIP. The certificate will include the elevation to which the structure was floodproofed. The Floodplain Administrator should keep the Floodproofing Certificate as a record documenting compliance in the community's filing system. There are three sections to the certificate. The first section references the building's location and contact information. Also, it contains the necessary information regarding the Flood Insurance Rate Map. The second section refers to the design elevation information. The remaining section is the actual certification of the floodproofing design. This certification is based on the design, not the completed structure. After development is complete there should still be an inspection of the built structure to ensure compliance with the approved plans. The certificate is to be filled out and signed by the design professional. The FEMA Floodproofing Certificate fulfills NFIP insurance rating needs, is required by most locally adopted regulations, and is consistent with proper floodplain management.

**Floodproofing Certificate**  
(FEMA form 81-65)

### Insurance Application

When using the dry-floodproofing method to meet the elevation requirement, the minimum NFIP rules say that the nonresidential building must be floodproofed to the BFE. However, to receive an insurance rating for a compliant structure, a building has to be floodproofed to one foot above the base flood elevation. If a building is only floodproofed to BFE, this floodproofing credit cannot be used and the structure will receive a rating based on the lowest floor elevation, thus resulting in a violation rate.

### Conclusion

Dry-floodproofing is an alternative technique available for nonresidential structures to meet the elevation requirement. For more information on FEMA's floodproofing guidelines see Technical Bulletin 3-93 and Floodproofing Certificate, on the FEMA Library website: [www.fema.gov/library/index.jsp](http://www.fema.gov/library/index.jsp)

## Using GIS for local outreach, Map Change Notification 2011

By Tim Beck, CFM—GIS Specialist

ODNR, Division of Soil and Water Resources—Floodplain Management Program

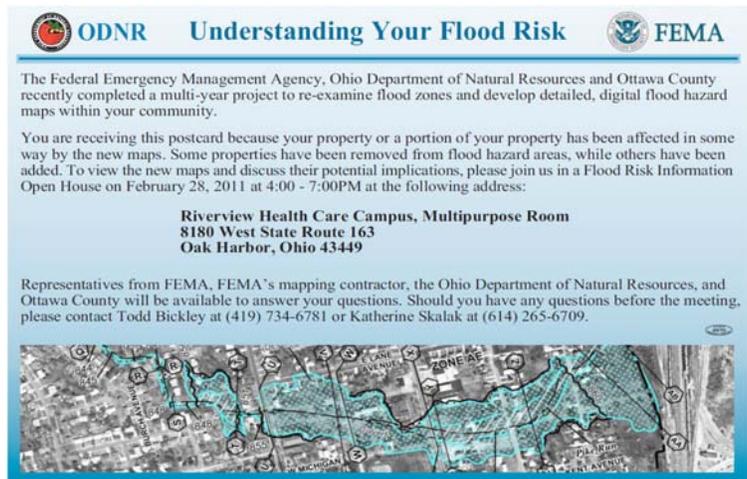
I would like to give a special thank you to Allen, Mercer, and Ottawa counties who provided parcel data for this project and made the property owner notification possible. The first step in this project was for ODNR to identify parcels that were impacted by the updated Flood Insurance Rate Maps (FIRMs). For a parcel to be considered “impacted” the flood zone must have changed from the current to the preliminarily updated FIRM. This included both properties that had previously been in a Special Flood Hazard Area (SFHA), also called “A Zone”, and was removed, as well as properties that had previously been outside of the A Zone and were newly identified as in the SFHA. The project included overlaying the existing and new flood zone data layers. In this way, a crude list was developed that included most structures whose flood zone changed with the new maps. The analysis was performed upon release of the preliminary maps to get the information to the public as soon as possible. This project built upon a similar project implemented in 2008; however, we were able to add additional outreach efforts in 2011.

In 2008, ODNR provided the final products to participating communities’ local officials via DVDs. Then, if communities had the resources, they were enabled to use the ODNR produced data to send each impacted property owner a notification of potential flood zone change. ODNR’s 2011 project included additional funding; therefore, ODNR was able to both create the map change database and send postcards to each impacted property owner. ODNR was able to obtain the funding for public outreach so that communities did not have to undertake these costs. To minimize

the expense of notification, 4” x 6” post cards were sent with basic information and an invitation to the County Flood Risk Information Open House. County Flood Risk Information Open Houses are held throughout the state to unveil communities’ preliminary Digital Flood Insurance Rate Maps. This public forum provides citizens with the opportunity to review the maps, provide comments, and ask questions.

To identify where the floodplain has changed, ODNR compared the current digital data available for the Special Flood Hazard Area (SFHAs) to the digital preliminary data by using the ArcGIS® *Erase* function. The *Erase* function allows the overlapping of the *Input Features*. Only those portions of the *Input Features* falling outside the *Erase Features*’ outside boundaries are copied to the output *Feature Class*. By switching the *erase* and *input* layers, the expansion (areas where the SFHA widened) and contraction areas (areas where the SFHA Narrowed) remain visible. An *Identity* function was also performed on the preliminary data to add the FIRM Panel number, which identifies the panel number associated with each impacted parcel. ODNR then selects the parcels that were impacted by the updated preliminary mapping and places them in a Microsoft Access database, which contains the full address of those impacted parcels. This database is used to send the property owners the postcard that notifies them that the new map may impact their parcel.

If your community or county is interested in obtaining assistance with notifying property owners of their flood risk, please contact our office at (614) 265-6722.



## Building Public Support for Floodplain Management

By Kimberly Bitters, CFM—Environmental Specialist

ODNR, Division of Soil and Water Resources—Floodplain Management Program

At this year's ASFPM annual conference in Louisville, Kentucky I co-taught an ASFPM class called *Building Public Support for Floodplain Management*. This interactive course provided plenty of opportunity for participants to share with and learn from real floodplain management experiences. I highly recommend taking the course if the opportunity presents itself, as it covers information that would be useful for all Floodplain Managers. This article highlights some of the conversations that we had during our class.

Fulfilling the responsibilities of a Floodplain Manager isn't easy. It regularly means being the bad guy and telling people something that they don't want to hear. For example, a property owner may want to build their house a noncompliant way, and they may not be open to altering the design to comply with flood safety standards. Even when your message is intended to protect their safety, they may react with anger and blame you personally for the additional hassle or expense. In this role, the public can serve as your customer, boss, ally, or adversary. To assist in maintaining the public as your ally, there are things that you can do to build support for floodplain management, both during these one-on-one confrontations and proactively. Building support for floodplain management will make the Floodplain Manager job easier and can increase the success of floodplain management efforts throughout the community. There isn't a correct way to successfully engage with stakeholders. But it is useful for a Floodplain Manager to consider a variety of tools before the confrontation, so that the chance of success is improved.

The dreaded *angry citizen confrontation* can be one of the biggest challenges for Floodplain Managers to successfully do their job. Proactive public and floodplain property owner outreach can help to reduce these confrontations since your customer isn't caught off guard with additional requirements in your office. However, there is no way to completely avoid these confrontations so here are a few ideas that may help a Floodplain Manager to get through this particular challenge:

- It is frequently helpful to model the demeanor, posture, and tone that you would like to see from your citizen.
- Bring the citizen to a safe, but less public location, to alleviate the "stage effect" of a group setting and then allow them to vent their frustrations as you actively listen to their concerns.
- Educate your citizen on the applicable standards and offer them written guidance such as FEMA Technical Bulletins for their review.
- Firmly and calmly direct the conversation towards constructive options for meeting the requirements and provide them the opportunity to choose how they will modify their project to meet the code.



Next, it may be helpful to consider the perspective of different audiences within your community. It is frequently useful to know your audience so that you can modify your message based upon their specific needs, priorities, and challenges. It is useful to tailor your message to each audience's needs so that they aren't overwhelmed with unnecessary information and so that they can understand how floodplain management is beneficial to their situation. Considering each stakeholder group's specific situation will also reduce frustration and help stakeholders to understand how

(Continued on page 23)

(Continued from page 22)

the Floodplain Manager is looking out for their best interests. Thus, reducing friction and building support for floodplain management efforts that have been tailored to local risk and needs. A few questions that each Floodplain Manager can consider for their specific community:

- what are the major stakeholder groups in your community?
- what are primary needs of these stakeholders?
- what are the benefits of floodplain management for each stakeholder group?
- what are the challenges of floodplain management for each stakeholder group?
- what are the best avenues for outreach to each of these groups?

Each of the questions above helps to frame the message presented to each stakeholder group. This information will assist each group to consider the appropriate aspects of floodplain management that relate to their specific situation. Once there is buy-in that floodplain management, as a concept, is worthwhile, it may be necessary to engage these stakeholders to determine specific efforts that are best suited to local problems. There are some consent-building methods that can be used to successfully build support for specific floodplain management efforts across these various stakeholder groups. One such method discussed in the course manual is an ODNR modification of the Institute for Participatory Management and Planning's "Four Point Consent Building Method." The four modified steps are as follows:



1. *Make sure everyone agrees that there is a problem.*
2. *Make sure they agree you are the right people to deal with it.*
3. *Review approaches that look sensible to all.*
4. *Agree that not everyone will be happy, but that the approach selected makes the most sense.*

This method is often extremely valuable when contrasting stakeholder goals make *consensus*-building impossible. In this situation, gaining *consent* to take action is in the best interests of the whole community even when some stakeholders are not able to agree on the appropriate course of action.

There is tremendous value in garnering public support for floodplain management in your community. The process of educating the public is in itself a valuable flood risk reduction tool. Outreach to existing businesses and residents can save them money in several ways. Simply providing them the information on their flood risk may help them to choose to purchase flood insurance, which enables them to financially protect themselves. This information may also allow them to make educated choices on further investments; whether that means choosing to invest elsewhere or building in a safer way. Property owners may also be saved the heartache and costs of being forced to remedy a violation that would have been significantly cheaper to initially construct in compliance with regulations.

Stakeholders who are educated about the long-term benefits of effective floodplain management can choose to support both regulatory and voluntary mitigation options that go above and beyond the requirements. Of particular importance to Floodplain Managers, is that public outreach can build political will for enforcement of flood safety standards making their role much less stressful. In addition, developing a tailored message for each stakeholder group can be a useful part of forming the community's strategy for reducing flood damages. Overall, an educated citizenry is enabled to make smarter development choices and point the community toward more sustainable growth.



# ***The Antediluvian*** .....

## ***Ohio's Floodplain Management Newsletter***



Division of Soil and Water Resources  
2045 Morse Road, B-2  
Columbus, Ohio 43229



John R. Kasich, Governor  
David Mustine, Director  
Ted Lozier, Chief

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