The Antediluvian

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

Volume XVIII, Issue 2 Spring 2012

Ohio's Floodplain Management Newsletter

Reduce flood damage and protect and promote natural functions of floodplains

Letters of Map Amendment (LOMA) in Approximate A Zones

By Alicia Silverio, CFM—Senior Environmental Specialist
ODNR, Division of Soil and Water Resources—Floodplain Management Program

Recently, our office has received many questions about applying for Letters of Map Amendments (LOMAs) in Approximate A Zones. It seems that there is some confusion regarding what data is necessary to support the LOMA application, as well as acceptable ways to develop that data. To help clear up some of the uncertainty, let's start with the basics.

What is a LOMA? A LOMA is an official letter from FEMA that amends an effective National Flood Insurance Program (NFIP) map. The LOMA states that an existing structure or parcel of land that has not been elevated by fill (*i.e.*, the existing structure or parcel of land is on natural grade) would not be inundated by the base flood and is "removed" from the special flood hazard area (SFHA). A property or structure may be eligible for a LOMA if it has been inadvertently mapped as being in the floodplain, but is actually on natural high ground above the base flood elevation (BFE). The LOMA corrects what is often referred to as an "inadvertent inclusion".

Why apply for a LOMA? In a participating community, any structure within the SFHA that has been used as collateral for a loan from a federally regulated lender must be protected by flood insurance throughout the term of the loan. If the applicant believes that the requirement to purchase flood insurance was made in error and there is evidence that the structure is not in the SFHA on the effective Flood Insurance Rate Map (FIRM), the applicant may apply for a LOMA. Property owners who obtain a LOMA for their structure or property can provide this documentation to their lender for consideration in waiving the mandatory purchase requirement.

How does a property owner obtain a LOMA? A LOMA can be granted for structures or sites in the SFHA where the lowest adjacent grade (LAG) is at or above BFE. For SFHA where the BFE is delineated on the FIRM, applying for the LOMA is relatively straightforward. If the applicant can demonstrate their structure or site meets the criteria, they can simply complete either the MT-EZ (single residential structure or lot) or MT-1 application packet (all other LOMA requests), submit the required data, and wait for FEMA's response. There is no cost to apply to FEMA for a LOMA, although there are likely to be costs of working with a licensed professional engineer or surveyor to prepare the LOMA application and accompanying data. *(Applicants should be aware that even if they hire a surveyor /engineer to prepare the data for the LOMA application, they may find that they do not meet the criteria for removal.)*

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In Approximate A Zones, where no BFEs have been established, how does the applicant determine if they are eligible for the LOMA? First, the applicant's engineer or surveyor can check if any BFE data is available from another Federal, State, or local source (as required by 44CFR 60.3(b)(4)). If none is available, then there is no way to determine if a structure or site in Zone A is eligible for a LOMA until a site specific engineering analysis is performed. To generate a BFE, there are a few methods that may be used:

Simplified Methods – In some situations, methods such as contour interpolation or data extrapolation can yield an acceptable level of accuracy for estimating a BFE. LOMA applications may be completed using a BFE that was approximated by simplified methods. For these situations, however, no BFE will be specified on the LOMA, only a determination that the structure is outside the SFHA. Preparing a LOMA application using a simplified method is likely to be less expensive for the property owner.

Detailed Methods – Analysis involving 1) floodplain geometry (topography), 2) flood discharge and/or volume (hydrology), and flood height (hydraulics) is typically generated by computer modeling. Although there are different means to produce each component of the detailed analysis, the process yields a more accurate BFE. A BFE specified on an Elevation Certificate that will be used for insurance rating must be based on detailed analysis. In these cases, a BFE will be specified on the LOMA.

Out-As-Shown – When FEMA receives a LOMA request and agrees that the structure is outside of the SFHA after plotting the location on the FIRM, the determination "Out-As-Shown" (not "removed") will be issued. For these LOMA requests, the distance necessary to remove a structure or property from the SFHA will be handled by individual case request and no elevations are required. The FEMA Out-As-Shown determination will state that the property or building is correctly shown outside the SFHA; therefore, the mandatory flood insurance requirement does not apply.

Is a LOMA the only process to remove a site from the SFHA? Depending on the situation, there are other administrative processes that can be used to remove an area from the SFHA.

Letter of Map Revision Based on Fill (LOMR-F) – A LOMR-F can be requested for a structure or parcel of land where fill has been placed after the date of the first effective NFIP map to remove the SFHA designation. There is a fee for processing a LOMR-F.

Letter of Determination Review (LODR) – The LODR process provides property owners and lenders with information to resolve disputes regarding lender determinations that a structure is within the SFHA. The LODR may be requested within 45 days of the lender's determination and has an $80 processing fee.

What resources are available to help navigate the Letter of Map Change Process? For more detailed information about developing BFEs in Approximate A Zones, please refer to FEMA publication 265/July 1995 Managing Floodplain Development in Approximate A Zone Areas manual. This publication, as well as the MT-EZ and MT-1 applications, are downloadable from FEMA's website at: www.fema.gov

OFMA UPDATE

By Shawn Arden, PE, CFM – OFMA Chair
ms Consultants

OFMA WANTS YOU!

The Ohio Floodplain Management Association (OFMA) was formed to promote sound and effective floodplain management throughout the state of Ohio. The Association's success is directly attributed to the efforts of our volunteers. There are numerous volunteer opportunities available to assist the Association develop and deliver educational materials, track pending legislation, and participate in conference planning activities. Many of these opportunities can be performed locally and do not require travel outside your area. Participation on an OFMA Committee or Project Team offers you the opportunity to network with other key Ohio floodplain management stakeholders and can be planned to fit your schedule. To learn more about OFMA, our 2012 action plans, and how you can volunteer to assist in achieving our mission, please contact me at 614-642-0320 or by email at ohiofma@gmail.com.

Additional Notes:

The 2012 Ohio Statewide Floodplain Management Conference will be held on August 29th and 30th at the Doubletree Hotel in Worthington, OH (same location as last year). The Call for Abstracts has been released, and all abstract submittals were due on March 19th. Additional conference information can be found on the OFMA website, www.ofma.org.

The OFMA Website continues to be the Association's most effective tool for disseminating information to our members and stakeholders. Breaking news and important information will be posted to the OFMA News webpage. Stakeholders can receive automatic updates of OFMA News postings through RSS feeds – visit the OFMA News webpage for more information!

The Association of State Floodplain Managers (ASFPM) will be holding their 2012 Annual Conference from May 20th through 25th in San Antonio, TX. The conference is a gathering of many federal agencies, state NFIP Coordinators, State Hazard Mitigation Officers, private floodplain stakeholders, other ASFPM members, and many local officials from across the nation. This conference is a great opportunity to network with other floodplain management stakeholders from across the country. Several OFMA Board members will be attending the national conference to represent our state chapter. Additional information for the ASFPM conference is posted at www.floods.org.

The Ohio Floodplain Management Association is a Division of the Water Management Association of Ohio. For more information, please visit the OFMA website at www.ofma.org.

Bolster Flood Risk Reduction Efforts Through *Green Infrastructure*

By Kimberly Bitters, CFM—Environmental Specialist; ASFPM, NBF Committee Co-Chair
ODNR, Division of Soil and Water Resources—Floodplain Management Program

ASFPM's Working Definition of *Green Infrastructure*:
A variety of best management practices that use both functioning natural and man-made systems to effectively slow, store, convey, and filter water. Techniques generally use soils and vegetation to infiltrate, evapotranspirate, recover, and reuse runoff or flood water in a way that moderates peak flows, manages stormwater volumes, and reduces flood risk.

(This article was originally printed in ASFPM's February 2012 Issue of "News and Views" and reprinted with permission.)

Floodplain Management inherently implies a scope of application that lies within some definition of "floodplain". Within the context of the National Flood Insurance Program, the term is generally applied through the enforcement of land use regulations within the 1% chance annual flood also called Special Flood Hazard Area. To me, this implies that floodplain management is limited to land that is hydraulically connected to the flooding source. However, the Association of State Floodplain Managers (ASFPM) promotes recognizing the breadth of floodplain management to further consider the very direct flooding impacts of drainage changes throughout the watershed and distinctly outside of the normal perception of "floodplain." This may mean blurring the lines between floodplain and stormwater management. To successfully integrate the two management systems, we will need to change the idea that we are managing land use and building practices within the confines of a distinct area. Instead, we will need to incorporate every aspect of land use that impacts flooding such as drainage tiles; culverts; ditches; soil compaction; vegetative location, diversity, and type; and other changes to the water system that have a direct correlation to the velocity and location of flood waters.

***Green Infrastructure* practices include (but are not limited to):**
- vegetated floodplain corridors
- constructed or preserved wetlands
- pervious surfaces with infiltration gaps
- rain gardens
- vegetated swales

ASFPM's Natural and Beneficial Function (NBF), No Adverse Impact (NAI), and Stormwater Management Committees are in the process of discussing the interplay between cumulative development impacts and ecologically functioning natural areas. Discussion has centered on the flood risk reduction potential of preserved or rehabilitated floodplains, with a question mark hanging over the connection to hydraulically disconnected natural areas. *Green Infrastructure* techniques are intended to be applied throughout the watershed to improve water quality, guide runoff location, and maintain the existing flow regime. Most of the time, *Green Infrastructure* is a natural or green alternative to traditional engineered manipulations of runoff so as to slow, temporarily store, and filter the water. This is beneficial because it mimics the pre-development characteristics and offsets some of the negative impacts of disturbance on the system. By requiring that runoff is released closer to the pre-development volume and timing we moderate downstream peak flows –thus reducing the number and extent of flood events. The stormwater management community has widely recognized the benefits of using a broad suite of *Green Infrastructure* tools as a valid alternative to traditional engineered methods. In stormwater management plans, the use of natural riparian corridors (*i.e.,* floodplains) to offset runoff impacts has been implemented through riparian setbacks and "stormwater credits" that are essentially exchanged

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for design requirements. This is because the drainage network, including both watercourse with connected floodplain and hydraulically disconnected watery green space, is inextricably tied through flood damage. As a result, members of the ASFPM, NBF committee have suggested that utilizing *Green Infrastructure* techniques throughout the watershed should be a vital aspect of an integrated flood risk reduction strategy.

In most cases, floodplain management has maintained its distinctly localized approach to studying and managing development impacts. This approach has supported maintenance of a repertoire of tools that inadvertently result in a cumulative increase of flood risk. The difficult task of reversing the trend of escalating flood damages will require a shift toward *flood risk management* that incorporates a watershed-wide framework. To accomplish this shift, tools such as *Green Infrastructure* will be needed; and, we need to pursue consensus within the floodplain management community on several topics:

A. Do we agree that floodplain management's scope of application can and should include geographic areas outside of the identified 100-yr floodplain? Does floodplain management's sphere of influence include both the geomorphic floodplain and hydraulically disconnected green spaces? Are we willing and able to consider the full range of hazard-related impacts resulting from drainage manipulations throughout the watershed?
B. Do we agree that floodplain and stormwater management can and should be integrated? Can we agree on how these policies and practices should be applied so as to make this integration a reality?
C. Do we agree that maintenance of highly functioning natural systems will have a measurable impact on reduction of flood risk? Do the benefits of prioritizing natural systems through protection or rehabilitation outweigh the costs? And if so, should everyday floodplain management practices be expanded to include *Green Infrastructure* techniques?

ASFPM's No Adverse Impact (NAI) initiative presents a shift in thinking towards comprehensive floodplain management that identifies and mitigates adverse impacts. Application of this philosophy calls for expanding the scope of management outside the "floodplain" to encompass the entire watershed and mitigate cumulative impacts caused by changes in land use. I believe that moving towards long-term efficient solutions to these problems necessitates incorporating options such as *Green Infrastructure* into standard flood risk reduction routines. Therefore, it is time to aggressively pursue agreement on an appropriate path forward and implement those changes.

Green Values Stormwater Management Calculator—Center for Neighborhood Technology

(This blurb was originally printed in ASFPM's February 2012 Issue of "News and Views" and reprinted with permission.)

The National Green Values Calculator was developed for quickly comparing the performance, costs, and benefits of Green Infrastructure, or Low Impact Development (LID), to conventional stormwater practices, It is intended to take the user through the step-by-step process of determining the average precipitation at their site, choosing a stormwater runoff volume reduction goal, defining the impervious areas of the site under a conventional development scheme, and choosing from a range of Green Infrastructure Best Management Practices (BMPs) to find the combination that meets the necessary runoff volume reduction goal in a cost-effective way. To learn more, please visit: http://greenvalues.cnt.org/national/calculator.php and http://logan.cnt.org/calculator/calculator.php

The State Hazard Analysis, Resource, and Planning Portal (SHARPP)

By Steve Ferryman, CFM—Chief Mitigation Branch
Ohio Department of Public Safety, Emergency Management Agency

The Ohio Emergency Management Agency, Mitigation Branch has recently completed construction of the State Hazard Analysis, Resource, and Planning Portal (SHARPP). SHARPP is the State of Ohio's web based portal for mitigation information and includes a wealth of data on: mitigation planning, projects, and grants. The SHARPP site will help to promote the importance of mitigation efforts in Ohio to the public and decision makers at all levels. SHARPP can be accessed at: *http://ohiosharpp.ema.state.oh.us/ohiosharpp/*. Some of the functionality of the website is outlined below.

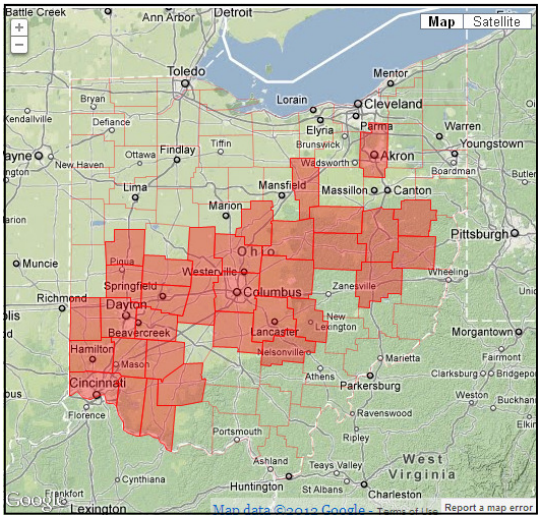

Figure 1: Map of counties affected by a particular disaster as shown on SHARPP

Mitigation Planning

Every County in the State of Ohio has developed local hazard mitigation plans that comply with FEMA criteria outlined in Title 44, Section 201.6 of the Code of Federal Regulations. Each plan includes research on the hazards that could affect the county, an analysis of the county's vulnerability (population, structures, and infrastructure), and strategies to reduce the risk. A local mitigation plan serves as a guide to decision makers as they commit resources to reduce the effects of natural hazards. In order to maintain eligibility for FEMA's Hazard Mitigation Assistance grants, local mitigation plans must be updated and approved by FEMA every five years. Current versions of all local mitigation plans can be accessed in a PDF format through SHARPP. Local floodplain administrators are all too familiar with Ohio's flood risk and work to mitigate future damages by enforcing local floodplain management regulations. Publicizing local mitigation plans will help educate your citizens about flood risk and garner support for floodplain management efforts.

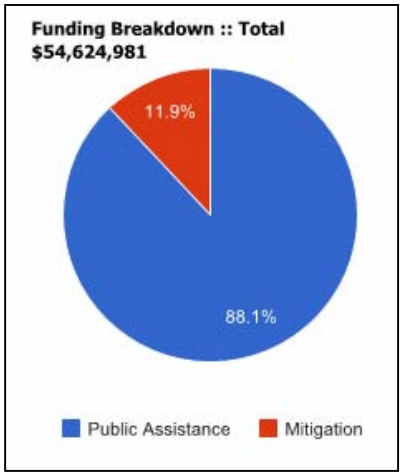

Figure 2: Pie chart showing breakdown of funding for a particular disaster as shown on SHARPP

In addition to digital copies of local mitigation plans, SHARPP summarizes data from local mitigation plans in a standardized format that enables easier statewide analysis of risk data. As communities complete their five year plan update, county emergency management agency directors are entering data into SHARPP on the frequency and impact of local hazards. SHARPP also summarizes information from local plans on the number and value of residential, commercial, and critical facilities at-risk. Reports can be generated that summarize hazard identification and risk assessment data uploaded to the site.

Mitigation Projects

SHARPP is a repository for data on past and current mitigation projects implemented in Ohio. The

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majority of FEMA mitigation funds in Ohio have been used to acquire flood-prone properties, demolish the structures, and deed restrict the land as open space. SHARPP maps the location of properties that have been acquired, and displays before/after photos, deed restrictions, and other key project information. Data from a project's benefit cost analysis are used to estimate the damages prevented through mitigation in dollars, which is displayed on the front page of the web site. Approximately 1/10 of the properties mitigated in Ohio have been entered into SHARPP; however, the Mitigation Branch expects to complete the data entry by Fall 2013.

Risk MAP Integration

The FEMA Risk MAP program seeks to identify "Area(s) of Mitigation Interest" (AOMI) through the Discovery and Resilience meeting process. An AOMI is a portion of stream reach where data or observation indicates that mitigation could reduce future flood loss. SHARPP contains a mapping tool that allows local officials and citizens to identify and describe these areas. The AOMI collected through SHARPP should be evaluated by local planning teams, and if necessary, become action items in local mitigation plans that will lead to future projects.

Future articles on SHARPP will highlight additional functionality and content of the website. I encourage you to visit the site and let us know what you think at SAFerryman@dps.state.oh.us or (614) 799-3539.

Managing Floodplain Development through the National Flood Insurance Program

Date: June 12-15, 2012

LOCATION: Ohio Department of Natural Resources
2045 Morse Road, Bldg. E – Assembly Center
Columbus, Ohio 43229

CEUs: 3.1 / 12 (core)

SPONSORS: FEMA Region V and Ohio Department of Natural Resources

COURSE DESCRIPTION: This is the field deployed version of the EMI E273 course. This course is designed to provide an organized training opportunity for local officials responsible for administering their local floodplain management ordinance. The course will focus on the NFIP and concepts of floodplain management, maps and studies, ordinance administration, and the relationship between floodplain management and flood insurance.

REGISTRATION: Please contact ODNR's Floodplain Management Program at 614-265-1006 for enrollment information.

There is no lodging provided for this course and all travel, meal, per diem and other expenses are the responsibility of the student or their parent agency. There is no fee for this course.

How important are headwater streams in floodplain management?

By Randall Keitz, P.E.—Floodplain Engineer
ODNR, Division of Soil and Water Resources—Floodplain Management Program

For this article, we'll refer to headwater streams as those having a drainage area of one square mile or less. Another way of referring to streams is by *stream order*[1]. The smallest streams at the very head of a watershed are referred to as *first-order* streams. Where two first-order streams meet, a *second-order* stream is created. Where two second-order streams meet, a *third-order* stream is created, and so on. For example, the lower Mississippi River is a tenth-order stream. As you might expect, there are vastly more small streams than large ones. First order through third order streams make up 85% of the total stream miles in the United States[2]. Various reports indicate that first order streams make up 53 to 63% of the total stream miles. In other words, headwater streams make up most of our total stream miles. More importantly, these streams provide many vital services locally and for the entire watershed. One of which is to help manage flooding. The minimum requirements of the National Flood Insurance Program (NFIP) generally do not regulate or map streams with drainage areas less than one square mile. Thus, headwater stream floodplains are generally not actively managed.

Picture taken by Floodplain Staff in February 2010 of natural headwater stream in Guernsey County, Ohio

Many Ohio headwater streams have been directly impacted by historic ditching that has straightened and deepened these streams. Other headwater streams have been indirectly impacted by the filling of floodplains, which has an effect similar to ditching. These types of impacts result in a reduction in floodplain storage and faster travel times (*i.e.*, higher channel velocities) that increase downstream peak flows and flood heights[3]. If headwater floodplains are managed in a natural condition, this keeps streamside flat areas (*i.e.*, floodplains) broad, and at an elevation that allows for frequent flooding (*i.e.*, annually). A floodplain that is vegetated with trees and shrubs, further slows and stores flood flows and lowers downstream peak flows and flood heights as compared to the typical impacted condition. Given that headwater streams contain most of the stream miles, the cumulative effect of headwater floodplain activities that result in lost, maintained or restored floodplain storage can noticeably impact downstream flood heights (*i.e.*, increase or lower).We would not consider removing most of our stormwater basins that we know protect against increased downstream flooding. So why would we fill our headwater stream floodplains that provide the same protection?

Many additional benefits accrue with maintaining floodplains in a natural condition. These include more stable and resilient streams, higher quality habitat (*i.e.*, riffles and pools) for fish and bugs, food

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sources for bugs (*e.g.*, tree and shrub leaves), cooler water temperatures, lower stream bank erosion rates, fewer in-stream fine sediments, more nutrient assimilation (*e.g.*, nitrogen and phosphorus), better water quality, less infrastructure maintenance, and lower overall costs.

Yet, your local floodplain regulations can be an effective tool to help manage headwater stream floodplains. Local floodplain regulations can and are recommended to go beyond the minimum NFIP requirements by including *higher standards*. An example of a higher standard that can be used to help maintain headwater stream floodplains in a more natural condition is a *riparian setback*. Many communities in Ohio use this approach to further reduce flood damages and to maintain and improve over all stream health for all size streams including headwater streams. Thus, a riparian setback higher standard could address <u>all</u> streams within a community, which provides a more holistic approach.

There are several methods that can be used to establish riparian setbacks. One example is the riparian setback ordinance used by Summit County. The following are excerpts from this ordinance.

1. *Widths of setbacks are measured as a horizontal map distance outward from the ordinary high water mark on each side of a stream, and are established as follows:*
2. *A minimum of 30 feet on each side of all streams draining an area less than 0.05 square miles (32 acres).*
3. *A minimum of 50 feet on each side of all streams draining an area greater than 0.05 square miles up to 0.5 square miles (320 acres).*
4. *A minimum of 75 feet on each side of all streams draining an area greater than 0.5 square miles and up to 20 square miles.*
5. *A minimum of 100 feet on each side of all streams draining an area greater than 20 square miles and up to 300 square miles.*
6. *A minimum of 300 feet on each side of all streams draining an area greater 300 square miles.*
7. *Where the 100-year floodplain is wider than the riparian setback on either or both sides of the stream, the riparian setback shall be extended to the outer edge of the 100-year floodplain.*

The complete Summit County riparian setback ordinance, number 2002-154, can be obtained from the Summit County SWCD or searched on the internet for further review. No matter what manner of setback or protection is used, maintaining the naturally low elevation of floodplains on small streams is setting aside nature's flood storage areas for use during the big storms. Therefore, consider adopting higher standards reflecting the importance of headwater streams and floodplains. When doing this, your community should consider all the benefits or problems avoided over time (*e.g.*, 25, 50 or 100 years) rather than in just one year. Generations to come will thank you.

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1. Strahler, A.N., 1952. Hypsometric (area-altitude) Analysis of Erosional Topography. Geological Society American Bulletin, 63, 1117-1142.
2. Leopold, L.B., Wolman, M.G., and Miller P., 1964. Fluvial Processes in Geomorphology. W.H. Freeman and Company, 522 p.
3. Robinson M., and Rycroft D.W., Impact of Drainage on Streamflow. In Skaggs, R.W. and J. van Schilfgaarde (eds), 1999. Drainage for Agriculture, Monograph 38, American Society of Agronomy, Madison, WI, pp. 767-800.

NEWS RELEASE

Spatially Enabled Floodplain Management Services

Location: Ohio, Kentucky, West Virginia, and Virginia

Point of Contact: Joseph Trimboli, Huntington District US Army Corps of Engineers

Contact Information: Joseph.K.Trimboli@usace.army.mil

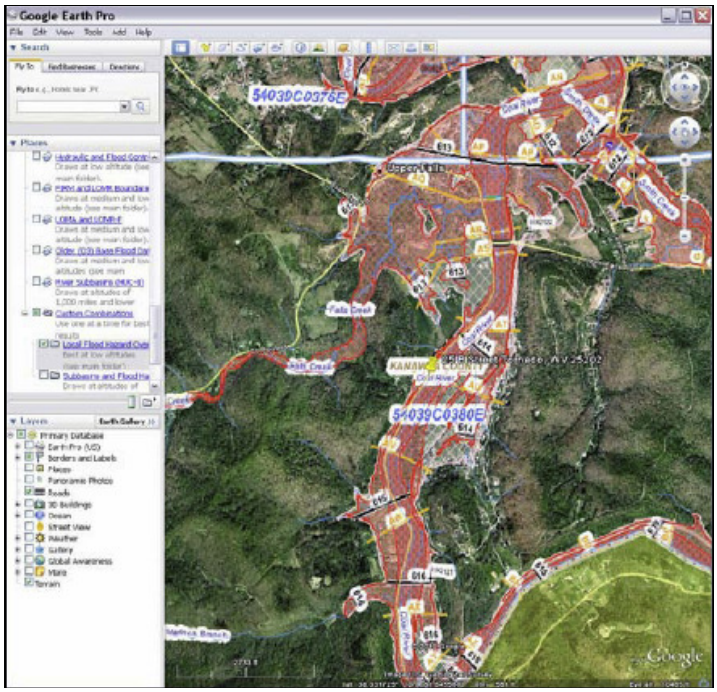

Figure 1: FEMA National Hazard Layer as depicted in Google Earth

In 2008, the Huntington District Corps of Engineers implemented the Floodplain Management Services (FPMS) spatially enabled Call Log Database. Its purpose is to process calls received through the District's toll free number (1-866-401-3980). Since its inception, the database has logged over 457 calls with 118 from Ohio, 39 from Kentucky, 286 from West Virginia, and 4 from Virginia. Calls can cover a number of categories, such as: inquiries about floodplain impacts on large development projects, Federal property rentals, FEMA Digital Flood Insurance Rate Map determinations, base flood elevation (BFE) requests, miscellaneous map requests, and general questions about the Corps and the National Flood Insurance Program (NFIP).

In addition to logging calls, the database serves several other purposes. The database's spatial component allows caller addresses to be geocoded and linked to GIS software. This allows for mapping information from other Federal agencies, such as the Federal Emergency Management Agency (FEMA) and US Geological Survey (USGS) to be quickly referenced for customer response. In addition, it is also designed to allow for the referencing of spatial data published by the District's State partners including Ohio. Information on where the calls originate help determine outreach activities and program direction.

The database allows the Huntington District to evaluate a specific address for Flood Plain Management issues under the NFIP and then provide a technical response in a short amount of time. These services range in cost from $25 dollars to $325 dollars depending on the response time. Although

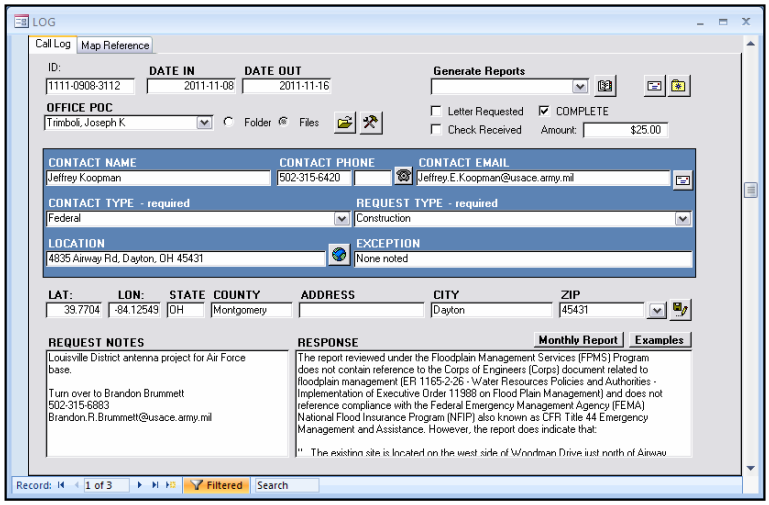

Figure 2: Main interface of the FPMS database (FPMSdb)

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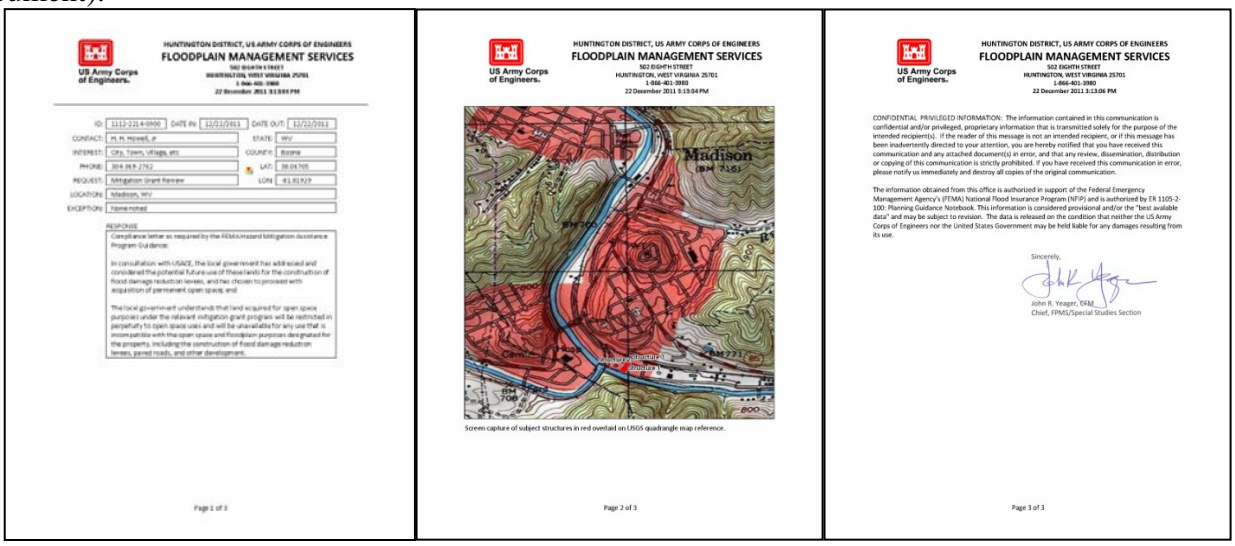
depending on the response time. Although only recently upgraded to categorize call types, Floodzone Determinations and Base Flood Elevation (BFE) requests rank high in Ohio. As a result, meetings were held with professional surveyors and engineers from both Ohio and West Virginia to discuss supporting individuals requesting FEMA NFIP Elevation Certificates where Base Flood Elevations (BFE) are not available.

Huntington District considers the database a work in progress and FPMS team members continually strive to improve the process. Team members are also Certified Floodplain Managers (CFM) and maintain their certification through extensive training. In the future, Huntington District plans to use the database to facilitate collaboration with regional Silver Jackets teams and other Federal agencies.

In addition to the changes, the database is being documented through an interactive presentation that allows for a walk-through of its functionality and provides a basis of discussion for the technical skills needed to support the NFIP. (http://bit.ly/FPMSdb). It is the hope of the FPMS Planners in Huntington to provide a valuable service as it's described in Appendix G of the Planning Guidance (Federal Document).


HUNTINGTON DISTRICT, US ARMY CORPS OF ENGINEERS
FLOODPLAIN MANAGEMENT SERVICES
US Army Corps of Engineers.

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HUNTINGTON DISTRICT, US ARMY CORPS OF ENGINEERS
FLOODPLAIN MANAGEMENT SERVICES
502 EIGHTH STREET
HUNTINGTON, WEST VIRGINIA 25701
1-866-401-3980
22 December 2011 3:13:04 PM
US Army Corps of Engineers.

Screen capture of subject structures in red overlaid on USGS quadrangle map reference.

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HUNTINGTON DISTRICT, US ARMY CORPS OF ENGINEERS
FLOODPLAIN MANAGEMENT SERVICES
502 EIGHTH STREET
HUNTINGTON, WEST VIRGINIA 25701
1-866-401-3980
22 December 2011 3:13:04 PM
US Army Corps of Engineers.

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The information obtained from this office is authorized in support of the Federal Emergency Management Agency's (FEMA) National Flood Insurance Program (NFIP) and is authorized by ER 1105-2-100: Planning Guidance Notebook. This information is considered provisional and/or the "best available data" and may be subject to revision. The data is released on the condition that neither the US Army Corps of Engineers nor the United States Government may be held liable for any damages resulting from its use.

Sincerely,

John R. Yeager, CFM
Chief, FPMS/Special Studies Section

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Figure 3: Report sample from the FPMSdb

CFM Refresher Course

The "refresher course" is targeted at seasoned floodplain managers with two or more years of experience who have read the FEMA 480 publication and studied the materials noted on the ASFPM's "Exam Prep Guide." For those preparing to take the CFM exam, this workshop is a great refresher. The full-day review will provide a good basis for preparation and will be presented in modules, by approved instructors, who have achieved CFM certification.

Tuesday, August 28, 2012 in Columbus
Thursday, November 8, 2012 in Columbus

Losing Control Gaining Perspective

50 years (and more) of Ohio Floodplain Management Part 3

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

Fifty-one years ago, ODNR's Floodplain Planning Unit was formed. In the last two editions of ***The Antediluvian*** we reviewed our first 40 years. In this article, we will review the tumultuous last few years within the old Division of Water.

During 2001, we said goodbye to longtime Program Manager, Peter Finke, who after 31 years, retired as Deputy Chief. With the addition of an engineer and Geographic Information Management Specialist the FMP strengthened our capacities in those areas and conducted a *Post-Disaster Response Survey* of Local, State, and Federal officials, citizens, and other professionals to help refine our process. ***The Handbook*** (4th edition) was published. The challenge of State agency-undertaken SFHA-development continued to be actively discussed by Federal, State and Local officials. FEMA provided online access to ***Flood Insurance Studies*** and *Flood Insurance Rate Maps* beginning a dramatic shift away from necessitated office visits and photocopied maps and studies. In the aftermath of September 11th, officials scrambled to respond to the devastation, braced for expected additional attacks, and repositioned resources and talents to address the unknown extent of technological hazards. Understandably, the nation turned to its risk reduction professionals for their expertise. When on November 22, 2002, FEMA was incorporated into the newly created Department of Homeland Security, many feared the demise of its natural hazards risk reduction functions. That debate continues to this day. In 2002, twenty communities applied for projects through the FMP's **Appalachian Flood Risk Reduction Initiative** (AFRRI) to generate flood-mitigation plans and detailed flood mapping. The FMP was honored to receive the *Tom Lee Award for Excellence* in recognition of the program's effective state and national leadership.

File picture of Peter Finke

Floodwaters rose in southeastern Ohio in June and then all across northern Ohio in July, 2003 so the FMP staff once again deployed to assist. Owners of flood-insured structures could now apply for federal *Increased Cost of Compliance* (ICC) funds to assist with their recovery. The 4th edition of the ***Ohio Floodplain Regulation Criteria*** contained suggested language and rationale for higher standards along with detailed guidance for adoption of NFIP-compliant regulations.

In 2004, the FMP was honored by ODNR Director Speck and then Governor Taft in recognition of having compiled an inventory of structures in Ohio's floodplains, a fundamental measure of flood risk. When floods returned, *Ohio's Disaster Response Initiative,* a partnership of the Ohio Building Officials Association, OEMA, and (an expanded) FMP staff, deployed trained officials from across the state to Washington and Belmont counties. Armed with the first version of the FMP's *Percent Damage Field Estimate Form,* these groups assisted local officials to conduct hundreds of damage assessments, accomplishing in a few days what would have otherwise taken weeks. Though owners of one Ohio River village home witnessed flood depths of seven feet

Picture taken by Floodplain Staff in 2005 of mitigated structure in Powhatan Point, Ohio

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destroying their single story ranch, they were able to rebuild more quickly and, importantly, compliantly because of the efforts of this post-flood damage assessment partnership. Additionally, because the home was flood insured, ICC-funds helped them to elevate their home. The year 2004 also saw the launch of FEMA's 5-year map modernization initiative to update aging flood maps across the nation. In August, the *Ohio Manufactured Home Commission* (MHC) was formed with sweeping authority to regulate to installation of manufactured homes, including ensuring compliance with flood risk reduction standards. Previously, the Ohio Department of Health had sole authority for licensed parks, local floodplain administrators had been responsible for such development on individual lots. Many questions remained about the means the MHC would use to accomplish these requirements.

With seven flood-related Presidential Disaster Declarations for Ohio in just two years, the importance of mitigation seemed ever-present as the FMP sought to assist communities break the repetitive damage cycle. A fifth edition of ***The Handbook*** was published and offered online. Though floods recurred across the state in 2005, few outside those immediately involved focused on anything other than the devastation of the Gulf Coast.

In the wake of the Gulf Coast destruction, in 2006 FEMA adjusted its map modernization efforts and redirected funding to accommodate the increased awareness of the need to ensure that levees were competent to provide protection to the regulatory level flood event. The Ohio Legislature reorganized the FMP's statutory authority (ORC 1521), to clarify a universal compliance requirement to meet or exceed NFIP, State, or Local flood risk reduction standards, thereby eliminating the need to coordinate the parallel sets of standards envisioned by the 1991 changes. The new wording provided that the local floodplain regulations would be respected. ODNR's Director was designated to pursue violations both in NFIP-participating and non-participating communities. The FMP promoted ASFPM's *No Adverse Impact* initiative to further assist community officials with the range of flood risk reduction options. The FMP staff completed a series of courses to align with the *National Response Plan*, becoming familiar with the *National Incident Management System* (NIMS) to allow for maximum interagency coordination of disaster response.

As the annual State Floodplain Management Conference was underway, widespread flooding struck northern Ohio in August 2007 damaging thousands of structures. As OBOA inspectors were deployed, the FMP distributed to the teams a newly developed, further simplified, *Substantial Damage Field Estimate Form* using a region-specific USACE depth-damage table. This new form dramatically reduced the time required for the field estimate and was credited with enabling the teams to provide thousands of property owners with timely flood risk reduction information. The increased number of these assessments allowed for a far more timely response for property owners. In the years following however, the owner-provided repair estimates often were drastically lower than the insurance claims filed. Local officials pointed to the need for coordination between the regulatory and insurance sides to rectify these discrepancies.

In 2008 Floodplain Program Manager, Cynthia Crecelius retired after 30 years service. On January 30, 2009, the tenth and last chief of the Division of Water, Debbie Hoffman, departed, sixty years after C.V. Youngquist was appointed the first. David Hanselmann, Chief of the Division of Soil and Water Conservation, was appointed Acting Chief along with the announcement that the two divisions would be merged into one. On July 1, 2009, after 60 years, the Division of Water ceased to exist, replaced by the newly formed Division of Soil and Water Resources. In the next edition of ***The Antediluvian,*** we will point to the FMP's current activities and future direction.

Risk MAP Non-regulatory Products

By Matt Lesher, CFM—(former) Environmental Specialist
ODNR, Division of Soil and Water Resources—Floodplain Management Program

As FEMA transitions from the Map Modernization program to the Risk Mapping, Assessment and Planning (Risk MAP) program, there are new ways to use the data from Map Modernization to help communities identify potential hazards. Through Risk MAP, FEMA has developed several non-regulatory products that can assist communities with community planning, outreach, and education. These products can further identify where flooding may take place within a community. Developing the additional locations could be used to help prioritize potential mitigation actions within the community.

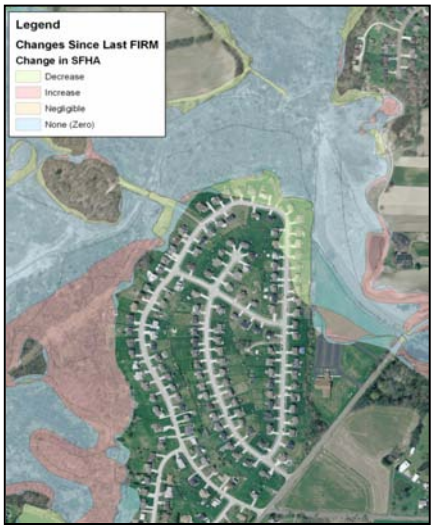

Figure 1: Changes Since Last FIRM (CSLF) Example

The non-regulatory products are grouped into two categories: Basic and Enhanced. Basic products such as Changes Since Last FIRM (CSLF), depth grids, percent chance grids, and velocity grids will be produced for every Risk MAP project. Enhanced products such as Areas of Mitigation Interest (AOMI), data sets for dams, and user-defined facilities will be produced if there is data available to support their development.

The CSLF product compares the existing floodplain boundaries with the updated floodplain boundaries and depicts where they have expanded and contracted. Having this type of information can be a helpful risk communication tool.

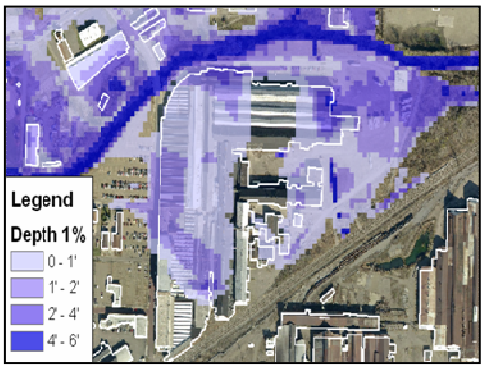

Figure 2: Depth Grid Example

Depth grids provide the depth of flooding for the 10% (10-yr), 4% (25-yr), 2% (50-yr), 1% (100-yr), and 0.2% (500-yr) annual chance flood events. This product is developed by subtracting the water surface elevation from the ground elevation. This product will visually depict levels of risk within the Special Flood Hazard Area.

Where data is available, there are several Enhanced products that can be requested by the local community. The dam-related products are intended to be used by the dam owner/operator, emergency management officials, and planners. These products would depict upstream impoundment areas, downstream inundation areas from a partial or full release, depth grids, flood velocity, and estimated time of flood wave arrival. This information could be used to identify structures and critical facilities that may warrant consideration for mitigation projects. An AOMI identifies areas that would benefit from mitigation measures such as repetitively flooded structures, undersized culverts, emergency routes historically impacted by flooding, and significant erosion areas.

FEMA has used the building blocks provided by Map Modernization to develop non-regulatory products for Risk MAP. These products have been developed to provide communities with tools to enhance floodplain management and link hazard mitigation to additional community needs and goals.

ODNR Implementation of FEMA Digital Products for Community Assistance

By Tim Beck, CFM—GIMS Specialist
ODNR, Division of Soil and Water Resources—Floodplain Management Program

The Ohio Department of Natural Resources (ODNR) Floodplain Management Program uses Geographic Information Systems (GIS) to manage and assess floodplain risk throughout the State. Currently, ODNR is updating its Community Assistance Visit (CAV) methods by incorporating the new FEMA digital data. In addition, the GIS based data allows for digital data management and integration into project plans such as prioritization of mapping needs.

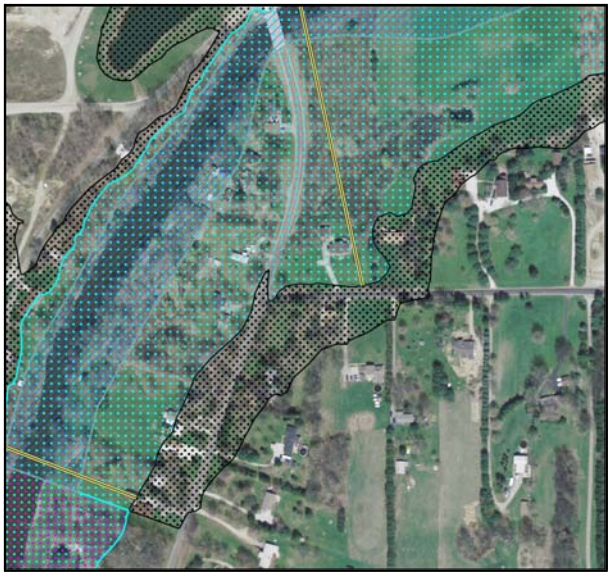

Figure 1: Example of GIS representation of changes in SFHA

All of the layers that make up the effective Flood Insurance Rate Map (FIRM) are available as part of the Digital FIRM (DFIRM) product from the FEMA Map Service Center (MSC). A few examples of the available layers are roads, political boundaries, steam centerlines, Base Flood Elevation cross sections and special flood hazard areas. The FEMA DFIRM datasets were compiled from state and local data and then attributes were standardized, making it easier to do spatial analysis. The data can be obtained from the FEMA MSC website https://msc.fema.gov. FEMA data is available free of charge for floodplain administrators.

To enable better management of the floodplain datasets, the FEMA data is compiled into an ESRI ArcGIS Geodatabase. Compiled data allows for easier updates to the datasets being taken out in the field. To reduce expenses, FEMA has reduced the number of printed maps that are provided to stakeholders. The geodatabase format makes synchronizing of data more efficient. Additionally, FEMA has created a merged statewide DFIRM special flood hazard area layer known as the Regional Flood Hazard Layer (RFHL) that can be obtained from the FEMA MSC.

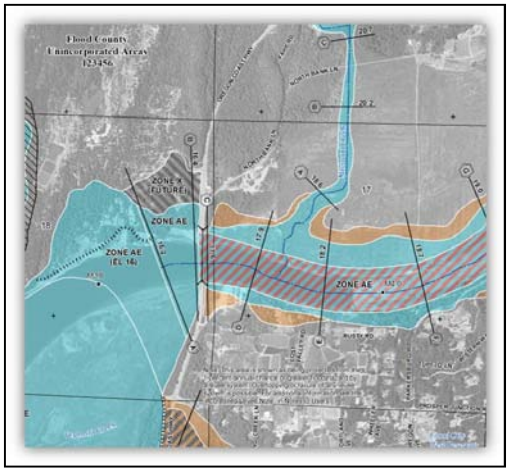

Figure 2: Example of new FIRM format with several colors in addition to the existing blue

To evaluate floodplain development in a variety of circumstances, it is frequently useful to compare the DFIRM data to historic digital datasets. An example of the historic dataset is ODNR's digitized special flood hazard area layer created from the pre-Map Modernization FIRMs. In 2001, ODNR contracted to have the FIRMs digitized for tactical planning and to help with a project called the Ohio Structure Inventory Project. Another dataset that will be used to evaluate floodplain development is the Coordinated Needs Management Strategy (CNMS) linework. The CNMS linework is a tool that FEMA is using to track flood study information in a spatial environment. Imagery is a key component of digitally

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2012 Ohio Statewide Floodplain Management Conference

The 2012 Ohio Statewide Floodplain Management Conference will be held August 29-30, 2012 at the Doubletree Hotel Columbus/Worthington. Please visit http://www.dnr.state.oh.us/tabid/17934/Default.aspx for more details.

The 2012 Conference will offer a three-day HEC-RAS training, the Certified Floodplain Manager (CFM) Refresher Course, two opportunities to take the CFM Exam, Floodplain Management Essentials Workshop Modules, and much more… Information, including Scholarship and Awards criteria, are posted and continually updated on the conference website. Contact Alicia Silverio at 614-265-1006 or Alicia.Silverio@dnr.state.oh.us with any questions you may have.

For information on Sponsorship or Exhibit opportunities, please contact Shawn Arden at 614-898-7100 or SArden@msconsultants.com

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evaluating floodplain development. Here are two example imagery datasets that can be used. The first is the United States Geological Survey Digital Ortho Quarter Quad (DOQQ) imagery from 1988-1989. The USGS imagery provides a snapshot in time to compare with the more current imagery. The second imagery dataset will be the Ohio Statewide Imagery Program (OSIP) data produced from 2006 to 2008. As the second round, also called "OSIP 2" becomes available there will be additional updated datasets to utilize.

Figure 1: Photo of Garmin Puck taken by Floodplain staff

Local and state floodplain management efforts may require evaluation of floodplain development while in the field. One of the challenges to overcome is operating a vehicle at the same time as using a laptop. ODNR's solution is to use a Global Positioning System (GPS) feature of ArcGIS to aid in identifying the location of the car while touring the floodplain. Using the ESRI GPS extension combined with a Garmin USB Puck allows the staff to see exactly where they are in the field in relation to the DFIRM. To do this, the computer must be set to pan the map while touring and/or to set up a point locator. Some of these features are still being tested. Essentially, this process adds Garmin functionality to ArcGIS. Our goal is to minimize the equipment taken into the field and to gain efficiency in data use and collection.

Certified Floodplain Manager Exams

May 25, 2012 @ 9:30 am in Gallipolis
August 28, 2012 @ 1pm in Columbus
August 30, 2012 @ 1pm in Columbus
October 18, 2012 @ 1pm in Findlay
December 10, 2012 @ 1pm in Columbus

Our Website is Flooded With Changes

By Katherine Skalak, EIS—Environmental Specialist
ODNR, Division of Soil and Water Resources—Floodplain Management Program

Over the past few months, the ODNR, Floodplain Management Program website has undergone some major changes in order to make the website more user-friendly. These changes range from updating existing pages to addition of maps and even completely new pages. There have also been other minor changes to the website, which will not be addressed in this article.

References Page http://www.dnr.state.oh.us/water/tabid/3520/Default.aspx

Publications in the *References* section are now categorized by topic. The categories are *Floodplain Administrator, Mapping, Engineering, Insurance* and *Mitigation*. The *Floodplain Administrator* section contains publications relevant to the local official who is overseeing floodplain development in your community. The *Mapping* section contains documents such as where to get your Flood Insurance Rate Map (FIRM), how to read flood maps, as well as the Discovery Reports for those communities currently undergoing a Risk MAP project. The NFIP technical bulletins are located in the *Engineering* section. Additionally, there are many other guidance documents to assist you with technical floodplain. In the *Insurance* section, there are publications to address why a homeowner might need flood insurance and other documents that answer basic flood insurance questions. *Mitigation* is the final section. In this section, you can find information about planning and disaster preparedness, grants, and documents to assist in writing a Hazard Mitigation Plan.

Figure 1: Image taken from ODNR, FPM website

New Pages

There are many new pages on the website. Most of them are related to the new mapping initiative called Risk Mapping Needs, Assessment and Planning (Risk MAP). Included is information on the difference between Map Modernization and Risk MAP as well as project prioritization in Ohio. Also within the *Risk MAP* section, is the current watershed mapping status page. This page shows projects that are currently underway and provides downloadable Discovery Reports for the meetings conducted this past summer. In addition, there will be a page dedicated to the new non-regulatory Risk MAP products. For more information concerning these products, please refer to the article by Matt Lesher on page 14, in this edition of *The Antediluvian*. In addition, there are pages addressing map changes and

Figure 2: Image taken from ODNR, FPM website

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mapping needs (Coordinated Needs Management System (CNMS)). To view the new pages, please go to http://www.dnr.state.oh.us/water/default/tabid/3522/Default.aspx .

New Maps

Another modification to the website is the addition of interactive maps to both new and existing pages, which will enhance the website's functionality. These maps operate similarly to other online maps to which you might already be accustomed. Users can zoom in/out to their desired location. If you click on the map, information relevant to that map will pop up. The *Map Modernization* section's County Mapping Status table has been updated so that the counties are listed in alphabetical order so that it is easier to search. In addition to this table we have added a scalable *County Status Map* with the same information in a different format. The user simply clicks on the county of interest directly on the map, and a pop up box opens with the Map Modernization information such as scoping meeting date, appeals period, and open house meeting date. If that county has been included in a Risk MAP discovery project, that information will also be displayed in the pop up box.

Figure 3: Image taken from ODNR, FPM website

Two of the newly created pages, *Watershed Mapping Prioritization* and *Watershed Mapping Status*, contain interactive maps as well. On the *Watershed Prioritization Map*, watersheds are prioritized based on floodplain mapping needs, flood risk, and mitigation opportunities. The *Watershed Status Map* provides a visual representation of the 2011 Discovery Meetings. In the future, this map may also display mapping projects in the watershed.

For further information or to make suggestions about the website, please contact Katherine Skalak at Katherine.skalak@dnr.state.oh.us or (614) 265-6709.

If I didn't see it, does it still happen?

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

In my first year as an Environmental Specialist, with the ODNR Floodplain Management Program, I can whole-heartedly make the claim that it has been a very enjoyable experience. I am surrounded by a plethora of knowledge, unique staff, and a whole host of statewide floodplain administrators which have been either dedicated to their job for many years or are beginning to enter this realm of work. Within this past year, I have had the opportunity to work directly with floodplain administrators and citizens of the entire state. I am beginning to notice a pattern involving development as defined by our local *Flood Damage Reduction Regulations*, and permitting. "If I didn't see it, it didn't happen". This concept sometimes replaces what should be a permit file in the record cabinet. But there are certainly some instances where development occurs overnight or is done under the radar of those in

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charge of the regulations. This unavoidably does occur and sometimes can be resolved quickly, while at other times it cannot.

As a local floodplain administrator it is your duty to ensure compliance through permitting, maintaining this documentation, and issuing notices of violation to those who are found noncompliant. What are your options to ensure development doesn't occur without proper permitting? Every community is different as far as resources, but if you are a local floodplain administrator, be sure to not only understand how to properly use the Flood Insurance Rate Maps (FIRMs), but it is also necessary to be aware of what is pre-FIRM (built prior to the initial FIRM) and Post-FIRM (built after the initial FIRM). This can be done by direct observation or knowledge of past permit files. You know your community as well as anyone, performing periodic inspections of your floodplain areas is a great way to track development. Even if resources are limited a short tour can be sufficient to identify new or occurring development.

For communities with GIS capability, it can be useful to use FEMA's SFHA data in conjunction with the parcel data to determine whether a new development should be required to apply for a *Floodplain Development Permit.* If their development site lies within the SFHA, then any development is subjected to the permitting process (unless it meets exemption criteria) and it is the citizen's responsibility to submit an application and get a permit. Accessory and nonstructural are the most overlooked types of development, simply because they can be done on a smaller scale or not included in original development plans. This also includes substantial improvements (an improvement equaling or exceeding 50% of the market value of the structure) to an existing structure. These examples of development need to be addressed during the application phase of permitting. It can be done by making changes to your community's development applications, through any educational or outreach efforts that your community performs (public posting/website) or a communication between community officials. Whatever the case may be...they still need a permit!

This is where touring the floodplains within your community can be a vital tool in floodplain management. Educate other local officials or government entities of the requirements for development within the floodplain. Encourage them to identify development themselves and direct citizens, who they work with daily, to be properly permitted before following through with development activities. Being as proactive as possible within your community will make you aware of anything occurring with that SFHA. It will also create a sense of awareness among local residents to follow proper procedure for floodplain development. The overall goal is to have everything that has been developed Post-FIRM (exemptions excluded), to be permitted. We are surrounded with endless opportunity to educate and uphold our duties to the best of our ability as a service to our citizens.

Expired Elevation Certificate

According to the FEMA Library, "The NFIP Elevation Certificate (FEMA Form 81-13) shows an expiration date of March 31, 2012. While FEMA is awaiting the review and approval by the Office of Management and Budget (OMB), the current version showing the March 31, 2012 OMB Expiration Date may continue to be used. When the new form is approved, FEMA will permit a "phase-in" of the new Elevation Certificate on a voluntary basis. Please review Bulletin W-12023, which can be found by visiting: www.nfipiservice.com/Stakeholder/pdf/bulletin/w-12023.pdf, for additional information."

The Antediluvian

Ohio's Floodplain Management Newsletter

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

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James Zehringer, Director

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