



# The Antediluvian

## Ohio's Floodplain Management Newsletter



Volume X

Winter 2003

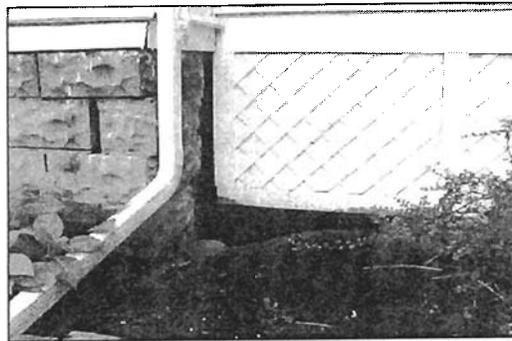
Issue 2

**THE FLOODPLAIN MANAGEMENT PROGRAM MISSION:** To provide leadership to local governments, state agencies, and interested parties toward cooperative management of Ohio's floodplains to ensure the reduction of flood damage and the recognition of the floodplain's natural benefit. This mission is accomplished through technical assistance, public awareness, education, and development / protection standards.

### Help Wanted The Floods of 2003

By CHRISTOPHER M. THOMS, CFM, ENVIRONMENTAL SPECIALIST,  
DIVISION OF WATER

It is a truism that, in floodplain management, a lot of time and effort is spent trying to correct misinformation about floodplain management. Sadly, in the aftermath of a flood, there is typically more fiction than fact in circulation. Can you help?



ODNR's Floodplain Management Program offers help. Following the June-flooding in the southwest and the July flooding in the northwest and then the northeast, our staff was again in the field, offering assistance and training to local floodplain officials. Using ODNR's own publication, *Substantial Damage Determinations A guide for local officials*, and FEMA's *Residential Substantial Damage Estimator*, county-wide post-flood training was conducted to assist local floodplain officials with implementing their

substantial damage determination process. Following the sessions we accompanied local officials as they examined flood-damaged structures to estimate the extent of that damage. We were impressed with the professionalism and courtesy of these officials as they spoke with owners and residents of numerous flooded structures. We were also aware of an all too familiar pattern of misinformation being reported by those who had been flooded. This pattern was not restricted to one section of the state.

(continued on page 2)

After only six weeks of owning their first home, a young couple came back from vacation to find the front wall of their basement collapsed and their flooded-car in the driveway (see above photos). Floodwaters had reached five inches above the first floor and within days mold coated the floorboards and most surfaces in the basement. A few blocks away a structure housing several businesses received almost two feet over the first floor and an inundated basement. Mud, water, and debris coated offices, classrooms, retail stock, and equipment. Over 250 miles away, a man sat in his newly remodeled kitchen staring at even newer watermarks on all the newly installed cabinets piled high with their contents now drying on top.

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The couple related that when they first looked at the house, a nearby property-owner cautioned them that it was in a floodplain. They related that their realtor dismissed their concerns as unwarranted stating the property was only in the floodplain because of elevation and that there was a process to have the floodplain designation changed for such properties. With this in mind, they paid their flood insurance premium. The landlord of the nearby business structure was told he couldn't purchase flood insurance because his building was in a floodplain. The uninsured remodeler muses he never will live in his floodprone house again.

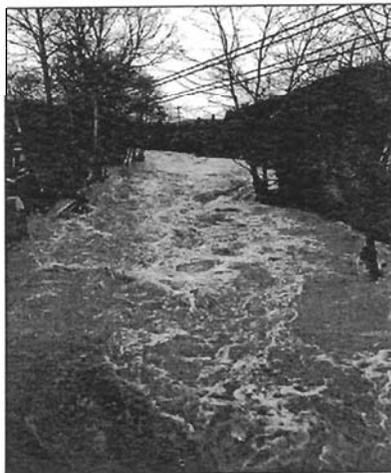


The NFIP offers help. Before, during, and after every flood; federal, state, and local floodplain managers confront these and similar flood-myths. It is encouraging to hear more and more local floodplain officials fighting to get out the facts and counter the fictions, and we are hearing from more and more people who know the difference. However, it is provoking when a realtor does not tell his clients that elevation is very important in assessing flood risk. Despite our combined efforts to repeat the fact that anyone may buy federal flood insurance for property in a community that participates in the National Flood Insurance Program, it is maddening to hear the fiction (still too often) that your ability to buy flood insurance depends on whether you're in or out of the floodplain. As often as we explain that a 100-year floodplain can and does flood more than once a century, it is nevertheless sad to see the flooded property owner despair at

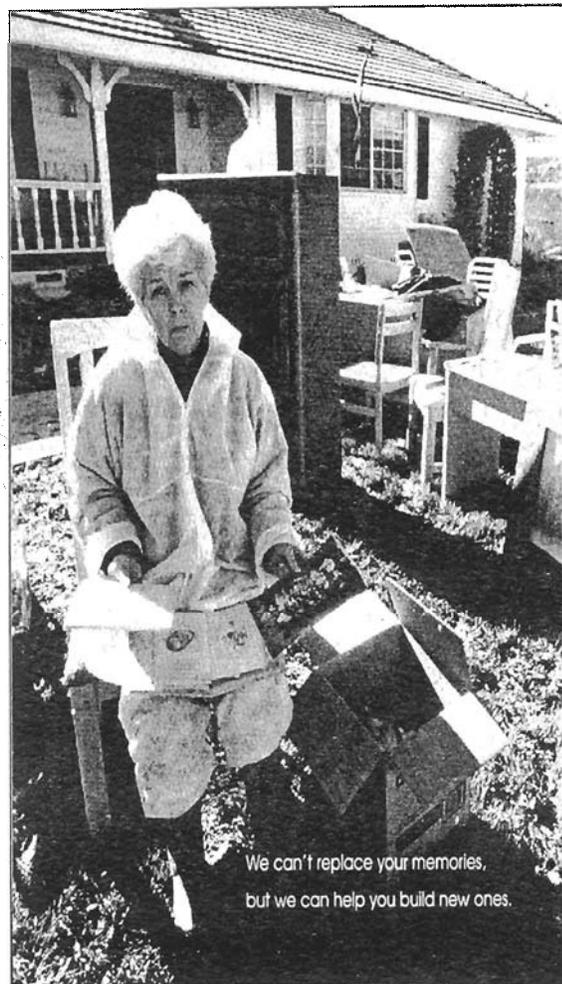
the loss of their property.



The local floodplain administrator has determined that the couple's Pre-FIRM house is substantially damaged. He advised the couple to apply for the **Increased Cost of Compliance (ICC)** rider that is included with all federal flood insurance policies though he is concerned that the cost of bringing the structure into compliance—along with repairing it—will exceed ICC and insurance payments. The couple's insurance agent has estimated the damage to be great though not total, so the cost of moving after demolition may also exceed ICC and insurance payments. Even if a legitimate variance could be granted, the structure is now subject to Post-FIRM flood insurance premium rating and a variance would increase that premium. The business landlord and uninsured homeowner can apply for SBA low-interest loans that they will then need to pay for in addition to their existing mortgage and other pre-flood expenses.



The couple has flood insurance and is eligible for ICC funds. The business landlord and uninsured homeowner can apply for SBA low-interest loans. The realtor is correct that FEMA offers a process whereby properties incorrectly designated as floodplain can be correctly designated, as indicated. Property owners are learning more about their choices for repairing, retrofitting or relocating, as appropriate.



After each flood, people search the sodden remnants of their homes and businesses, hoping to find photographs, documents, heirlooms, and mementos. All too often the reports of lives lost underscore one of the biggest flood myths, that flood insurance and/or flood disaster assistance can completely undo flood disasters. While avoiding rather than recovering from flood damage is the best strategy, as floodplain managers we will continue to provide a range of responses to those who are at risk of flood damage knowing that though we cannot completely undo, we all can help.

# Controlling Urban Runoff

Two years after Allison, Houston has reached a watershed moment

BY KEVIN SHANLEY, PRESIDENT, BAYOU PRESERVATION ASSOC.  
(reprint from *Houston Chronicle* 6/13/03)



Houston is exploding with growth. But city building can be a messy business, and the infrastructure to support the growth often can't keep pace with the demand.

The Houston region is especially challenged to safeguard its citizens from the damaging effects of heavy rainfall on a very flat coastal landscape. Much of the early city was built within natural floodplains, and many other older parts have been put at risk from increased runoff coming from newer upstream development.

Tropical Storm Allison should have been a clarion call to us that it's time to work together to create regional solutions to our flood damage risks. More than \$5 billion in damages and more than 70,000 homes damaged in one event shows the magnitude of our challenge. The dozens of local municipalities in the region, the county governments, the various drainage districts, and the state and federal governments are all players in the problems we face. They all must be players in the solutions we need to create.

Urbanization, or city building, has a huge effect on natural drainage systems and the watersheds that drain into them. As more and more people join the city, whether in the new communities around the periphery with fresh rooftops, driveways and

streets, or in the inner-city neighborhoods sprouting new homes at ever-increasing density, the overall effect is to speed up the rate at which storm water runs off the land and into the streams.

We have traditionally defined flood control as "better drainage"—let's just get rid of the rain water as fast as we can. But when you add up the thousands of storm drain systems draining all the neighborhoods of the Houston region, and you toss in a typical Gulf Coast tropical storm, there is simply not enough carrying capacity in our bayous to hold all that runoff at the same time. Lo and behold, we get flooding!

As new neighborhoods are built with good modern drainage systems and as older neighborhoods successfully lobby to get upgrades to their ageing and inadequate drainage systems, the flooding problem can be just moved from one neighborhood to others downstream.

In a small town, better drainage may be all you need to minimize flood hazards, just as two streets and a blinking red light may be all the transportation system a small town needs. But the Houston metropolitan region has grown beyond the point where we can solve our problems with just more, or better drainage. It's time to begin to think in terms of watershed management to address our flooding and stormwater challenges, just as long ago we graduated from country roads and blinking red lights to traffic management—freeways, thoroughfares, buses, trains, toll roads and electronic traffic management systems to try to keep up with our transportation needs.

The better drainage model is failing our community today (we are high on the list of the worst repetitive flood damage communities in the nation) and it is time to move on.

So what is watershed management? Watershed management will require the city of Houston (and more than 30 other municipalities), working closely with the Harris County Flood Control District, to reduce the amount of water that rushes

into our bayous during a storm event. To use the traffic analogy, the flood control district is like the highway department, only responsible for our stormwater highways. The municipalities are responsible for the regulation, design and maintenance of all the street and neighborhood drainage systems that feed stormwater into the major channels and bayous.

Effective watershed management has three key components: risk management; public policy; and engineering solutions. It can provide residents with a level of safety, security and assurance of protection from known flood hazards that they do not enjoy today. This should be one of the highest priorities of any municipality or regional government.

Risk management means knowing what the flood damage risks really are and aggressively communicating those risk levels to the community. Despite the inclination to deny the risks or to forget (during dry weather) the damages caused by flooding, flood risks are real and ever present in our coastal community and need to be clearly identified.

I recommend that we:

- Map all flood hazards in the city's watersheds, not just those that are currently shown in the Federal Emergency Management Agency's flood insurance rate maps. In a city where a tropical storm can damage more homes outside of the FEMA floodplains than inside them, it seems reasonable to ask that risk maps include all flood risks.
- Map the floodplain as it will be when the watershed is fully developed. In order to accurately map a fully developed watershed, the community has to come to terms with what kind of rules and policies will govern present and future construction in the watershed. That in itself would be a big step forward in the management of our watersheds.
- Identify the floor elevation of each structure in a special flood hazard zone. Considering the difference between being at risk of having 6 inches of water in your house versus having 6 feet of water in your house, floor elevations provide a much clearer measure of risk.
- Include flood hazard zone, floor elevation and base flood elevation on all tax bills (include this information

on utility bills for renters).

- Try to achieve 100 percent participation in the national flood insurance program for properties within special flood hazard zones. Encourage all other property owners in the city to purchase flood insurance, since everyone in our coastal plain is subject to some level of flooding risk.

The public policy aspect of watershed management means creating rules that guide building and construction activities in the watershed to prevent any increase in risk to existing properties and to lessen current levels of flooding risk. Rules should be clear, consistent and transparent.

I recommend that we:

- Adopt the "no adverse impact" standards being recommended by the Association of State Floodplain Managers. Adoption of these standards would help our region significantly lessen our risk of flood damages.
- Establish a zero tolerance policy for increased runoff from any public or private project; there is not a bayou, stream or stormwater culvert in the city that can carry additional stormwater flows.
- Establish an immediate zero-tolerance policy for any loss of floodplain storage capacity, regardless of the size of the project. Whether a project is large or small, there can be no excuse for diminishing the capacity of the floodplain at the direct expense of increasing the flood damage risk to surrounding properties.
- Create floodplain and storage mitigation banks to compensate for the thousands of small projects that the city of Houston (and other municipalities) grant permits for that are not otherwise required to provide on-site mitigation for increased runoff or floodplain fill.
- Require that mitigation projects be fully implemented before the project and its impacts are constructed.
- Establish a permanent city-funded buy-out program to acquire the most frequently damaged structures and undeveloped properties that are deep-est in the floodplains, abutting stream and bayou corridors. These buy-out dollars would complement flood control dollars and the federal disaster mitigation money that we only receive after a major flood.
- Establish a compliance-based buy-out

program to allow elevating or rebuilding frequently damaged structures within neighborhoods that are distant from stream corridors and in the shallow fringe areas of our floodplains. This will help maintain the integrity of neighborhoods and counteract the checker boarding that can occur in neighborhoods.

- Create a long-term plan to substantially reduce the flows from city drainage facilities into our bayous. Our problem is not that we have too much rainfall; it is just that we get it all at once. We have to build into our city storm drainage systems the ability to temporarily detain the water and stretch out the length of time the stormwater takes to get to the bayous.

Finally, engineering solutions are the real answers to the question of how to build a great city without ever increasing the flood damage risks for the community. Improved engineering and design standards provide the detailed "how-to" for the transition from a better-drainage model to a watershed-management model and for responding more appropriately to our rainfall, our topography and our ecology. Improved design solutions need to steer us away from thinking that a bayou is just a bottomless sewer to carry away our drainage; to recognizing that our bayous have limited carrying capacity and that rainfall needs to be held and detained close to where it falls in the watershed. As the region's population increases and the urban density increases, we need to recognize the role our bayous will have to play in providing seriously needed recreational open space and urban habitat. Only with watershed management can we keep our streams and bayous from becoming single-purpose, hydraulic super-highways while minimizing flood damages.

I recommend that we:

- Change from the better-drainage model of stormwater planning and engineering (which just increases flows into bayous and worsens flooding) to a watershed-management model of stormwater planning and engineering, which controls and reduces the amount of water leaving a watershed. This means designing into the entire drainage system the capacity to store water, not to just move water. Storage should be built into street design, storm drain piping design, channel design, neighborhood

design and regional planning. Storage should not be an afterthought.

- Develop and adopt design standards for all drainage facilities that maximize multiple benefits: stormwater storage, water quality, recreation and ecosystem benefits. Land is a scarce resource in an urban area, and money is even scarcer, so every part of a drainage system should be evaluated and designed to serve more than just one purpose. Streamline and standardize procedures to allow and encourage multiple agencies to participate in funding the construction and maintenance of the drainage system.
- Develop and adopt building regulations that require or encourage measurable decreases in the rate of runoff on both new and existing projects. Adopt standards that encourage rainwater storage on flat roofs, the use of cisterns for pitched roofs, storage media under parking lots. Identify methods to enhance shallow aquifer groundwater recharge to reduce runoff and to provide water for our urban tree canopy; and encourage the use of systems that provide natural filtration, treatment and cleansing of urban runoff.

Properly executed, watershed management is a wise investment of community resources to reduce the risk of flood-induced damages while creating other sorely needed benefits: recreation opportunities, water quality improvements and urban habitat.

Watershed management approach will require a greater level of capital investment than we are currently spending on drainage, but do we really have a choice? If we would spend just the amount that we have lost in direct flood damages over the last several major storms that have passed across our region, we could accomplish all the above recommendations and more.

Two years ago, Allison provided us with an expensive warning. Had the storm deposited its watery cargo just a little farther to the west, the damages and loss of life could have been an order of magnitude worse. Let's get to work now to be sure that as this city grows in size and population, it also grows in safety and quality of life. Let's be sure that it can, without irony, live up to its nickname: "The Bayou City."

# FLOODPLAIN MANAGEMENT OHIO— STATEWIDE CONFERENCE 2003



By Christopher M. Thoms, CFM, Environmental Specialist, Division of Water

It has been said that flying isn't difficult, just aim at the ground and miss. Though there were some close scrapes, the 2003 Conference Planning Committee (according to your comments) has provided another successful floodplain management conference. In the midst of a year replete with floods around the state, the Ohio Floodplain Management Association (OFMA)—in cooperation with the Ohio Department of Natural Resources (ODNR) and the Federal Emergency Management Agency (FEMA)—hosted the fourth statewide floodplain management conference. On August 26<sup>th</sup>, 2003, the Certified Floodplain Manager (CFM) Exam was offered at ODNR-headquarters. On the 27<sup>th</sup> and 28<sup>th</sup>, the conference was held at the Ramada Plaza Hotel and Conference Center in Columbus, Ohio. Over 40 experts from a variety of fields gave floodplain management presentations in one of three tracks: *Fundamental*, *Advanced*, and *Engineering/Technology*. Nearly 170 registrants (including local, state, and federal officials, consultants, and citizens) attended either one or both days of the conference.

The theme of this year's conference was "Finding Where You Fit In." Presentations covered a spectrum of floodplain management topics including: *No Adverse Impact (NAI)*, mitigation programs (including natural hazard mitigation planning integrating floodplain and watershed management, administration and enforcement of local floodplain regulations), grant writing, GIS, map modernization, and flood warning systems. The keynote speaker, Tom Denbow, of URS Consultants and the newest member of the Ohio Water Advisory Committee, gave an outstanding presentation on the comprehensive view of floodplain

management from incorporating a NAI approach to the integration of programs and science. As always, attendees absolutely loved the buffet lunches.

## CECs

Attendees of this year's conference receive up to twelve Continuing Education Credits (CEC)s (six per day) from the Association of State Floodplain Managers (ASFPM) for CFM-certification, up to nine and three quarters CECs from the American Planning Association and the Ohio Planning Conference (OPC) for American Institute of Certified Planner membership, and two credit hours of continuing education for all classes of certification from the Ohio Board of Building Standards.

## OFMA Recognition Awards

Each year, OFMA seeks to honor outstanding individuals for their involvement, dedication, and service to the field of floodplain management. This year's conference recognized the following awards recipients:

The *Distinguished Member Service Award*—renamed the *Jerry J. Oney Distinguished Member Service Award* in memory of Ross County's former floodplain administrator—was awarded posthumously. Jerry's widow received the award.

The *Jerry J. Oney Distinguished Member Service Award* was also given to **Gary L. Ziegler** out-going OFMA Chair (City of Findlay Building Department).

The *Award for Innovation in Floodplain Management* was presented to **Chad Berginnis**, (Supervisor, ODNR-Floodplain Management Program) for his authoring of the Appalachian Flood Risk Reduc-

tion Initiative.

Congratulations to the 2003 OFMA Award recipients.

Nominations are currently being accepted for 2004 honors. The deadline for submission is May 3<sup>rd</sup>, 2004. For criteria, application forms, or more information, please call 614-265-6750 or email:

[cindy.crecelius@dnr.state.oh.us](mailto:cindy.crecelius@dnr.state.oh.us)

## OFMA Officers

For the first time, OFMA Officers were elected at the conference (*see related article page 18*).

## Sponsors

In addition to attending the many sessions and discussing areas of concern with our colleagues, each year's conference also provides the opportunity to speak with representatives from organizations, consulting firms, and agencies offering a variety of services and a range of information related to floodplain management. This year's conference sponsors include: Burgess & Niple, Limited (B&N); Evans, Mechwart, Hambleton, & Tilton (EMH&T); Fuller, Mossbarger, Scott, & May Engineers (FMSM); E.L. Robinson Engineering, PBS&J, and the Federal Emergency Management Agency (FEMA). Exhibitors consisted of the Association of State Floodplain Managers (ASFPM); the Building Officials & Code Administrators, International (BOCA); the Ohio Department of Natural Resources – Floodplain Management Program (ODNR-FMP); the Ohio Environmental Protection Agency – the Ohio Environmental Education Fund (OEPA - OEEF), the Ohio Floodplain Management Association (OFMA); the United States Geological Survey (USGS); and the Water Management Association of Ohio (WMAO).

# Management in Ohio—Statewide

A Sincere Thank you to all the Floodplain



Conference 2003 presenters. You all helped us in

*Finding Where We Fit In.*

## Thank you

Though the 2003 Conference Planning Committee has been working on this year's conference since the conclusion of last year's, many hands went into launching and keeping it flying along. The committee offers its sincere thanks to: the **Presenters**—for their preparation and communication, **FEMA**—for providing funding and support, **FEMA Region V staff**—for their advice, support, and participation, the **Sponsors**—for their participation and financial support, the **Exhibitors**—for showcasing their programs and services, and (without question) the **Attendees**—for their time and attention. Through our

combined efforts we are strengthening floodplain management in Ohio.

As Conference Planning Committee chair, I would be remiss not to specifically thank the other **2003 Conference Planning Committee** members: Doug Cade, P.E. Manager - Ironton Office (E. L. Robinson Engineering), Cindy Crecelius, CFM, Program Manager (ODNR-FMP), Fred Fowler, Supervisor, (Delaware County Building Department), Miles Hebert, P.E., CFM (EMH&T), Kohei Ishikawa, AIA, CBO, Portage County, Kari Mackenbach, CFM Program Manager for Planning and Mitigation (EMH&T), Paul Plummer, P.E. (Groundwater Consultant), Mary

Sampsel, P.E. (Union County Engineer's Office), Ray Sebastian, CBO, (Clermont County Building Department) Alicia Silverio, CFM, Environmental Specialist (ODNR-FMP), and Gary Ziegler, Director (Findlay Development Services Department).

## Looking for those willing to fly

OFMA is already preparing for next year's conference and welcomes your comments, suggestions, and participation. Please contact us at 614-265-6750 to work with us and... we'll see you all at **Floodplain Management in Ohio—Statewide Conference 2004.**

## FEMA RELEASES 4<sup>th</sup> IN SERIES of MITIGATION PLANNING HOW- TO's

BY RICHARD ROTHS, AICP,  
FEMA REGION V

The Federal Emergency Management Agency (FEMA) has released the fourth in a series of documents that provide guidance on the preparation of all-hazard mitigation plans. This book is entitled *Developing the Mitigation Plan, identifying mitigation actions and implementation strategies (FEMA 386-3)*.

Mitigation Planning is a collaborative process whereby hazards affecting a community are identified, vulnerability to hazards assessed, and consensus reached on how to minimize or eliminate the effects of these hazards. For years, disaster recovery was based on a disaster response driven system where the only thought was to get the communities back on their feet as soon as possible. That rationale led to ever increasing costs for disaster relief to communities, states and the Federal government as sites were damaged multiple

times. After re-evaluating this strategy, Congress decided that FEMA should place more emphasis on the planning process to promote and support sustainable, disaster resistant communities. Towards this end, FEMA is working with State and local partners to be contributing players in moving communities to meet the challenges of reducing future damages through mitigation planning and the funding of various planning programs.

*Developing the Mitigation Plan, identifying mitigation actions and implementation strategies* helps communities going through the process of:

- Developing mitigation goals and objectives
- Identifying and prioritizing mitigation actions
- Preparing an implementation strategy, and
- Documenting the mitigation planning process through the writing and reviewing of the plan.

The document also includes worksheets, where applicable, to help the reader through the process of identifying and prioritizing the mitigation actions.

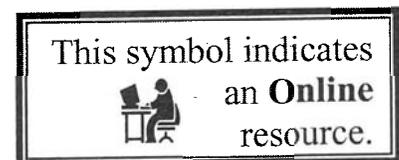
Other documents in this series include:

- *Getting Started, building support for mitigation planning (FEMA 386-1)*
- *Understanding Your Risks, identifying hazards and estimating losses (FEMA 386-2)*
- *Integrating Human-Caused Hazards Into Mitigation Planning (FEMA 386-7)*.

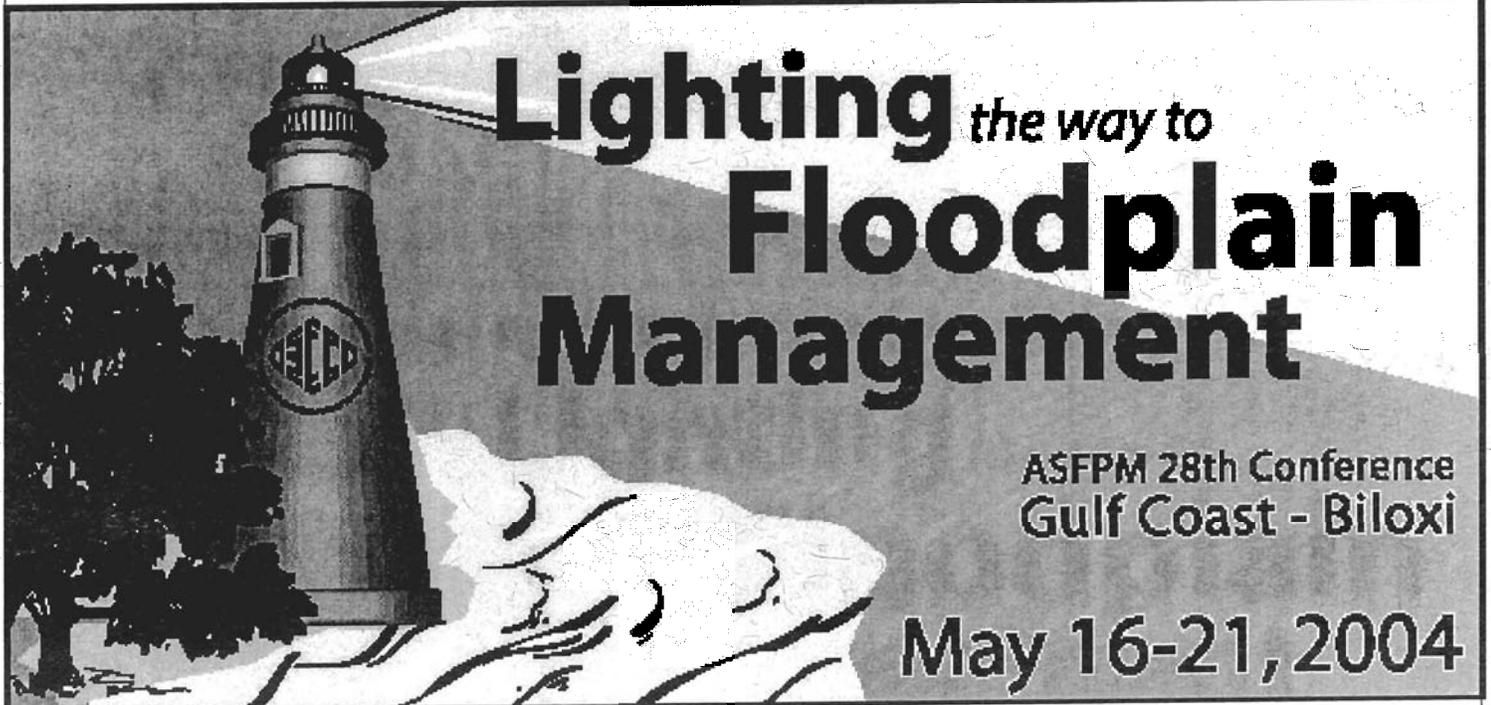
Five additional *How-To's* will be released in the future. Those documents will cover such topics as ensuring the success of the plan, benefit cost analysis, historical resources, multi-jurisdictional approaches, and securing resources.

To obtain copies of the *How-Tos*, you can contact the FEMA Warehouse at 1-800-480-2520. All of the documents are available in hard copy and several are available on disk. In addition, the documents are available on the Internet at:

[www.fema.gov/fma/planresource.shtm](http://www.fema.gov/fma/planresource.shtm)



**SAVE THESE IMPORTANT DATES:  
ASFPM CONFERENCE: May 16-21, 2004,  
ABSTRACTS DUE: October 24, 2003.**



# Lighting *the way to* Floodplain Management

ASFPM 28th Conference  
Gulf Coast - Biloxi

May 16-21, 2004

The CALL for ABSTRACTS is now online for *Lighting the Way to Floodplain Management*, the Association of State Floodplain Managers 28<sup>th</sup> national conference in Biloxi, Mississippi, May 16-21, 2004. It can be viewed at [www.floods.org](http://www.floods.org). 

The conference page also contains Speaker instructions, Sponsorship and Exhibitors Information, and links to exciting things to see and do in the area.

This comprehensive conference will showcase the state-of-the-art in techniques, programs, resources, materials, equipment, accessories and services to accomplish flood mitigation and other community goals.

Non-profit, government, business and academic sectors will share how they successfully integrate engineering, planning, open space and environmental protection all over the nation and the world to prepare for a better, sustainable future.

You'll hear fascinating coastal success stories that demonstrate how flood losses have been reduced and how land and water management practices have improved since killer Hurricane Camille 35 years ago.

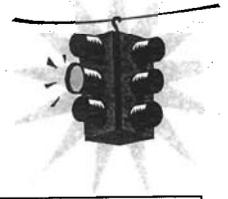
In fact Biloxi, our host city, just received approval of their Hazard Mitigation Plan per DMA-2000 requirements; they are among the first in the nation and the first in Mississippi to achieve this milestone.

There's sure to be a lot we can learn in the area.

An important part of every ASFPM conference is the presentation of the national Awards for Excellence in Floodplain Management. There is plenty of time for you to nominate your outstanding local or state program or person. The submittal information is at [www.floods.org](http://www.floods.org),  under the "Awards" menu, along with the lists of past recipients. Help us celebrate those who make floodplain management a reality around the nation.

This is an event you DON'T want to miss—we look forward to seeing you there! 

# What's at Risk in Your Community's Flood Hazard Areas?



## Implementing the Disaster Mitigation Act of 2000

BY CYNTHIA J. CRECELIUS, CFM, PROGRAM MANAGER, ODNR, DIVISION OF WATER

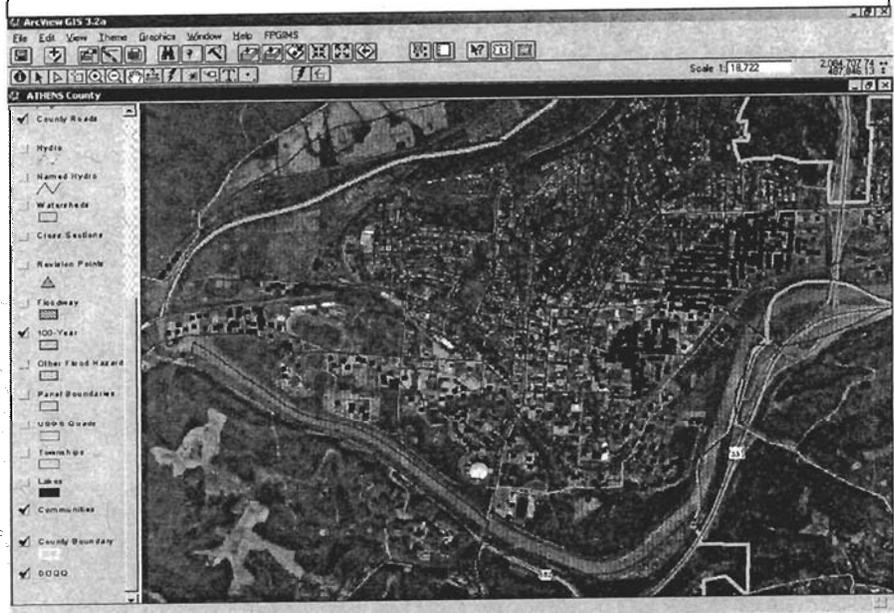
Flooding is the major natural hazard impacting Ohio statewide. Through emergency management and floodplain management there are opportunities to plan actions that will reduce the flood disaster losses that occur every year. For many years, emergency managers and local floodplain managers in Ohio have been identifying ways to help each other prepare, respond and recover from floods so that we are less susceptible to damage and death in the future. The Federal Emergency Management Agency has emphasized the priority of mitigation planning by requiring state and local mitigation plans as a condition of federal disaster assistance. This criterion is contained in the Disaster Mitigation Act of 2000, approved by Congress October 10, 2000.

Under the Disaster Mitigation Act of 2000, FEMA-approved hazard mitigation plans are a prerequisite for Stafford Act mitigation project grant eligibility. FEMA has established that communities must have approved plans by November 1, 2004 to remain eligible. Under the new criteria, plans must address planning process, risk assessment, mitigation strategies and provide for plan maintenance.

FEMA's Hazard Mitigation Grant Program (HMGP) is administered in Ohio by the Ohio Emergency Management Agency and can provide up to 7.5 percent of the total federal disaster assistance in Presidentially declared disasters to local governments for hazard mitigation projects.

The Ohio Department of Natural Resources, Division of Water has accepted a leadership role in building the technology to assist

The screen capture below is an example of the structures located in the 100-year floodplain areas of Athens, Ohio.



state agencies and local communities with basic flood hazard information and the potential impact to structures through Geographic Information System capability. The Ohio Emergency Management Agency has awarded the Division of Water Hazard Mitigation Grant Program funding to continue an initial pilot project to identify structures that are in or adjacent to the federally identified 100-year floodplains in Ohio.

Risk assessment is the fundamental step in mitigation planning. The goal of the Floodplain Management Program's project is to establish the baseline of statewide flood-risk structures that can be used by local communities and state agencies to make a comprehensive assessment. This information will support sound loss estimates and help prioritize effective mitigation projects. The structure inventory is being developed through a custom application

designed for the Floodplain Management Program's Geographic Information Management System (FP GIMS). The integration of this new technology is allowing the Division of Water to link computer software, geographic information about floodplains and descriptive information (type of structure, size, damage history, and elevation data) to determine "What is at risk from flooding in Ohio?"

The Flood Insurance Rate Maps were used to capture the location and geography of the floodplains as mapped by FEMA. The map data is then used as an overlay with image data, Digital Orthophoto Quarter Quadrangle aerial photographs, to allow Floodplain Management Program staff to identify structures as a point or a discrete location. The custom application has also been designed to capture attribute, or descriptive data about each structure.

This attribute data is stored in a Microsoft Access database. This allows for a query and report of the structures at risk from flooding for any community. Two types of reports have been designed at this point; one for specific information about structures and the other on flood events. The information in the reports will assist communities in their vulnerability and comprehensive risk assessment effort to satisfy DMA2000 planning criteria.

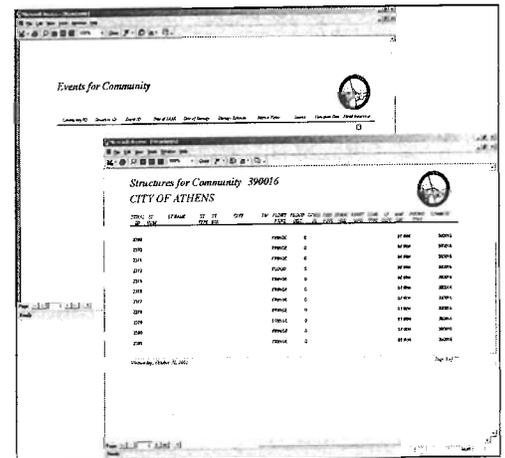
The Division of Water has completed the structure inventory statewide and this data is available from our website. The help of local communities and state agencies will be needed to collect the information about structures and events impacting their community and property. If your community has GIS capability you can obtain the flood hazard area coverage from the Department of Natural Resources Geographic Information System site at: [www.dnr.state.oh.us/gims/default.htm](http://www.dnr.state.oh.us/gims/default.htm)

The flood hazard data can be accessed by using the *Data Search and Metadata* pull-down by *County*. Select your county. The three coverages concerning flood hazard information are the *100-year Floodplains*, *Other Flood Hazard Areas (500-year)*, and *Floodway Areas*. The image data (digital orthophoto quads) are available from the Department of Administrative Services site: [www.state.oh.us/DAS/dcs/Gis/doqq/index.htm](http://www.state.oh.us/DAS/dcs/Gis/doqq/index.htm). DOW is also working to create a product for communities without GIS capabilities.

If your community is working on mitigation planning and has interest in flood hazard information and assisting the Floodplain Management Program in collecting attribute information please contact our office at (614) 265-6750.

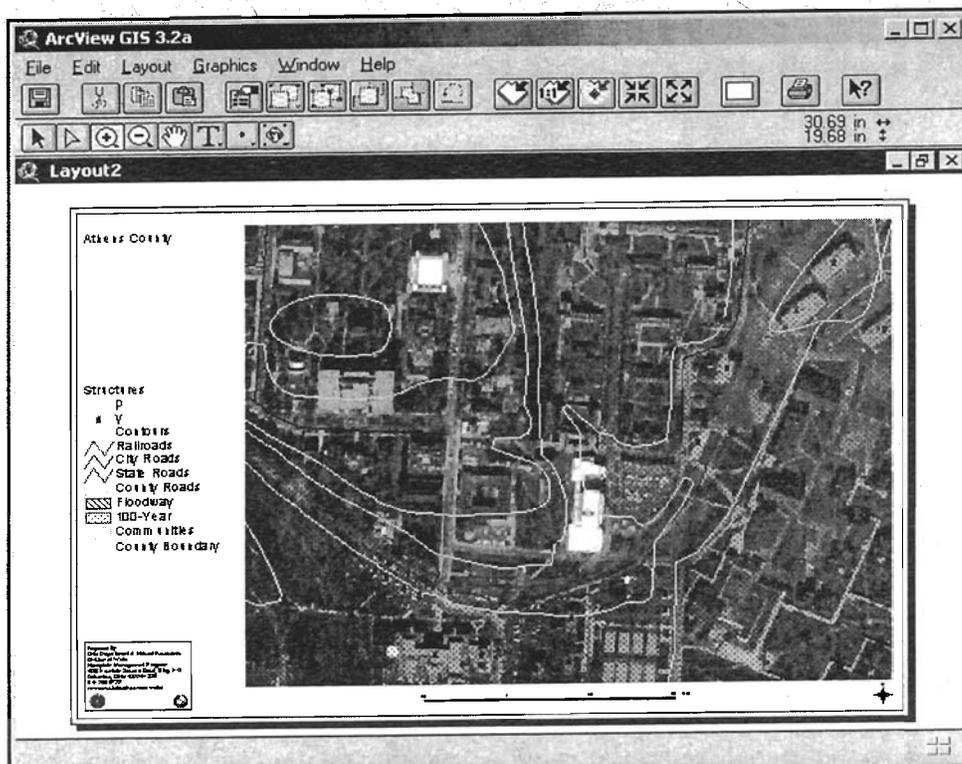
**Reports concerning specific structure data and the history of past events can also be created. The information to support these reports is needed from local communities and counties.**

Communities may either obtain a copy of the database and directly input their information, or complete worksheets that will allow Division of Water staff to complete the database for those locations that do not have



GIS or database capabilities. The completion of the attribute information is a second phase for this project and the details of how this will happen are still being formulated.

The baseline flood risk information from this project will be very valuable to local communities and state agencies as vulnerability is assessed and alternatives for mitigation are identified. The Division of Water staff are currently piloting the use of the structure inventory and testing the worksheets for collecting attribute information with several of the Appalachian Flood Risk Reduction Initiative (AFRRI) communities (see related article page 12). So far the data have been well received, and it is believed that many communities will have considerable cost savings, since neither consultants nor their own staff will need to develop the structures-at-risk data. Some consultants have indicated that this may save several thousand dollars of labor in terms of assisting communities with their risk assessment. The Division of Water also hopes that this information may help the state in general to achieve its goal of an "enhanced" mitigation plan that will enable more money for the Hazard Mitigation Grant Program.



This screen capture represents an example of the type of map that can be prepared for a community. The individual structures have been identified and the software allows for the information about each structure to be stored in a database

# Floodplain Development Standards for State Agencies

BY GEORGE MEYERS, P.E., CFM, PROJECT ENGINEER DIVISION OF WATER



Throughout the Division of Water's dealings with individual communities, two questions often arise. "What are the requirements for State Agencies that develop in the floodplain?" "Can a community require State Agencies to comply with local regulations?" Depending on the nature of involvement by the State, the standards vary. State Agencies' involvement in floodplain development take on several forms. It could involve agencies undertaking work, such as the Ohio Department of Transportation (ODOT) reconstructing a bridge or Ohio Department of Rehabilitation and Correction building a new correctional facility. It could be an issue of a State Agency financing or funding development in the floodplain, such as the Ohio Environmental Protection Agency providing financing for local wastewater treatment plants, or the ODOT providing funding for local projects. State Agencies may also be involved if the agency has preemptive authority over the local jurisdiction, such as the Ohio Department of Health, which licenses manufactured home parks, or the Ohio Power Siting Board that regulates construction of new power plants. In all of these cases, the requirements for floodplain management are addressed in Section 1521.14 of the Ohio Revised Code (ORC).

## CONSULTATIVE AUTHORITY

Section 1521.14.(A) of the ORC requires that "All state agencies and political subdivisions, prior to expenditure of funds for or construction of buildings, structures, roads, bridges, or other facilities in locations that may be subject to flooding or flood damage, shall notify and consult with the division of water and shall furnish such information as the division may reasonably require in order to avoid the uneconomic,

hazardous, or unnecessary use of floodplains in connection with such facilities." Compliance with the National Flood Insurance Program (NFIP) minimum standards and any more stringent local flood damage reduction standard is generally considered sufficient to avoid the "uneconomic, hazardous, or unnecessary use of floodplains" as specified in Section 1521.14.(A).

## STATE UNDERTAKEN DEVELOPMENT

Section 1521.14.(C)(2) of the ORC requires that "Any state agency that undertakes any development that is to be located within a one hundred year floodplain shall ensure that the development complies with the minimum flood damage reduction standards established in rules adopted under division (A)(11) of section 1521.13 of the Revised Code." One hundred year floodplains are identified by the Federal Emergency Management Agency for many areas of the state, and are identified by other sources as well. While the rules referenced by 1521.13.(A)(11) have not yet been adopted, the clear intent is that proposed development in any identified one hundred year floodplain that is undertaken by state agencies shall, at a minimum, be compliant with the minimum floodplain management criteria of the NFIP. Section 1521.14(D) of the ORC is clear that all state agencies shall comply with "...any applicable local floodplain management ordinance or resolution." Communities that participate in the NFIP have adopted standards that generally meet the NFIP minimum standards. In some cases, communities have adopted flood damage reduction standards more stringent than the NFIP minimum standards. State Agencies undertaking development in communities with higher standards

must meet the more stringent local flood damage reduction standards.

## PARTICIPATING COMMUNITIES

For development within communities participating in the NFIP, the Division of Water typically views receipt of a floodplain development permit from a compliant local jurisdiction as demonstration of compliance with the flood loss reduction provisions of Section 1521 of the ORC and recommends that State Agencies obtain the local permit. There has been discussion by some State Agencies that they may not be subject to local regulations; however, Section 1521.14(D) of the ORC clearly states, "All State Agencies shall comply with...any applicable local floodplain management ordinance or resolution."

## NON-PARTICIPATING COMMUNITIES

Communities with identified flood hazard areas that do not participate in the NFIP (*a.k.a.* non-participating communities) most likely have not adopted the minimum standards of the NFIP. Information for proposed projects within 100-year floodplains in non-participating communities that are undertaken by State Agencies, therefore, must be submitted to the Division of Water for review prior to construction. The Division of Water will review submissions for compliance with the minimum standards of the National Flood Insurance Program (NFIP) to ensure that the proposed development will not be an unwise, hazardous, or unnecessary use of the floodplain. Coordination with the local jurisdiction is still required to determine if there are any locally adopted floodplain manage-

ment regulations.

## STATE FUNDED OR FINANCED DEVELOPMENT

Development undertaken by counties, municipalities, or private interests that are funded or financed by a State Agency generally fall under the jurisdiction of the county or municipality where the development occurs. A local floodplain development permit is required. In addition, Section 1521.14(C)(1) of the ORC

requires that the agency providing funding or financing shall require the applicant to demonstrate to the satisfaction of the agency that the development will comply with the minimum standards of the NFIP.

## STATE PREEMPTIVE AUTHORITY

For development where a State Agency's regulatory jurisdiction preempts the authority of the community in which the development is

located, Section 1521.14(C)(1) of the ORC requires that the State Agency, before granting a license, permit or other authorization for development shall require the applicant to demonstrate to the satisfaction of the agency that the development will comply with the minimum standards of the NFIP.

Please contact the Floodplain Management Program if you have questions concerning any of the items in this article.

## Appalachian Flood Risk Reduction Initiative



BY STEVE FERRYMAN, CFM,  
ENVIRONMENTAL SPECIALIST,  
DIVISION OF WATER

This article is the last in a series of four that highlight the progress of the Appalachian Flood Risk Reduction Initiative (AFRRI). AFRRI is a grant administered by the Floodplain Management Program to help communities develop natural hazard mitigation plans that are compliant with the Disaster Mitigation Act of 2000 (DMA2K) (see related article page 9).

The fifteen AFRRI communities are in the home stretch of the planning process. By late spring 2003, the core groups in each community had developed hazard profiles, asset inventories, loss estimates, and problem statements (see previous articles). This summer core groups worked on developing community mitigation goals and objectives. Goals are broad statements that describe the desired state of the community, or where the community wants to be. Most plans contain a goal similar to "eliminate the loss of life and reduce damages caused by natural hazards". Objectives help narrow down the goals by describing

measurable outcomes that help the community work toward their goals. When developing objectives, communities considered the physical changes that hazards cause in their community, emergency response, and public education as they relate to each goal. Next, the core groups developed local mitigation activities.

The core groups began by referring back to the problem statements identified earlier in the planning process. Communities brainstormed possible activities that would address the identified problems and help them reach their objectives and goals. Mitigation activities generally fall into six categories: preventative, property protection, emergency service measures, structural projects, natural resource protection, and public information. The mitigation activities ranged in scale from distributing hazard awareness brochures, to developing a stream gauge network that is linked to a new siren warning system. After the core groups determined which activities the community could realistically undertake, action plans were developed. An action plan identifies a lead person for the activity, start and finish dates, estimated cost, possible funding sources, and milestone tasks necessary to complete the activity.

Most communities are currently developing procedures to implement, monitor, and adjust their natural

hazard mitigation plans. Core groups began by identifying the committee that will oversee the implementation of the mitigation plan.

The committee's main responsibilities are to ensure that mitigation activity progress is monitored, and the plan is adjusted as needed and re-adopted at least every five years. Many communities will require semi-annual reports on scheduled mitigation activities using sample forms found in *FEMA Mitigation Planning How-to Guide #4* (see related article page 7).

The final stages of the planning process include gathering additional public input on the draft plan, finalizing the plan document, and obtaining certification from the Ohio Emergency Management Agency that the plan meets DMA2K requirements. The plan must then be formally adopted and sent to FEMA for final approval.

The success of the AFRRI grant program has encouraged our office to apply for grant money to fund the development of local natural hazard mitigation plans next year. Contingent upon the Floodplain Management Program receiving the needed funding, we would like to expand the target audience for the grant to include communities statewide. Look for further details on the Floodplain Management Program's website in late fall.

# OSWAC Honors 56 Students at the 2003 Severe Weather Awareness Poster Contest Award Ceremony

BY CHRISTOPHER M. THOMS, CFM,  
ENVIRONMENTAL SPECIALIST, DIVISION OF WATER

This year a 3<sup>rd</sup> grade student from Saltcreek Elementary in Kingston, **MaKenzie Davidson** of Circleville (**Pickaway County**), was honored at the Ohio State Fair as the overall state winner of the 26<sup>th</sup> annual Severe Weather Safety Awareness Poster Contest. MaKenzie's poster (*shown at right*) was judged as most informative, accurate and creative from all the entries received by the Ohio Committee for Severe Weather Awareness as part of our annual statewide poster contest. Her poster will be used to help promote severe weather awareness and—given her winter storm theme—we will begin using MaKenzie's poster for this year's **Winter Safety Awareness Week** from **November 16<sup>th</sup> through 22<sup>nd</sup>**. Each year, the Ohio Committee for Severe Weather Awareness (OCSWA) sponsors two awareness weeks and this poster contest to draw attention to the need to prepare for severe weather. Fifty-six students from nineteen counties were honored as contest winners. They are:

## 1<sup>st</sup> Grade Winners

**Alex Flesher** of Waterford from St. John Central Grade School in Marietta (**Washington County**); **Kaelyn Sack** of Edgerton from St. Mary's School in Edgerton (**Williams County**); **Lauren Fobes** of Doylestown from Saints Peter & Paul Elementary (**Wayne County**); **Jailen Ross** of Reynoldsburg from Rose Hill Elementary (**Franklin County**); **Azrien Isaac** of Trotwood from Salem Christian Academy in Clayton (**Montgomery County**); **Whittney Martin** of Wintersville from Wintersville Elementary (**Jefferson County**); and **Morgan Oberweiser** of Canton from Strausser Elementary in Massillon (**Stark County**)

## 2<sup>nd</sup> Grade Winners

**Olivia Brown** of Jackson from Franklin Elementary (**Jackson County**); **Evan Winfield** of Wintersville from Wintersville Elementary, (**Jefferson County**); **Jenna Knauff** of West Union from Adams County Christian (**Adams County**); **Aaron Lepasca** of Canton from Strausser Elementary in Massillon (**Stark County**); **Sara Stark** of Bryan from St. Mary's School in Edgerton (**Williams County**); and **Caleb Ward** of Dayton from Salem Christian Academy in Clayton (**Montgomery**

## 3<sup>rd</sup> Grade Winners

**Leslie Becker** of Englewood from Salem Christian Academy in Clayton (**Montgomery County**); **Andrea Binz** of Toledo from St. Clement Elementary (**Lucas County**); **Jordan Copeland** of Kingston from Saltcreek School (**Pickaway County**); **Josh Jarrard** and **China Willis** of Salineville from Southern Local Intermediate (**Columbiana County**); **Zachary Lorenzen** of Doylestown from Saints Peter & Paul Elementary (**Wayne County**); **Robyn Simpson** of Winchester from North Adams Elementary in Seaman (**Adams County**); **Nathan Stark** of Edgerton from St. Mary's School (**Williams County**); and **Adam Welsh** of New Lexington from New Lexington Elementary (**Perry County**)

## 4<sup>th</sup> Grade Winners

**Natalie Appel** of Edgerton from St. Mary's School (**Williams County**); **Ashley Glunt** of Warren from Word of Life Christian Academy (**Trum-**

**bull County**); **Brittany Goodman** of Tiffin from Noble Elementary (**Seneca County**); **Matthew Klinger** of Waterford from St. John Central Grade School of Marietta (**Washington County**); **Kelsey Leis** of Union from Salem Christian Academy in Clayton (**Montgomery County**); **Austin Needham** of Salineville from Southern Local Intermediate (**Columbiana County**); **Jacob Pack** and **Samantha Saylor** of Kingston from Saltcreek Elementary (**Pickaway County**); **Danica Parker** of Winchester from North Adams Elementary in Seaman (**Adams County**); and **Lucas T. Pfouts** of Wintersville from Wintersville Elementary (**Jefferson County**)

## 5<sup>th</sup> Grade Winners

**Karli Beasley** of Winchester from North Adams Elementary in Seaman (**Adams County**); **Nathaniel Bowling** of Lewisburg from Salem Christian Academy in Clayton (**Montgomery County**); **Tristen Davis** of Edgerton from St. Mary's School (**Williams County**); **Erica Faber** of Doylestown from Saints Peter & Paul Elementary (**Wayne County**); **Amber Hill** of East Palestine from East Palestine Elementary (**Columbiana County**); **Ervin Lake** of Hammondsville from Southern Local Intermediate in Sa-



lineville (**Columbiana County**); **Hannah Shaffer** of Bristolville from Word of Life Christian Academy in Warren (**Trumbull County**); and **Caitlin Summer Gray** of Jackson from Parkview Elementary (**Jackson County**)

**6<sup>th</sup> Grade Winners**

**Amanda Baker** of Lisbon from Southern Local Intermediate (**Columbiana County**); **Glenn Berger** of Akron from Summit Academy Akron Arts Middle School (**Summit County**); **Jeff Cline** of Kingston from Saltcreek School (**Pickaway County**); **Lauren Finnerty** of Poland from Holy Family School (**Mahoning County**); **Paul Flower** of Edgerton from St. Mary's School (**Williams County**); **April Paskins** of Winchester from North Adams Elementary in Seaman (**Adams County**); **Matt Stallard** of Baltimore from Liberty Union Middle School in Lancaster (**Fairfield County**); and **Enza Tsouris** of Steubenville from Harding Middle School (**Jefferson County**)

All winners received a duffel bag filled with a variety of prizes donated

by the member organizations that make up the severe weather awareness committee.

Seven of these Regional Winners were chosen as **State Winners**. They are:

1<sup>st</sup> grader **Andrew Campton** of Seaman North Adams Elementary (**Adams County**)

2<sup>nd</sup> grader **Andrea Semilia** of Doylestown from Saints Peter & Paul Elementary (**Wayne County**) (see poster below left)

3<sup>rd</sup> grader **Rose-Marie Mazanek** of Poland from Holy Family School (**Mahoning County**) (see poster below right)

4<sup>th</sup> grader **Elizabeth Muska** of Lorain from St. Peter School (**Lorain County**)

5<sup>th</sup> graders **Josh Boesiger** and **Elizabeth Dresbach** of Circleville from Saltcreek School in Kingston (**Pickaway County**)

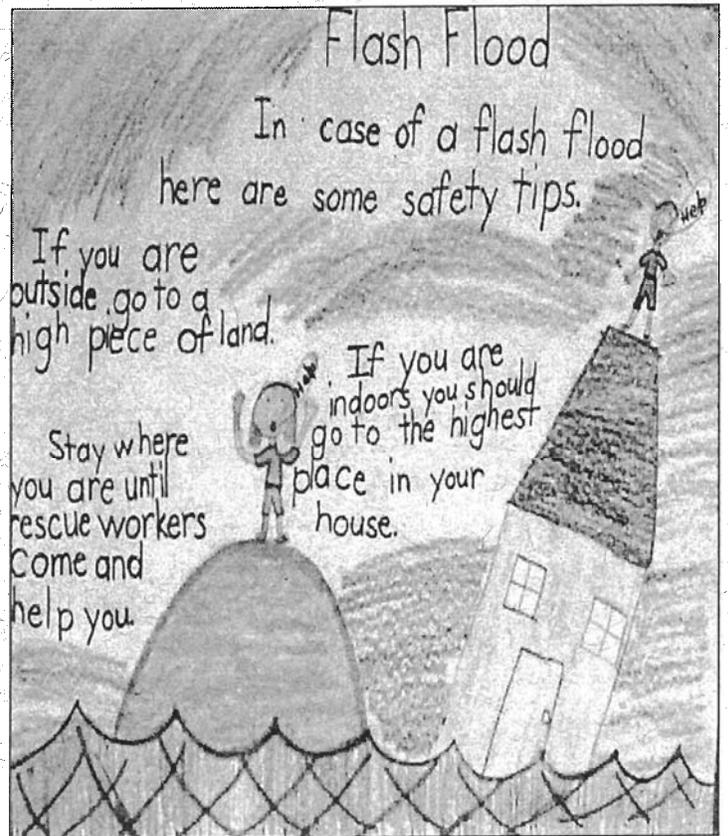
6<sup>th</sup> grader **Krista Haman** of Dayton from Salem Christian Academy in Clayton (**Montgomery County**)

In addition to their regional awards, these seven received letters from Governor Bob Taft and the committee, and a \$50 savings bond.

As the Overall State Winner, **Makenzie Davidson** also received a \$100 savings bond, shirts, vest, parka, cap and a weather radio along with a personal trophy. **Makenzie's** school will have the *traveling* trophy to showcase at her school for a year. This trophy is inscribed with the names of each years' Overall State Winner honoring their efforts to help us all be more aware and better prepared for severe weather.

If you would like to receive more information concerning severe weather safety, please contact your county emergency management agency or the local chapter of the Red Cross. For a copy of the educational materials developed in support of this awareness effort contact the Ohio Emergency Management Agency (OEMA) at (614) 799-3695 or download the information from OEMA's website at:

[www.state.oh.us/odps/division/ema/](http://www.state.oh.us/odps/division/ema/)



# Protecting Building Utilities and Ductwork from Flood Damage

*Editor's Note: By joining the Community Rating System (CRS), communities can reduce the premiums for all their community's flood insurance policies. The following is a reprint from a FEMA CRS handout dated 11/18/02.*

**Background:** A community must be fully compliant with the National Flood Insurance Program's regulations in order to obtain or keep its Community Rating System (CRS) classification. Sections 60.3b(4) and 60.3c(2) of the NFIP regulations (44 CFR Part 60) require communities to ensure that the lowest floor of any new residential building is elevated above the base flood elevation. These regulations can be found at: [www.access.gpo.gov/nara/cfr/waisidx\\_00/44cfr60\\_00.html](http://www.access.gpo.gov/nara/cfr/waisidx_00/44cfr60_00.html)

The freeboard element (FBR) in Activity 430 (Higher Regulatory Standards) of the CRS provides up to 300 points for requiring buildings to be protected to a level higher than the base flood elevation. Many model ordinances and many locally adopted ordinances have freeboard provisions. These are usually found in the ordinance as a "regulatory flood elevation," a "flood protection elevation," or a "base flood elevation plus (1) foot." It is called the "design flood elevation" in this paper.

A problem arises when local regulatory officials focus only on the lowest floor, and neglect other parts of their ordinances where there are additional provisions required by the NFIP regulations. Section 60.3a(3) (ii) and (iv) of the NFIP regulations require that buildings "(ii) be constructed with materials resistant to flood damage" and "be constructed with electrical, heating, ventilation, plumbing, and air conditioning equipment and other service facilities that are designed and/or located so as to prevent water from entering or accumulating within the components during conditions of flooding."

In short, protecting a building from

flood damage means more than elevating the lowest flood above the regulatory flood elevation. Flood insurance claims have shown that the Federal Emergency Management Agency (FEMA) has paid a lot of money for damage to air conditioners, furnaces, ductwork and insulation that were flooded, even though the building's lowest floor was high enough. In addition, mold, mildew and fungus accumulating in flood damaged air passageways often can lead to serious health issues for residents.

This is primarily a concern for buildings elevated a full story on foundation walls with a partially or fully enclosed area below the elevated floor or for buildings elevated on a crawlspace in A zones. However, buildings elevated on piles and columns must also have utilities and ductwork protected. In A Zones, utilities and equipment must be either elevated to or above the Base Flood Elevation or made watertight to the Base Flood Elevation so that the components are protected from flood damages. In V Zones, utilities and equipment must be elevated to or above the Base Flood Elevation. If not, then the building is not in compliance with the NFIP floodplain management regulations.

**What's required:** To receive full CRS credit for Freeboard (FRB), electrical, heating, ventilation, plumbing, and air conditioning equipment and other service facilities (including ductwork) must be elevated or waterproofed to the base flood elevation plus freeboard. To be fully compliant with the minimum requirements of the NFIP, this equipment and service facilities (including ductwork) must be elevated or waterproofed to the base flood elevation.

A community can receive 75% of the appropriate FRB credit if it requires the utility facilities (including ductwork) to be elevated (or appropriately waterproofed) to or above the base flood elevation, but not necessarily to

the freeboard level. If the utilities and ductwork are not elevated, flood-proofed, or otherwise protected to the base flood elevation, there is no credit for FRB. Four scoring scenarios are shown below. In the top two, if the ductwork is not watertight and made of flood-resistant material, the building is not compliant with the NFIP regulations.

**FEMA Guidance:** *Protecting Building Utilities from Flood Damage*, FEMA 348, reviews ways to protect utilities and ductwork. This is the text from page 3.1-14 on alternatives to elevating ductwork. It can be found on FEMA's website at [www.fema.gov/library/pbuffd.htm](http://www.fema.gov/library/pbuffd.htm)

## Component Protection

The NFIP does not recommend locating ductwork below the DFE (design flood elevation, *i.e.*, the base flood elevation plus freeboard) in any new or substantially improved structure located in an SFHA (Special Flood Hazard Area). There is no known cost-effective technique for designing air ducts to keep floodwater from entering or accumulating within the system components during inundation by floodwaters.

If ductwork must be installed below the DFE, it should be minimized as much as possible. The material used for the ducts must be impermeable and watertight, such as welded seamless ductwork or large diameter PVC pipe. Such material is very expensive but practical for cases where a short length of ductwork descends below the DFE.

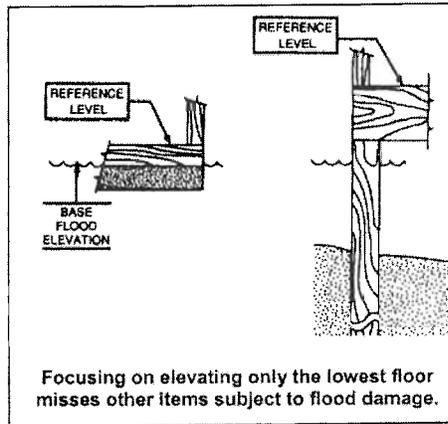
The water and fuel piping associated with HVAC systems must be properly protected from damage during flooding. PVC piping generally requires special consideration when used in floodprone areas. This type of pipe is more susceptible to impact breakage. In addition, the nature of the material sometimes fractures or shatters when exposed to the heaving and settling that a structure experien-

ces when withstanding floodwaters. If the lines are ruptured, it may result in contamination, leaking, or even fire. In General, copper and galvanized metal piping is better suited for use in floodprone areas.

*Note: Component protection for ductwork refers to continuous duct segments below the DFE which are watertight and terminate above the DFE. Duct segments with openings below the DFE or that terminate below the DFE are not permitted under the NFIP.*

What the community should do: The following steps are recommended to ensure that your community is fully compliant with the NFIP and receives the appropriate freeboard credit under the CRS:

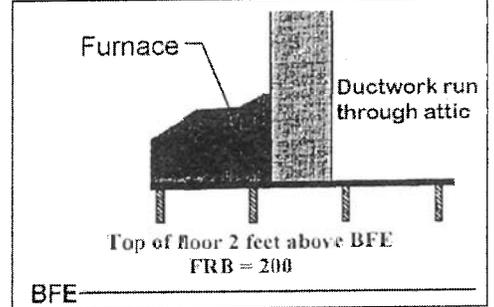
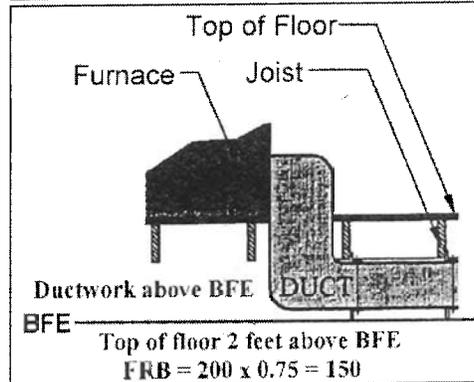
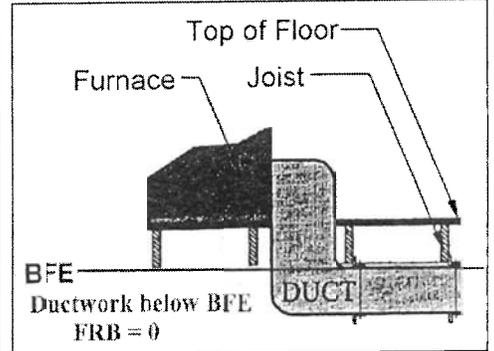
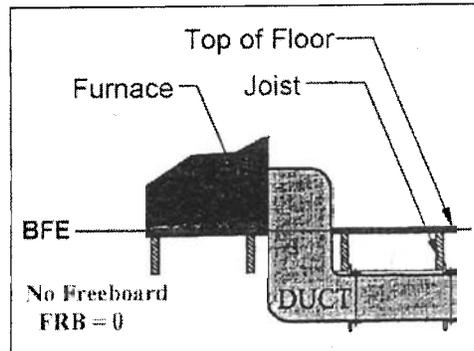
1. Review your ordinance and verify that you have clear legal authority to require elevation of ductwork and other utilities to or at the freeboard level. If in doubt, ask your community's legal counsel for a letter stating how the ordinance is to be interpreted.
2. Review your permit application and inspection procedures to determine the best way to ensure that the requirement is being met. This may necessitate procedural changes such as additional information on the permit application form, additional plans provided by the applicant, an addition to a field inspection checklist, and/or a photograph for the record at the time of the final inspection.
3. Discuss the matter with local builders and architects as necessary. Feel free to use excerpts from this handout.
4. Make sure the building plans clearly indicate that the building's utilities, ductwork, and machinery and equipment, such as furnaces, water heaters, heat pumps, air conditioners, and elevators and their associated equipment, will be properly elevated or that the components located below the Base Flood Elevation will be protected such that floodwater



is prevented from entering or accumulating within the system components (watertight) (allowed in A zones only) before issuing the permit.

5. Make sure that the community records show that utilities, ductwork, and machinery and equipment have been properly elevated or made watertight (A zones only) once construction has been completed. Elevation of these

- b) The community can use the finished construction Elevation Certificate to document compliance. The community can document compliance of utilities, ductwork, and machinery and equipment in Section G of the Elevation Certificate. The community can note in Section G that the bottom of these items, such as ductwork, is "X" feet above or below the lowest floor or the actual elevation of these items can be used. Or
- c) The finished construction Elevation Certificate can include the elevation of machinery and/or equipment such as furnaces, water heaters, heat pumps, air conditioners, and elevators in C.3.e. The Elevation Certificate requires that the surveyor provide the



items can be documented in the following ways:

- a) The community can document elevation of utilities, ductwork, and machinery and equipment on the community inspection records. The final inspection records can note that the bottom of the items,

elevation of only one machinery and equipment item which has the lowest elevation. If there is more than one machinery and/or equipment item, make sure the surveyor documents the elevation of all machinery and equipment and lists the type of machinery and equipment in Section D when the Elevation Certificate is being used

to document compliance. Ductwork is not the type of machinery and equipment that the surveyor must capture in C.3.e. of the Elevation Certificate. However, the community can make sure the surveyor documents the elevation of the bottom of the ductwork in Section D of the Elevation Certificate or the community can document the elevation of ductwork in

the community's inspection records or in Section G of the Elevation Certificate.

*Note: Where component protection is used for utilities, ductwork, and machinery and equipment, the community should have documentation on the plans and in the inspection records that indicate that these items have been designed and constructed so as to prevent floodwater from entering or accumulating within the components*

during conditions of flooding.

6. Advise your ISO/CRS Specialist what your community will do. Will you need to change procedures to verify compliance? Will you prefer to forego CRS credit and not require ductwork to be elevated above the freeboard level? What will the ISO/CRS Specialist need from you at your annual re-certification?

## IS YOUR FLOODPLAIN MANAGER CERTIFIED?

### A MESSAGE FROM THE ASFPM

*What follows is an announcement that will help your community to make the most of YOUR participation in the National Flood Insurance Program...*

In the early 1990's, Mount Pleasant, South Carolina, was facing the possibility of being placed on probation (by FEMA) for failing to comply with their obligations under the National Flood Insurance Program (NFIP). City staff attended courses sponsored by the State and FEMA and became knowledgeable about floodplain management and their community's responsibilities under the NFIP. Mount Pleasant is now not only in good standing with the NFIP, but it is an active participant in the Community Rating System that has reduced the flood insurance premiums in the Town because of its exemplary floodplain management program.

Mount Pleasant is only one of hundreds of cases that have demonstrated how well trained staff pays off. As a result, floodplain development is better managed, flood losses are reduced, property owners are better protected, there is compliance with State and Federal programs, and residents enjoy lower insurance premiums.

How do you know if your staff is adequately prepared for the job? Short of an assessment visit by FEMA or your state's NFIP coordinating agency, the best way to know they are competent is to encourage them to become Certified Floodplain Managers (CFMs®). Only with adequate training and education to gain knowledge in flood mapping, the requirements of the NFIP, building construction in flood hazard areas, administering floodplain management regulations, and related topics, can a person pass the rigorous certification

exam.

In order to maintain their certification, they must attend classes, workshops or home study courses to keep CFMs® up to date on new approaches, standards and programs for their community.

The Certified Floodplain Manager Program was established by the Association of State Floodplain Managers (ASFPM) in 1999. The emphasis of the Program is on knowing the fundamentals of flood mapping, managing floodplain development, national and state standards, and how to apply them to a locally administered program. CFMs® have been defined as people "who know their stuff." To become a CFM®, a person should study the basics of floodplain management. These are found in courses conducted by FEMA the states and ASFPM. The best single reference is the course material used for FEMA's course *Managing Floodplain Development Through the National Flood Insurance Program* (FEMA IS-9), which can be downloaded through a link on the ASFPM website [www.floods.org](http://www.floods.org). 

When a person is ready, he or she applies to take the exam, which is offered many times throughout the year at locations around the country, often in conjunction with a state training program or conference which prepares the person for the exam. The exam is three hours long and covers the gamut of topics that a local floodplain administrator needs to know.

Application forms are available on the ASFPM website [www.floods.org](http://www.floods.org). 

In order for a Certified Floodplain Manager to continue to effectively serve his or her community, continuing education is necessary. Credits for this continuing

education can be obtained by attending training, workshops/technical conferences or by completing graded home study courses. CECs can also be obtained through web based training courses offered by our Partner, RedVector.com® ASFPM Members receive a discount when they link to RedVector.com® through the ASFPM website and use the ASFPM reference code. CFMs® must provide verification for completing continuing education during each two year renewal period, thus demonstrating their continuing competency in handling their community's floodplain program. Today the CFM® Program boasts over 1400 certified professionals nationwide.

Employers of these CFMs® are now reaping the rewards of having staff that "know their stuff". Some communities have received additional credit under the NFIP Community Rating System. Other communities report they have less trouble with the construction industry because the staff is able to clearly explain the process and requirements of the local floodplain ordinance.

The CFM® Program has become an integral part of floodplain management around the country. In the state of New Mexico, it is a state law requirement that a CFM® administer a community's floodplain ordinance, which are adopted to meet community obligations under the NFIP. In Arkansas, state law now requires local floodplain administrators to obtain continuing education. In Harris County (Houston Area in Texas), CFMs® on staff at the Flood Control District shifted into high gear when Tropical Storm Allison hit in



the summer of 2001 (see related article page 3). That storm resulted in over \$5 billion in damages and over 46,000 homes flooded. In cooperation with these CFMs®, the District initiated a "fast track" acquisition and relocation program for their 35 communities. For more information on the Certified Floodplain Manager Program, please contact the Association of State

Floodplain Managers at the website, phone number or address below.

For more information contact Anita Larson at:



Certified Floodplain Manager Program  
 Association of State Floodplain Managers  
 2809 Fish Hatchery Road Madison, WI 53713  
 608-274-0123 fax: 608-274-0696  
 email: [memberhelp@floods.org](mailto:memberhelp@floods.org)  
 website: [www.floods.org](http://www.floods.org)



## 2003 Ohio Floodplain Management Association Elections

By ALICIA A. SILVERIO, CFM, ENVIRONMENTAL SPECIALIST, DIVISION OF WATER

The Ohio Floodplain Management Association (OFMA) held the 2003 Executive Board election at *Floodplain Management in Ohio – Statewide Conference 2003* (see related article page 5). The venue for this year's election was changed from the Water Management Association of Ohio's (WMAO) Annual Fall Conference to the Statewide Floodplain Management Conference to accommodate a larger presence of OFMA members. The 2003 OFMA Executive Board members are:

Ray Sebastian, CBO – Chairman (Clermont County)  
 Alicia Silverio, CFM – Vice Chairman (ODNR)  
 Mary Sampsel, P.E. – Secretary (Union County)

Miles Hebert, P.E., CFM – Treasurer (EMH&T)  
 Cynthia Crecelius, CFM – ODNR Representative (ODNR)  
 Chad Berginnis, CFM – Member At Large (ODNR)  
 Joseph Black, CFM – Member At Large (Lawrence County)  
 Jerry Brems, CFM – Member At Large (Licking County)  
 Doug Cade, P.E., P.S. – Member At Large (E.L. Robinson Engineering)  
 Kohei Ishikawa – Member At Large (Portage County)  
 Jim Latchaw – Member At Large (FMSM Engineers)  
 Kari Mackenbach – Member At Large (EMH&T)  
 Paul Plummer – Member At Large  
 Gary Ziegler – Member At Large (Findlay)

### OFMA Committees

Interested in becoming active in OFMA? Then take this opportunity to become involved in an OFMA Committee. OFMA has developed committees to carry out the projects and interests of the organization. OFMA Committees include: **Strategic Planning, Conference Planning, Financial, Legislative, and Scholarship/Awards**. Committee participation is a great way to network with others interested and involved in floodplain management and as well as further the goals of OFMA.

To become involved in an OFMA Committee, please contact Mary Sampsel (OFMA Secretary) at 937-645-3018.



## Flood Insurance Seminars Held



By CHRISTOPHER M. THOMS, CFM, ENVIRONMENTAL SPECIALIST, DIVISION OF WATER

Do you know how many of your citizens were protected by flood insurance this past year? How many citizens suffered uninsured flood losses? And how many will not be insured this year?

With each flood, we hear the reports of those who received flood damage who—before the flood—were told they could not get flood insurance. Often they report being told this by the person whom they very reasonably would expect to know, their insurance agent. Yet, how many insurance agents are uncertain of the rules and regulations concerning flood insurance? How many are unsure of exactly how

to write a federal flood insurance policy? Are they aware of their Errors and Omissions exposure? If not, do you know where to they can go for all the information needed? Should you care?

You should. Promoting opportunities for insurance agents to learn more about flood insurance promotes better floodplain management and can decrease the economic devastation of flooding (see related article page 1).

Recently, the Ohio FAIR Plan Underwriting Association was host to Rich Slevin, Regional Marketing Manager for the National Flood Insurance Program (NFIP) as he

conducted a series of flood insurance seminars in conjunction with the association's own FAIR Plan workshops and the sessions offer 4 continuing education credits each. These sessions are sponsored by FEMA, the Federal Insurance & Mitigation Administration, the NFIP, the Independent Insurance Agents of Ohio, and the Ohio Fair Plan Underwriting Association.

September sessions were offered on the 23<sup>rd</sup> in Zanesville, the 24<sup>th</sup> in Chillicothe, and the 25<sup>th</sup> in Miamisburg. Registration Fees were \$40 for either session. Rich was impressed with the number of those who signed up to attend the Ohio-workshops.

Offering content for both novice and expert, Rich's seminars provide a beneficial understanding of how to

effectively interact with the NFIP and its products helping attendees to:

- ◆ Discover how the NFIP works
- ◆ Explore the NFIP's coverage forms
- ◆ Examine FEMA's Elevation Certificate
- ◆ Review ICC coverage and its new limit
- ◆ Discuss the "Preferred Risk Policy"

- ◆ Review 2003 program changes and
- ◆ Learn how to order flood maps, policy supplies and marketing material

The FAIR Plan sessions cover:

- ◆ Genesis of FAIR Plans
- ◆ Ohio FAIR Plan History
- ◆ Doing business with the Ohio

#### FAIR Plan:

- ◆ Underwriting Standards
- ◆ Inspection Process
- ◆ Product Offerings
- ◆ Business Processing
- ◆ Rating
- ◆ FAIR Plan Enhancements

To learn when and where sessions are and to register online visit: [www.ohiobigi.com](http://www.ohiobigi.com) or call 800-282-4424.



## ROLL CALL

plain Geographic Information Management System (FPGIMS). We miss Darlene and her skills but wish her well in her new position.

GIS Coordinator, **Ken Pendley** (below)—an 11-year veteran of the Division of Water—will be providing partial-support for the FPGIMS.

Budget constraints have delayed the replacement of a full-time GIS staff



By **CHRISTOPHER M. THOMS**, CFM, ENVIRONMENTAL SPECIALIST, DIVISION OF WATER

In the last issue of *The Antediluvian* (Volume X-1) GIMS Specialist, **Darlene Magold** (above), introduced Tim Beck (the recipient of a Ohio River Basin Commission Scholarship). Now, Darlene is a subject of this issue's article, for she has left ODNR to take a new position with Jobs Henderson and Associates, Inc where she is starting a GIS division as its Coordinator while also obtaining her masters in GIS from *The OSU*. At ODNR, she was instrumental in developing our Flood-



position. A variety of DOW staff are lending their expertise and service in support of the FPGIMS.

Those who attended this year's floodplain management conference also got to meet the Division of Water's new chief, **Richard (Dick) Bartz** (above) Dick has served in the division since July 1974 and has been the division's assistant chief since 1994. His extensive background with the division and his thorough understanding of complex water management issues will continue to serve him well as chief.

## Floodplain Management Training Available

For the latest information about upcoming Lender & Agent Seminars visit: [www.fema.gov/nfip/wshops.htm](http://www.fema.gov/nfip/wshops.htm) or call Rich Slevin, Regional Marketing Manager for the NFIP at (630) 577-1407. FEMA offers on-campus & correspondence courses through the Emergency Management Institute (EMI) in Emmitsburg, Maryland. For information or a course catalog describing EMI's Floodplain Management Courses visit: [www.training.fema.gov/](http://www.training.fema.gov/) or call (800) 238-3358.



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