

# The Antediluvian

OHIO'S FLOODPLAIN MANAGEMENT NEWSLETTER

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## Is Ohio Ready for a Flood?

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The title of this article was the topic of a congressional field hearing, held just before the statewide conference. I was invited to provide testimony from the perspective of Ohio's National Flood Insurance Program (NFIP) State Coordinator. Since that hearing, the nation has witnessed the wrath of Hurricane Katrina and the landfall of Rita. The media is providing daily accounts of the impact and problems associated with these huge natural disasters and many are asking, "How can I help?" As a local floodplain manager, you can help by looking closer to home than Louisiana, Mississippi or Texas!

Hurricanes are not listed in the natural hazard threats that Ohio should plan or prepare for, but we have seen in 2004 and 2005 that as the coastal hurricanes move inland - Ohio can be impacted. Although, Ohio did not have weather events related to Katrina, the state has been impacted in a new way. Many of our professional resources related to rescue, response and NFIP support have and are being requested through the mutual aid compact; the Ohio Emergency Management Agency is assisting with mass care and housing needs for Katrina victims; and approximately 3,000 displaced people are calling Ohio communities home, at least temporarily.

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## Katrina and Rita Renew - Floodplain Management Concern

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There is precious little satisfaction in seeing a dire prediction come true, especially when the cost is as high as that paid by everyone who found themselves in the broad swaths of destruction cut by Hurricanes Katrina and Rita. Still, floodplain managers cannot have been surprised at the varied and intense impacts brought about by the storms, and can only move forward and build off this tragedy by fostering dialog on ways to prevent reoccurrence.

These multiple and massive disasters again have brought into sharp focus many serious questions about our use and management of land and water and how we deal with the impacts when the inevitable disruptions to that management take place. How do we provide some relief and support to those affected by the damage while still maintaining the integrity of public and private programs and policies? To the extent that less-than-optimal floodplain management approaches were in place before the hurricane, how can they now be remedied?

What do these events teach us about the approaches to floodplain management that we previously thought were effective?

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**MISSION STATEMENT:** The Mission of the Floodplain Management Program is to provide leadership to local governments, state agencies, and interested parties toward cooperative management of Ohio's floodplains to support the reduction of flood damage and the recognition of the floodplain's natural benefit. This mission will be accomplished through technical assistance, public awareness, education, and development/protection standards.

(Continued from page 1) **Is Ohio Ready for a Flood?**

Based upon recent media, you might assume that the Federal Emergency Management Agency (FEMA) and the NFIP are not effective. It is incumbent upon all of us “in the business” to understand and use the NFIP effectively and know how to work well with FEMA before, during, and after the disaster! The NFIP is a well-conceived mitigation program that can prevent future damage and correct existing at-risk development in flood hazard areas. Reviewing proposed development and only issuing permits for activities that are compliant with your flood protection standards, prevents increased future flood risk. Doing substantial damage determinations and reconstructing damaged buildings in compliance with flood protection standards will help to eliminate some of the current flood risk. FEMA does not control the development review or reconstruction decisions of your community – you do!

The focus of the congressional hearing was to determine if the NFIP is helping Ohio to be better prepared for—and more capable of recovering from—a flood disaster. My testimony was based upon the knowledge of ODNR, Division of Water’s involvement as the State Coordinating Office of the NFIP for the past thirty years. I discussed the roles of the State and local participating communities; NFIP changes that have made the program more effective; FEMA’s current administrative structure and how that affects the implementation of the NFIP; flood map modernization; and the NFIP as a mitigation program. My overall conclusion is that Ohio is better-prepared and more capable to recover from flood disasters because of approximately thirty years worth of partnership with FEMA in the NFIP. The full testimony is available on-line at: <http://finAncialservices.house.gov/hearings.asp?formmode=detail&hearing=411&Comm=5>.

In light of the recent hurricanes, I wondered how those of you in the local floodplain manager roles would respond to, *Is Your Community Ready for a Flood?* Help yourself and your community by considering the following questions to ensure that we learn from recent mistakes:

**What is at risk in your community’s flood hazard areas?**

To answer this question you should have the current copy of your Flood Insurance Rate Map(s) and Flood Insurance Study easily accessible. In August 2004, ODNR, Division of Water provided every local floodplain manager with a CD containing an inventory of the structures located within the identified flood hazard areas of your community. While some communities may have since received new flood insurance rate maps, this information will at least provide a starting point for identifying and tracking the risk of buildings in your flood hazard areas. Become familiar with this information BEFORE the flood. Populate the database so that you have names, addresses, and associated market value for each structure. If you have questions about the

structure inventory or its use contact: Tim Beck, CFM, GIS Specialist, ODNR, Division of Water at 614-265-6722 or e-mail at [Tim.Beck@dnr.state.oh.us](mailto:Tim.Beck@dnr.state.oh.us).

**Are you familiar with the priorities and strategies that your community will use to reduce future flood risk?**

The Disaster Mitigation Act of 2000 established a prerequisite of FEMA-approved hazard mitigation plans for all communities wishing to remain eligible for federal mitigation project funds. Do you know if your community has an approved plan? In most cases your county emergency management director should be able to provide a copy and update you on the status of local plans. For a list of county EMA directors visit: <http://www.ema.ohio.gov/county.htm>.

**Do you have good working relations with your chief elected officials and emergency management personnel?**

The Katrina response has shown that it is critical for everyone at the local level to know each other and clarify response roles. In most cases, the federal and state level agencies can only respond to requests from the local government when their capabilities have been exceeded. Know what you need in terms of assistance and resources by exercising your response plans. For example, if you have 500 structures in the flood hazard areas and are a part-time floodplain manager, with no additional community resources, how long will it take you to complete substantial damage determinations and issue permits for repair? Is that amount of time reasonable given the community goals for a recovery schedule? Will that amount of time allow you to take advantage of post-disaster recovery mitigation programs and assistance? Have you educated your elected officials to understand that floodplain management and the enforcement of the NFIP requirements is a basic health and safety issue for your community?

**Do you and your emergency management personnel have a plan for sharing the early damage assessment information?**

They can help you understand where the most heavily damaged areas are and what type of numbers you can expect. You can help them by using the NFIP regulations to help reduce future flood risk. Also, you can identify owners who might be interested in the longer-term mitigation projects to acquire, relocate, and retrofit structures that are repeatedly or substantially damaged by flooding.

**Are your private sector insurance partners knowledgeable and ready to serve their NFIP clients?**

Are property owners in flood hazard areas informed about flood insurance? Do your local insurance agents know and understand the NFIP products and claims process. The NFIP is a federal, state, local, and private sector partnership. All of us have roles and responsibilities and to manage the crisis everyone has to be informed and ready

to do their piece. If you have agents who need assistance refer them to [www.floodsmart.gov](http://www.floodsmart.gov). Our newsletter frequently identifies locations and dates of on-going agent and lender training to make sure that everyone is current and competent when it comes to flood insurance [See *Floodplain Management Training Available on pg 19*].

**Do you understand how the property owner can use Increased Cost of Compliance funding to assist in bringing a substantially or repetitively damaged property into compliance with the NFIP flood damage prevention regulations as part of the recovery effort?**

To learn more about the Increased Cost of Compliance coverage available to property owners and how you can help them use this resource, visit this website: <http://www.fema.gov/nfip/icc.shtm>.

**Do you know what your role is when the water rises and as it recedes?**

Basically, as the flooding occurs you may have an assistance role in helping your community's emergency management personnel understand the impact and scope of flooding. You will then need to prepare for the damage inspection and permitting duties that will come quickly after the water recedes. You may also need to focus on long-term recovery solutions such as, mitigation projects that will result in acquisitions, elevations or other retrofitting actions. ODNR, Division of Water has a fact sheet that summarizes your basic duties immediately after the flood event. Please review it and contact us if you feel you need any additional training or have questions. (Fact sheet link: [http://www.dnr.state.oh.us/water/pubs/fs\\_div/ftsht40.htm](http://www.dnr.state.oh.us/water/pubs/fs_div/ftsht40.htm).)

**Are you familiar with FEMA's Residential Substantial Damage Estimator (RSDE)?**

*Guidance on Estimating Substantial Damage* is provided in FEMA publication 311. The Guidance Kit includes a printed manual and two computer disks. To be effective in your post-disaster efforts you should prepare your files and information on individual structures in the flood hazard area to save time and ensure the RSDE will be used efficiently. To obtain any FEMA publication visit: [www.fema.gov](http://www.fema.gov). ODNR, Division of Water also has available guidance documents and training to support the substantial damage determination process. We can be reached at 614-265-6750 or <http://www.dnr.state.oh.us/water/floodpln/default.htm>.

**Did you know that there are nearly 80 Ohio Building Officials Association (OBOA) members trained for disaster inspection support?**

Following disasters, the federal government requires damage assessment to verify that the local and state capabilities to respond and recover have been exceeded. The degree of damage also provides your community with an opportunity to address existing at-risk structures through enforcement of local flood protection criteria. OBOA members have expertise and knowledge that will expedite the inspections with an existing post-disaster inspection process.

The State of Ohio has an Intrastate Mutual Aid Compact (IMAC) addressing liability and legality of building officials responding outside their normal jurisdictions. OBOA has developed standard service and products to support basic damage assessment for health and safety, substantial damage determinations for NFIP compliance, and plans to develop case-by-case evaluation ability for mitigation recommendations. Also, local communities need to complete a *Memorandum of Understanding* acknowledging their role for permitting and enforcement of the flood protection regulations as part of the recovery and repair process. **Have you reviewed the community MOU and discussed it with your community chief elected official?** A blank model MOU is included with this newsletter. If you have questions, contact ODNR, Division of Water at 614-265-6754.

**Do you understand the NFIP and how it should work for your community?**

We all have more on our plate than we should; however, recent events in the Gulf Coast region show that no one is likely to accept that you were too busy to know your job. The following link will provide you with access to a very comprehensive desk reference (*FEMA NFIP Study Guide and Desk Reference for Local Floodplain Managers*) that should answer just about any question related to the NFIP: <http://www.fema.gov/nfip/nfipsg.shtm>. Keep the link handy and remember that ODNR's Division of Water is also available for technical assistance on demand. Your preparation now can yield huge benefits for your community when a disaster strikes.

**If your community could make the choice, would you continue building in the flood hazard area?**

Please be aware that meeting the minimum NFIP criteria will not eliminate or even reduce future flooding. Implementation of federal minimum criteria including: floodway and fringe concepts, the protection only to the 1% annual chance of flood, and the continued development of hazard areas do not come without consequence.

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**Ohio Statewide Floodplain Management Conference 2006**

We are beginning to plan for the 2006 Ohio Statewide Floodplain Management Conference and would love to have your participation on the Conference Planning Committee. Planning meetings will begin in January, so it's not too late to get involved. Contact Alicia Silverio at 614-265-1006 or [alicia.silverio@dnr.state.oh.us](mailto:alicia.silverio@dnr.state.oh.us) for more information.

To acquire 2006 Ohio Statewide Floodplain Management Conference information, such as date, location, abstract submittal information, or agenda, check ODNR's website at <http://www.dnr.state.oh.us/water/floodpln/>.

(Continued from page 3) **Is Ohio Ready for a Flood?**

The good news is that your community has the authority to adopt and enforce higher standards that can reduce future flooding! [See related article on pg. 10]

When New Orleans was established in 1718, the location made strategic and economic sense because of the importance of the Mississippi River. Likewise, the location of many communities made sense when they were founded. As the importance of these reasons change, we need to ask ourselves if some uses are still worth the risk associated with rebuilding. If so, how do we redevelop to avoid as much damage as possible? Your community's mitigation plan should include economic and land-use policies that capitalize on a "second chance" scenario that might allow for restored or preserved floodplains. To broaden your perspective on how to better correlate the need for a *built environment*, with the risk for buildings in the flood hazard areas, visit the Association of State Floodplain Management Association on-line at: [www.floods.org](http://www.floods.org).

Two excellent resources for further reading are *Disasters by Design—A Reassessment of Natural Hazards in the United States*, by Dennis S. Mileti, and *Cooperating with Nature—Confronting Natural Hazards with Land-Use Plan-*

*ning for Sustainable Communities*, edited by Raymond J. Burby. If you had an opportunity to plan your community in a safer, more sustainable way, what would the social and political decision makers need to know before they would approve the change? This type of information can be part of your community's mitigation strategy and plan.

Recently, as I fall asleep each night, the question "*Is Ohio Ready for a Flood?*" haunts my mind. A confident "yes" is not what I hear; rather, there are many opportunities for improving our readiness. In my tenure with the ODNR Floodplain Management Program, great strides have been made to advance Ohio's preparedness for large-scale disaster response. However, if a *Katrina*-like storm hit Ohio today, there would no doubt be problems and impacts that could be avoided with corrective actions. Let's all take a moment to self-assess and acknowledge that floods will occur in Ohio. Then we can address the consequences. If you have questions or concerns about how to improve your community's flood response planning and disaster response capability, please call ODNR, Division of Water, Floodplain Management Program at 614-265-6750 or e-mail us at [water@dnr.state.oh.us](mailto:water@dnr.state.oh.us). 

(Continued from page 1) **Katrina and Rita Renew - Floodplain Management Concern**

Simultaneously, of course, this focus is providing opportunities to educate and reeducate the public and policymakers about ways in which the situation can be remedied and the impacts of future events minimized. As always, floodplain managers support sensible rebuilding of damaged areas, mitigation of the flood hazard in every way possible, smart management techniques, and the protection and restoration of the natural resources (and natural protection) that flood-prone lands offer.

Below are brief descriptions of just a few of the issues now in the spotlight.

**To Rebuild or Not?** There is little doubt that the Gulf Coast, including New Orleans, needs to be rebuilt. But replacing the infrastructure, housing, and people in their previous at-risk situation is unconscionable. Careful thought needs to go into how to rebuild in a sustainable way, so that risks from future flooding, hurricanes, high winds, and storm surge are reduced. The ASFPM has a short position paper on this idea, which was presented at a press conference early in September. It explains what the key priorities will be in terms of mitigation measures, funding, seizing upon this event to mitigate a large number of repetitive flood problems, and reviewing existing standards to see if they are sufficient. The idea should be to reconstruct without creating adverse impacts now or in the future. (See the ASFPM paper and other sources at <http://www.floods.org>.)

**The Status of FEMA**—Many opinions have been voiced in the press about the performance of FEMA and the Department of Homeland Security after Katrina and Rita, and inevitably the question is coming up whether natural disaster preparedness, response, and mitigation would be more effectively handled by a smaller, more independent entity, such as FEMA was in previous years. The ASFPM has already vigorously expressed its position that the nation cannot afford to diminish the effort it can put forth to address perennial disasters like flooding and hurricanes, even though preparedness for possible terrorist attack is important as well. The ASFPM's letter to Speaker of the House Dennis Hastert can be read on the website at <http://www.floods.org>. Hearings will be held in Congress on the matter of whether FEMA's status ought to be altered.

**Coastal Land Loss**—The natural defense to hurricane forces provided by the coastal wetlands, marshes, and barrier islands has been dwindling for decades. Louisiana, in particular, can document astonishing rates of land loss. And there are many other reasons for ecosystem preservation and restoration across the Gulf Coast. Katrina and Rita brought much needed attention to this problem, and reminded us of the delicate balance that must be respected when we use such sensitive areas for human activity. On the table there is already the Louisiana Coastal Area Ecosystem Restoration Plan, finalized only a year ago, in which state, federal, and private entities outline steps that

must be taken if this valuable area is to be protected and restored. At its fall meeting the project's task force will take a look at what changes in approach may be needed, if any, in the wake of the two hurricanes. (See [http://data.lca.gov/Ivan6/main/main\\_exec\\_sum\\_toc.pdf](http://data.lca.gov/Ivan6/main/main_exec_sum_toc.pdf).)

On another note, a class action lawsuit has been filed against a collection of oil companies claiming that their drilling and pipeline operations, which form a network all across the delta plain both onshore and off, destroyed coastal marshes that, as recently as the 1930, provided a 100-mile buffer between the Gulf of Mexico waters and New Orleans and other communities.

**Coastal Development**—Both Katrina and Rita perfectly demonstrated the size of the population that now resides in coastal areas, and the difficulties that that situation presents especially in terms of evacuation and in the risks to which their homes and businesses are subject. At numerous specific locations, there is already evidence that the standards to which coastal zone buildings were constructed (in both V Zones and coastal A Zones) were insufficient for the combination of natural forces attendant during a severe hurricane (scour, wind forces, debris impacts). Careful investigations and evaluation need to be done to determine what additional, stronger measures need to be implemented to make these homes and businesses—if we insist on having them there—more disaster-resistant. Do the zones need to be refined? Are the construction provisions insufficient? And what are the implications as climate changes, sea level rises, and the land subsides?

**Flood Maps**—As always after a flood, the accuracy of the flood maps is under scrutiny. Observations along the Mississippi Gulf Coast, for example, revealed that in many places the water reached far above the mapped base flood elevation. FEMA is producing “high water mark” maps that perhaps would be a better reference for recovery and rebuilding.

At the least these risk areas need to be shown on the maps to give people information about what happened during the 2005 hurricanes.

**Levees**—The powerful depiction—televised nationwide—of what happens when a levee fails has alerted more people to the risks inherent in such flood protection approaches.

The idea that there is still some risk for people who live and work behind levees (residual risk) is difficult to reconcile with our society's desire for complete safety and our tendency to trust technological fixes. But those images were powerful and should help convey the real drawbacks of relying completely on levees and the benefits—indeed, necessity—of taking additional mitigation steps (such as purchasing flood insurance) even when a levee is in place.

Again the ASFPM is calling for a national program to ensure the safety of levees, including stricter design and construction standards and certification procedures. In addition, buildings behind levees should be constructed (elevated) to provide some level of protection and should be required to carry flood insurance.

**Flood Insurance**—The ASFPM has already participated (represented by Rebecca Quinn, Legislative Officer) in a forum hosted by the Center on Federal Financial Institutions (COFFI) that revisited, in light of Katrina, the policy of providing federally backed flood insurance (see <http://www.coffi.org>). The ASFPM reminded the panel and listeners that the 35-year history of the NFIP, its land use provisions, and its record of repayment to the Treasury of funds used to pay claims in catastrophic years can only be viewed as a success. On other fronts, suggestions have been made to make flood insurance available now to those who were uninsured at the time of the hurricanes—to provide some sort of retroactive coverage—an idea opposed by both FEMA and the ASFPM, because of the threat to the integrity of the NFIP operations, and the disincentive it would provide to everyone else for the purchase and maintenance of flood insurance. Any relief for those property owners needs to come from a source other than the National Flood Insurance Fund, which is made up of the policy premiums paid by those who had the foresight to insure themselves.

The ASFPM has been actively engaged in all of these issues. Many requests for information have been received, along with invitations to testify at hearings, participate in workshops, and in other ways provide support and expertise from the floodplain management perspective. The ASFPM's website has received many thousands of hits more than usual since the hurricanes struck, and new material is being added there every day. At a press conference September 9 the ASFPM was one of several expert groups who presented important information to be considered as recovery and rebuilding proceeds. [See the ASFPM's *White Paper* at <http://www.floods.org>] The ASFPM co-hosted, with the Coastal States Organization and the Association of State Wetland Managers, a meeting called “Opportunities for Rebuilding after Hurricane Katrina,” and focusing on how to minimize future damage and suffering by restoring wetlands and broader ecosystems. States and communities affected by the hurricanes that are in need of supplemental expertise are being assisted by the ASFPM in locating appropriate personnel from other locales. This effort is being coordinated through the Emergency Management Assistance Compact and FEMA.

These are only a few of the activities and issues that will concern us all in the months and years to come. Many more will surface and innumerable details will need resolution as we move toward lessening future impacts of similar, inevitable storms.



## Risky Behavior

BY DR. JACQUELINE MESZAROS  
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*Editor's Note: Appearing in the 2005 edition of FEMA's newsletter, **Watermark**, this article is based on the keynote speech that Dr. Meszaros gave at the 2004 National Flood Conference held in Seattle, Washington, May 2004. It is reprinted with permission.*

Good morning. I'm pleased to have this opportunity to talk with you about my field, Behavioral Decision Theory, because it is an exciting area for research and a powerful tool for understanding the real world. However, I should probably start with the normal disclaimer: I am an academic so I'm going to tell you some stuff that you already know, but I'm going to dress it up in some theory and jargon. In this case, the theory and jargon of behavioral decision research. My aim is that, after I've done all this, you will better understand what you already know and can perhaps become more effective when working with your constituencies. Or at least, less baffled.

The main thing you already know is: people sometimes seem pretty irrational when it comes to decisions about preparing for certain natural hazards. In some instances, they simply are imprudent. They refuse to buy flood insurance no matter how cheap you make it; they build their homes as close to a rip tide as they can possibly get; or they won't so much as strap their water tanks or tall bookcases when they live in earthquake country. In other situations, they avoid risks at great cost. They buy flight insurance at insane prices (actuarially speaking); they refuse to bring their mail into their homes from fear of bioterror attack; or they drive from New York to Florida (increasing their chances of injury) in order to avoid the risk of a terrorist attack on a plane.

Behavioral decision theorists begin our studies of these kinds of issues by laying out what "rational" means, using an economic definition. Economically, a risk consists of a probability that an event will happen and the outcomes associated with that event. When you multiply the probability by the outcome, you get the "expected value" of the risk. For example, the expected value of a lottery ticket is the probability of winning times the payout. The expected value of a flood is the probability of a flood times the losses it would cause. If that expected value is more than the cost of insurance, it is rational to buy the insurance. But we see over and over, in the realm of low-probability/high-consequence risks like flood and earthquake, people refuse to make investments that are not only economically rational, but, as in the case of some flood insurance, heavily subsidized. As flood professionals, you should find it interesting that one of the first large scale, behavioral economic



studies ever conducted was a flood insurance study. In 1977, Howard Kunreuther and 15 others from around the country, including a number of folks at FEMA, looked at situations in which people who were offered heavily subsidized insurance against floods refused to take advantage of it. Using the economic framework I described previously, which is based on probabilities, losses, and costs for protection, this study identified that people were inaccurate in their estimates of potential losses; they had an inaccurate understanding of what insurance would cover; and they were inaccurate in their understanding of how much insurance coverage would cost.

In some ways, this study was path-breaking because it got everyone's attention, including the economic community's. In another way, it was quite limited because it looked only at estimated probabilities, losses, and costs. Having looked at this work, you might draw the inference that all you have to do is to get people better estimates of what the probability of a loss is and of what insurance coverage is going to cost them, and the problem will be solved. But, of course, you know that this isn't true; it is only one step. I'd like to share some of what's developed since that path-breaking 1977 study. The theories that have come along will help you better understand why your constituents seem so irrational, and, therefore, how better to reach them.

Perhaps the most powerful insights in behavioral economics come from "Prospect Theory," which won Daniel Kahneman the Nobel Prize in Economics in 2002. In part, Prospect Theory says that there is a total switch in the way people behave when they consider risks associated with gains versus risks associated with losses. We tend to be risk averse in gains; risk seeking in losses.

Test yourself. Are you risk averse in gains? If I offered you the choice between \$10,000 right now or a 50 percent

probability of \$22,000 to be collected in the future, which would you want? If you take the sure thing of \$10,000 right now, then you are risk averse. Do you want to know just how risk averse you are? Ask yourself: How much more than \$22,000 would it take for you to prefer the gamble over the sure thing?

Now, are you risk seeking in losses? If I give you a choice between losing \$2,400 for sure or a 50 percent chance of losing \$5,000, which of those do you prefer? Most of you would prefer to live with the risk. How risk averse are you? How much more would you be willing to gamble in order to avoid giving up that \$2,400?

Let's apply this "sure thing" principle to flood insurance. If people don't have flood insurance, the very first dollar they are asked to pay for such insurance may feel to them like a loss. In this situation, we would not be surprised to find them to be risk seeking. Like most of you in the hypothetical example above, they'd rather live with a probabilistic loss of a flood than to take the certain loss of premium payments. At some point, the probability or size of loss may cause them to prefer the sure loss to the probabilistic one, but in the real world we can't expect that to happen at the actuarially fair point. It happens at a point that is determined by individuals' subjective judgments and risk tastes.

Economists usually assume that only the expected value of risks matters, not the type of risk or the context in which it occurs. But Prospect Theory research has already shown that all risks are not the same because people treat risks in the realm of gains differently from risks in the realm of losses. Other researchers have identified additional factors that show predictable patterns in how people treat different types of risk differently. Some of this is quite relevant to natural hazard insurance.

In the risk communication field, Peter Sandman identified a set of what he calls "outrage factors." When risks include outrage qualities, people worry more about them, demand more protection from them, and are willing to invest more to protect themselves against them. For example, an involuntary risk is perceived as worse than a voluntary risk.

### Some Important Outrage Factors

A risk has more outrage potential when it is:

- involuntary
- uncontrollable
- unfamiliar
- invisible
- unnatural
- not understood
- potentially harmful to many people at once
- associated with vulnerable populations
- inequitably distributed

Forcing parents to have their child vaccinated is worse than giving parents the choice to vaccinate. An uncontrollable risk, like the car that somebody else is driving, is more onerous and is considered more dangerous than a controllable risk such as the car that I'm driving.

Catastrophic risks are those that can kill many, many people all at once. Plane crashes kill many people at a time; they have catastrophic potential. Auto accidents typically kill only small numbers of people at a time. Notoriously, people are more frightened of air crashes than auto crashes, though far more people die each year in the latter than the former. As you try to understand why the same citizens who seem perfectly happy living with severe flood risks or building on the side of volcanic Mt. Rainier will bug the government to do something about high-tension electrical wires or asteroids, consult the outrage factors. The patterns are fairly clear and consistent.

Common, cognitive rules of thumb, or "heuristics," also affect risk perceptions and preferences in ways that pertain to hazard preparation and insurance. For example, one, called availability, is powerful because it seems linked to how we use our memory in basic ways. When we can call something quickly to mind from our memory, we tend to think of that thing as more probable or common than things we have more trouble recalling. But commonness, which is linked directly to probability, is not the only thing that affects memory. When things are horrible or surprising, we recall them more easily. These days, terrorism comes to mind quickly, so the availability heuristic makes many of us feel as though terrorism is a more likely event than it actually is. Floods are not so dreadful or vivid to most of us, so we do not tend to assess their probability as high as some rarer threats.

Representativeness is another heuristic. We tend to think that things we have encountered in the past are representative of what we are going to encounter in the future. In the insurance field, people who have encountered floods in the past will tend to assume that future floods will look like those they've already experienced. Or, if floods haven't happened in an area, people think that the probability of encountering one in the future will be low. The same is true for earthquakes. Fortunately, education can often help us adjust our initial, heuristic-driven assessments of probabilities and outcomes. Reports of objective studies can help. Vivid scenarios and descriptions of past or potential disasters can also often help us recalibrate our assessments. (Of course, these can also be abused to influence someone to worry too much or too little.)

To help individuals make good decisions about when to invest in protections and insurance, experts' judgments about risks are, of course, crucial. Unfortunately, experts are hampered by a number of factors from achieving agreement on when disasters will happen to what exactly their effects will be. Rareness means statistical techniques are not perfectly valuable; think here of volcanic eruptions.

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*(Continued from page 7)* **Risky Behavior**

Interaction effects mean no single force will determine a particular outcome; think of predicting the path of a hurricane. Complexity means causal analyses are hard to develop; think here of predicting earthquakes. In most natural hazard arenas, one or more of these effects is at play, and expert assessments are seldom in perfect agreement.

When experts offer different or contradictory conclusions, another decision phenomenon comes into play: ambiguity. If the experts all agree, you face a risk but you probably have a pretty good idea of what the potential outcomes are. You can take a gamble with a pretty good understanding of what is possible. If the experts don't agree, you can't actually know which set of estimates best represents reality. Ambiguity, it turns out, can have as strong an effect on decisions (or even stronger in some cases) as does risk itself. Insurers demand a much higher price to insure an ambiguous risk. Patients refuse to undertake ambiguous treatments.

Remember, a risk that is ambiguous could be either much less or much worse, but insurers—just like other people—react pessimistically to the ambiguity, as if they assume that the worst outcomes are more likely than the best.

There is some evidence that people tend to use ambiguous information to support whatever position they held in the first place. If parents are given ambiguous information about a vaccine risk for their child, the non-vaccinators will take that information to suggest that they ought to get even more vehemently opposed to vaccination. The vaccinating parents will be reassured that vaccination is indeed a safe thing to do. This phenomenon seems to work not just on an individual basis but also collectively. Cass Sunstein at the University of Chicago Law School has identified a phenomenon called "social amplification" where, with certain kinds of ambiguous risks, once a dialogue starts, people begin to adopt each others' position and interpret the ambiguous information to most strongly support one particular direction or another. In other words, when the ambiguity of the information is placed front and center in the rhetoric of a group discussion, it seems to amplify a group's initial tendencies. Sunstein points out that something like this seems to have been at work in a number of communities where NIMBY (not in my back yard) movements sprung up to oppose the location of hazardous facilities. In a community predisposed against earthquake preparation



investments, by this logic, the inherent ambiguity of earthquake predictions would tend to amplify reluctance to invest in preparations.

So far we've looked at probability distortions, context distortions, and estimate distortions. There is another type of factor that the early flood researchers mentioned but that is only recently being more systematically explored: What determines who won't insure at all? Kunreuther and his colleagues in 1977 noticed that there seem to be people who worry about hazards and people who don't worry about them, and they realized that worry seemed to be an important factor. Nearly 30 years later, we are still trying to get a better and deeper understanding of what they were seeing in that study.

We had the opportunity to study the role of worry about earthquakes in preparation for them right here in Seattle after the 2001 Nisqually earthquake. Nisqually had a moment magnitude of 6.8, comparable to Northridge. But Nisqually's center was 33 miles deep, so the force dissipated as it moved upward, and ground shaking was only relatively moderate. Even so, Nisqually was the most costly disaster in Washington State history, because we had lots and lots of assets exposed. As a result of the Nisqually earthquake in 2001, we had one heart attack death and \$2 billion in estimated losses. The Northridge earthquake resulted in 57 deaths and \$40 billion worth of losses.

We actually have a known seismic fault running beneath Seattle that puts us at risk for an earthquake something like Northridge's. The Seattle Fault runs underneath Interstate 90 and out into Elliott Bay. It goes nearly directly under Boeing, Starbucks, and Amazon.com. We even built our new baseball and football stadiums directly on top of it (although we took some serious precautions in construction). If the Seattle Fault earthquake occurs, believe me, it will be known as The Seattle Earthquake, given the assets that are sitting directly on top of it. The levels of shake in downtown Seattle would be two to three times the levels that we experienced in Nisqually.

Our population heard this information about the risk of future earthquakes following Nisqually, and we expect that they were paying some attention since they had just experienced the first big earthquake of their entire lives in

this region. So, we took the opportunity to survey members of the National Federation of Independent Businesses whose businesses were located in the area hardest hit by Nisqually. We received more than 800 responses from the CEOs and key decision makers in their small businesses.

What we learned was that Nisqually had two kinds of effects on people. Two-thirds of our respondents said, "Oh, that wasn't so bad. We did pretty well; we think we are prepared for an earthquake"...even though the press made it clear that this was not one of the big earthquakes that we are susceptible to. Only one-third of respondents said, "Whoa, I hadn't realized that we have earthquakes here. This sounds pretty serious. I think we should get better prepared." The *News Tribune* in Tacoma picked this up and divided us into grasshoppers who want to play until the bad weather comes, and ants who are taking care to put things away in advance of the bad situations that are forthcoming.

We examined which of the surveyed businesses added mitigations following the earthquake. We found that, on average, responding firms added one mitigation such as practicing their disaster plans, having supplies in place, and so forth. The disruption and direct losses that someone experienced were significant in predicting whether or not they added mitigations. You see this response in flood research as well: people who have flood losses tend to be more likely to prepare and insure against future flood losses.

We also found, though, that the people who had mitigated prior to the earthquake were even more likely to mitigate after it, independent of their business disruption and direct losses. In other words, the people who were already worried and had taken precautionary steps in the first place took even more steps after this event, no matter what their personal experience of the quake was like. Also: Those

who indicated that the quake caused them to worry more were the most likely to add preparations, independent of their estimates of how likely or how serious future earthquakes will be. In other words, worry (an emotional factor) was more important than estimates related to expected value (the rational factors) in predicting preventive behaviors.



Nisqually taught us: (1) when a disaster occurs but doesn't affect us, some of us decide that maybe we don't have to get any better prepared; (2) the cautious grow even more cautious after a disaster; and (3) worry, more than information about probabilities, is key to getting mitigations in place. Our initial concerns about whether people understand hazard information have evolved to a rich set of appreciations of how risk, tastes, context, information, and imperfections all matter in decision making. Now we are beginning to look at emotional factors and decision process factors to see the effect they have on how decisions are made. I hope that having a better appreciation for why people seem so irrational in the face of predictable risks will make it easier for you to work more constructively with your constituents. Thank you for letting me share this with you.

*Dr. Jacqueline Meszaros teaches Knowledge Management and Decision Making at the University of Washington's Bothell campus. She has studied decisions about ambiguous and high-consequence risks for nearly a decade. For the past 4 years, the focus has been on earthquake risks. She also works as a principal investigator with the National Science Foundation's Pacific Earthquake Engineering Research Center at the University of California at Berkeley.*



## Ohio Floodplain Management Handbook on the Web!

ODNR has just posted the *Ohio Floodplain Management Handbook* on the Division of Water's website for your reference. This handbook has been provided to assist floodplain managers in improving their understanding of floodplain management and administration of the National Flood Insurance Program (NFIP) criteria within their communities. By reviewing this handbook, floodplain managers can become acquainted with the science of flooding, floodplain mapping, regulations, administrative procedures, flood insurance, developing professionalism, etc... This version of the handbook has been revised and updated to provide detailed guidance necessary to implement an effective community floodplain management program. Model permit documentation has also been revised to more clearly delineate administrative responsibilities and permitting requirements. Community officials can download these documents in Microsoft Word format so they may be adapted for individual use.

To download the *Ohio Floodplain Management Handbook* as a PDF file, please visit: <http://www.dnr.state.oh.us/water/floodpln/fphandbook.htm>. For more information contact the Division of Water at 614-265-6750.

## A Crucial Juncture: Incorporating NAI-based Higher Standards as Part of Map Modernization's Required Regulation Update

By KIMBERLY BITTERS, CFM, ENVIRONMENTAL SPECIALIST  
ODNR, DIVISION OF WATER - FLOODPLAIN MANAGEMENT

By observing the extent of damage caused by Hurricane Katrina and recognizing the deficits in government response, we may be able to better plan for the needs of Ohio. Look inward towards our capacity to handle Ohio's most destructive and expensive natural disaster - flooding. Ohio floods continue to have the potential for tremendous impacts on people, infrastructure, and the economy. Let us learn from the mistakes as well as things done right on the Gulf Coast to evaluate Ohio's preparedness for the next big flood [see related cover page article].

Currently, Ohio has tremendous opportunity to improve our response to flooding and prevention of damage. We can capitalize on the attention flooding is currently receiving in the aftermath of Katrina by the media, public, and Ohio decision-makers. In addition, Ohio is fully engaged in FEMA's Map Modernization process, which means that all Ohio communities will be required to update their Flood Damage Reduction Regulations within the next few years. By combining the public awareness of potential flood damage and the requirement to update our regulations, we can reduce our susceptibility to future events.

Now is the perfect time to evaluate your community vision, needs, and flood risk to determine whether your current regulations and land use plans will provide proper guidance to make your vision a reality. When it comes to the NFIP, the federal minimum criteria do not prevent flooding increases. But your community has the authority to adopt higher standards that can prevent advancement of flood stages and reduce the scope of flood damages. With good planning, you can enable your community to shape growth patterns focused on reducing risk by revising subdivision regulations, emergency plans, flood damage reduction standards, design standards, and infrastructure improvement plans. The No Adverse Impact (NAI) approach to floodplain management is a strategy to shape development patterns in such a way that avoids adverse impacts. By incorporating NAI principles into these existing community activities, your flood risk can be drastically reduced.

NAI principles can be applied to a wide variety of community activities in such a way that minimizes or avoids potential negative impacts. Where your community identifies the need for improved flood risk reduction there are many alternatives available. The *No Adverse Impact, A*

*Toolkit for Common Sense Floodplain Management* defines seven areas where your community can incorporate the NAI approach including; *Hazard Identification, Education and Outreach, Planning, Regulations and Standards, Mitigation Actions, Infrastructure, and Emergency Services*. It is essential that the NAI philosophy be applied in a realistic manner that includes procedures to ensure implementation. Including a plan for funding, utilizing benchmarks, and setting goals that your community has the power to influence will promote implementation of NAI principles.

For those of you that have not yet updated regulations, take advantage of the Map Modernization regulation update as an opportunity to redefine your community's response to flooding. Your flood damage reduction regulations should reflect your community's unique features as well as vision for the future. When considering whether the minimum federal standards will meet your community's needs, bear in mind that unforeseeable factors may affect the outcome of the base flood event. For instance, ice jams and dam failures are not included in your currently mapped flood risk.

The primary argument against more restrictive regulations is the potential for a negative effect on economic development. When considering the costs and benefits of such regulations, both the potential loss of tax base and the long-term economic sustainability gained should be considered. Most "higher standards" continue regulating as opposed to prohibiting development in the floodplain; therefore, the impact should not be considered to significantly reduce land values. Further adverse impacts to neighboring developments and community and individual savings on avoided damages from increased flood stages should be factored into the analysis. Once all of these factors are considered, it is unlikely that the costs will overshadow the benefits. Don't forget that regulations are only part of the equation for companies determining where they will locate. Your community has the ability to further stimulate growth with economic incentives, training programs for your labor force, and preservation of natural amenities. For these reasons, communities across Ohio have already included a number of higher standards in their flood damage reduction regulations. In addition, Ohio communities are actively applying the NAI approach to floodplain management, storm water, subdivision, and other regulations.

Your community does not have to enact sweeping NAI-based changes to make a difference in flood damage reduction. Adopting just a few "higher standards" into your flood damage reduction regulations can make a big difference in reducing flood risk. These small changes can assist in preventing flood damage impacts such as urban blight, loss of public infrastructure investment, and lost jobs. The most effective and commonly applied "higher standards" in Ohio include freeboard, 500-year protection for critical facilities, dry land access, cumulative substantial damage definition, and restrictions on fill.

- **Freeboard** is the addition of feet above the Base Flood Elevation (BFE) for additional protection of development. Freeboard also may be applied to A Zones without BFE by requiring all structures to have the lowest floor elevated above the highest adjacent grade. Many communities adopt two feet of freeboard to compensate for unknown risk factors and to obtain direct savings on flood insurance premiums.
- **500-year protection of critical facilities** reduces risk to the health and safety of the entire community as well as particularly vulnerable subpopulations. Facilities such as fire and police stations—as well as hospitals—play a crucial role in rescue and recovery efforts during a flood event. Additionally, facilities such as schools, nursing homes, and jails contain potentially immobile groups that require additional safeguards. Furthermore, hazardous material storage sites have the potential to further escalate a flooding situation. All of these facilities certainly deserve a higher level of protection.
- **Dry Land Access** should be incorporated into all development plans to ensure safe entry and exit from the floodplain during the base flood event. Dry land access will provide for direct evacuation routes and permit emergency services to be supplied at crucial times.
- **Cumulative Substantial Damage definitions** can be extremely beneficial to repetitive loss property owners. The minimum federal standard for the substantial damage definition is a single event "whereby the cost of restoring the structure to its before damaged condition would equal or exceed 50 percent of the market value of the structure before the damage occurred." Owners of substantially damaged structures are eligible for Increased Cost of Compliance (ICC) funds of up to \$30,000 for compliance with flood damage reduction regulations. Benefits of broadening the

## HIGHER STANDARDS

- **Freeboard**
- **500-Year Protection of Critical Facilities**
- **Dry Land Access**
- **Cumulative Substantial Damage Definitions**
- **Restrictions on Fill**

definition are felt by the property owners receiving monies to elevate or floodproof their structure and by the community through diminished impacts of flood events. Mitigation projects such as these play a crucial role in floodplain management efforts.

- **Restrictions on Fill** is not part of the minimum federal standards for NFIP communities. However, regulation of floodplain filling activities can provide benefits in water quality and floodwater storage capacity that both contribute to reduced adverse impacts on neighboring properties. Limits on fill can be addressed in a number of ways including quantity, quality, location, stability, and compaction. These standards can be specifically applied to the floodway only or to the entire regulatory floodplain.

For a more comprehensive list and discussion of higher standards see ODNR's *Ohio Floodplain Regulation Criteria* document that can be downloaded at <http://www.dnr.state.oh.us/water/floodpln/modelfldrules.htm>.

As the aftermath of Katrina reminds us, a swift response to rebuilding and recovery is desirable; however, rebuilding the same high-risk neighborhoods is not beneficial for the long-term health of the community. Therefore, certain aspects of recovery have been slowed to create well-balanced investment in the hope that, post-Katrina, the region will be stronger.

If the NAI planning approach were utilized prior to Katrina, planning tools would now be available to rebuild with a higher level of protection without hesitation. This is why it is crucial for Ohio to learn from Katrina to provide adequate planning changes that incorporate a new dedication to risk reduction through NAI principles before our next disaster. The first step to improving Ohio's flood risk should be to incorporate higher standards—specifically tailored to your community's needs—into flood damage reduction regulations at this crucial juncture.



# CALL FOR ABSTRACTS

## *2006 Ohio Statewide Floodplain Management Conference*

### Columbus, Ohio

**Abstract Submittal Information.** The Call for Abstracts is open to anyone interested in making a presentation to the conference. Abstracts will be reviewed by the Conference Planning Committee and selected based on content and relevance to floodplain management and associated issues.

**Submissions must be received by February 1, 2006** to be considered for presentation at the conference. Incomplete or late submissions may be refused.

#### **Abstract Guidelines:**

- Submissions must be concise, limited to 500 words, and provide an accurate description of the policy, educational, scientific, engineering, or technological material to be presented at the conference.
- Abstracts must be accompanied by the Abstract Submittal Form, which can be obtained from the ODNR website at: <http://www.dnr.state.oh.us/water/floodpln/> under "New Program Items".
- The Abstract Submittal Form must be completed and submitted to the Conference Chair along with the biographical sketch(es) of the author(s), and the abstract.
- Abstracts should be submitted by email to [alicia.silverio@dnr.state.oh.us](mailto:alicia.silverio@dnr.state.oh.us) as a Microsoft Word or Corel WordPerfect attachment. (You will receive a return email to confirm that your submittal has been received.) If you do not have email or Internet access, or have other submittal questions, contact Conference Chair, Alicia Silverio at 614-265-1006.

#### **Authors selected as Presenters:**

- Will be notified of acceptance of the abstract for presentation by March 15, 2006.
- Will use laptop computers and LCD projectors provided on-site, utilizing the Microsoft PowerPoint program.
- Provide a copy of the presentation to the Program Coordinator via email or CD by August 7, 2006.

**Audience.** The statewide conference will offer three tracks to accommodate attendees and their various levels of floodplain management knowledge and experience. As the only floodplain management conference in Ohio, this annual event attracts a broad audience including local, state, and federal government officials, engineers, consultants, planners, related non-profit organizations, and involved citizens. Please develop your presentation using the sort of detailed and useful material that you would like to have presented to yourself. Presentations that will interest the audience and generate conversation are encouraged. Presentations focused on delivering a "sales pitch" approach will not be accepted.

**Length and focus of presentation.** Presentations will be allotted 30, 45, or 60 minute sessions, unless otherwise indicated on the agenda. Please emphasize conclusions and recommendations in your presentation based upon your professional experience(s).

**Audio-Visual.** Authors selected as Presenters will use laptop computers and LCD projectors provided on-site, utilizing the Microsoft PowerPoint program. Additionally, each presentation must be provided to the Conference Chair by August 7, 2006, via email or CD. A moderator will monitor each breakout session. There will be no time lag between speakers due to the common problem of 'swapping out' of personal equipment. Laser pointers will be available.

**Travel arrangements.** Presenters are responsible for their own hotel, air, and other travel arrangements. Conference facility and accommodations information will be posted at: <http://www.dnr.state.oh.us/water/floodpln/>.

**Display materials and handouts.** All Presenters are encouraged to provide the Conference Chair with handouts of the information presented during their presentation for distribution to conference attendees. These handouts must be submitted to the Conference Chair by August 7, 2006. Presenters may also bring books, reports, pamphlets, handouts, and other materials that may be of interest to the audience.

For more information about the *2006 Ohio Statewide Floodplain Management Conference*, please contact Alicia Silverio at 614-265-1006 or [alicia.silverio@dnr.state.oh.us](mailto:alicia.silverio@dnr.state.oh.us).

## POSSIBLE ABSTRACT TOPICS

### Floodplain Mapping

- Map Modernization
- Map Revisions and Amendments
- Cooperating Technical Partners
- MNUSS

### No Adverse Impact

- Local Cost of Flood Damage
- Future Conditions Hydrology
- Developing Watersheds
- Going Beyond the National Flood Insurance Program
- Disaster Assistance
- Private Property Rights

### Community Land Use and Mitigation Planning

- Mitigation Successes and Failures
- Disaster Mitigation Act of 2000
- Tools for Planning and Management
- Floodplain Encroachment
- Riparian Protection
- Risk Assessment and Vulnerability Analysis
- Development Review and Permit Process
- Legal and Regulatory Aspects
- Population Growth
- Financing
- Cost / Benefit of Mitigation

### Technology for Map Modernization

- LIDAR
- Digital Mapping Tools and Products
- Global Positioning Systems
- Geographic Information Systems
- Databases
- World Wide Web/Internet Distribution
- Computer Modeling

### Flood Disasters

- Severe Weather
- Environmental Impacts
- Dams, Dikes, Levees
- Watershed Planning and Management
- River Operations
- Flood Forecasting, Warning and Preparedness
- Flooding and Floodplain Management
- Effects of Urbanization
- Riparian Protection
- Damage Assessment
- Emergency Response

### Public Policy

- Politics of Risk Reduction, Economic Efficiency and Environmental Enhancement
- Legislative Initiatives
- Integrated Water Resource Planning
- Inter-jurisdictional Responsibilities and Roles
- Preventive / Corrective Approaches
- Multiple-objective Planning
- Cost-sharing in Mitigation Activities
- Infrastructure
- Coordination Strategy
- Implementation Strategy

### National Flood Insurance Program and Floodplain Management Issues

- Repetitive Losses
- Post-flood Recovery
- Compliance
- Regulations and Policy
- Letters of Map Change
- Insurance

## Ruling on Cumulative Substantial Damage

By CHRISTOPHER M. THOMS, CFM, SUPERVISOR  
ODNR, DIVISION OF WATER - FLOODPLAIN MANAGEMENT

Enforcement of local flood safety standards is an essential part of floodplain management. Even when a local floodplain administrator clearly explains and applies the standards appropriately, occasionally a floodplain property owner will contest the regulations in court. The following is meant as encouragement for all local floodplain managers.

Structures built prior to the community's initial Flood Insurance Rate Map (FIRM) are known as Pre-FIRM and are not required to comply with Post-FIRM flood safety standards. (When a Pre-FIRM structure undergoes an alteration of 50% or more, Post-FIRM flood safety standards are required. The concept is that a substantial re-investment should not be placed at risk without at least applying minimum local flood safety standards.) All local floodplain administrators (in NFIP-participating communities) must review alterations to the value of Pre-FIRM structures prior to structural improvements and following damage from any source to determine whether substantial (*i.e.*, greater than 50% of the value of the structure) damage or improvement has occurred.

In many Ohio communities, such determinations apply only when one event (damage and or improvement) exceeds 50%. As a result, a structure may be repeatedly altered—in amounts less than 50%—so that the current value far exceeds the value of the structure at the time the flood hazard was initially identified. Such structures increase the risk to life and property and defeat the intent of your law to ensure the local application of minimum flood safety standards. FEMA encourages communities to adopt language that specifies some form of cumulative tracking of alterations to reduce or eliminate this loophole.

In May 2002, flooding again damaged homes along Illinois' Sangamon River in Sangamon County, near the state capital city of Springfield.



As the county's floodplain administrator and a Senior Planner for Springfield / Sangamon County Regional Planning Commission, Linda Wheeland, CFM, was part of a post-flood response that many flood-weary Ohio floodplain managers are all too familiar with. This response includes the essential damage evaluations that help reduce future flood risk by accurately assessing damaged structures and appropriately applying locally adopted flood safety standards.

In April 2002, one month before the May flood, Sangamon County officials adopted cumulative damage language into their flood safety regulations. The importance and benefit of this damage assessment was not fully appreciated by the owner of one cabin damaged by the May flood. Though Ms. Wheeland's damage assessment for this home resulted in a substantial damage determination that was supported by repetitive flood insurance claims and an independent appraisal, the homeowner contested those results in court.

On October 3, 2005, the 7<sup>th</sup> Circuit Judicial Court published the following opinion:

*Because Defendant's lack of counsel and the importance of the issue, the Court researched the issue on its own. Rules of statutory interpretation require that statutes cannot regulate or punish conduct which took place before the effective date of the legislation, but that newly enacted remedies govern when those remedies apply at the date of the hearing. For this reason and the reasons noted in Plaintiffs Memorandum, both the damages sustained in 1996 and those sustained in 2002 are added together to determine whether the structural damage is more than 50% of the value of the structure.*

The court agreed that the house was indeed substantially damaged and that cumulative damage could be used to make that determination even when damage occurred (in 1996) before the county had adopted cumulative language in their local floodplain regulations (in 2002).

For communities interested in adopting a higher standard for tracking substantial alterations, Ohio's Floodplain Management Program office provides model language for one approach in Chapter 3 of *Ohio Floodplain Regulation Criteria* page 24. This publication contains the current model flood safety regulations, adoption instructions, and suggested higher standards (along with the names of Ohio communities using those standards). Local officials are encouraged to download a copy at <http://www.dnr.state.oh.us/water/floodpln/modelfldrules.htm>. For more information contact our office at 614-265-6750.



## NFDA Awards Its Certification to Ten FZD Companies

[Reprint of an article in *The National Flood Examiner*, the official newsletter of the National Flood Determination Association (NFDA), Volume 10, Issue 1, Spring 2005.]

Although the moment passed quietly, it represented a milestone in the maturation of the flood zone determination industry – the NFDA recently completed its certification process for the first group of applicants. Following a rigorous examination, ten companies have been certified as meeting the NFDA's stringent standards on seven key criteria: accuracy, business recovery capabilities, industry experience, financial viability, training of map research analysts, quality assurance, and record-keeping. Peer and independent auditor reviews validated each applicant company in these areas. "Considering that our members completed in excess of 33 million flood zone determinations in 2003 alone, establishing industry standards and implementing the certification program is especially timely," said Cheryl Small, President of the NFDA. The NFDA Certification Program is also designed to recognize companies that maintain standards of excellence, foster professionalism, and advocate quality services within the industry.

### The Certification Process

The certified companies each submitted a statistical sample of flood zone determinations performed over a one-year period to an independent data processing company who in turn sent random blind samples to a group of control companies for audit. The certified companies met the NFDA's 99% accuracy standard in identifying Special Flood Hazard Areas. In addition, an independent auditor reviewed each applicant company's business recovery plan, training program, quality assurance program, and record keeping procedures. Each certified company demonstrated that they maintain adequate insurance, reserves and other measures of availability to meet financial obligations.

### Learning More About NFDA Certification

Rick Catalano is the current Certification Committee Chairperson. Mr. Catalano may be reached at American Flood Research, 1820 Preston Park Blvd., Suite 1100, Plano, Texas 75093. Telephone 800-995-8667, ext 106. The Committee is working on the next certification cycle and will announce the application period in the near future. NFDA membership is not required to apply for, or to become, a certified company. While NFDA certification can be used as a tool in the evaluation and selection of flood zone determination providers, it does not replace due diligence processes. NFDA certification cannot guarantee the performance of an individual company; it confirms that a company, at a certain point in time, met the standards to achieve NFDA certification. More information about the certification process can be found at [www.floodassoc.com](http://www.floodassoc.com).



### 2005 NFDA Certified Recipients

Access Information Systems, Inc.  
 American Flood Research, Inc.  
 Charles Jones, LLC  
 First American Flood Data Services  
 LandSafe Flood  
 LSI Flood Services  
 Midwest Flood Zones, LLC  
 Nationwide Real Estate Tax Service, Inc.  
 Nationwide Total Flood Services, Inc.  
 TransUnion Settlement Solutions, Inc.

## Check Out These Important Websites

[www.floodmaps.fema.gov](http://www.floodmaps.fema.gov)

Michael Baker Corporation's site to track the status of flood studies and management reports including the Multi-Hazard Implementation Plan. This site is for use by those actively engaged in flood hazard mapping maintenance and updates.

<http://hazards.fema.gov>

This site for FEMA's Multi-Hazard Information Platform. The Mapping on Demand (MOD) staff welcome comments on their Website as well as comments on any aspect of their work or ideas for better coordination with stakeholders. E-mail your ideas and suggestions to the Community and Stakeholder Engagement (CASE) Integrated Program Team at:

[CASE@mapmodteam.com](mailto:CASE@mapmodteam.com)

## Legislative Breakfast A First at 2005 Conference

By MARY SAMPSEL, PE, OFMA CHAIR AND ASSISTANT COUNTY ENGINEER  
UNION COUNTY ENGINEER DEPARTMENT

One of the more interesting sessions at OFMA's *Floodplain Management in Ohio – Statewide Conference 2005* was the Legislative Breakfast. Chad Berginnis, CFM, Mitigation Branch Chief and State Hazard Mitigation Officer, Ohio Emergency Management Agency, moderated the session and OFMA panel members Jerry Brems (Licking County), Ray Sebastian (Clermont County), and Mary Sampsel (Union County) gave their insight into local officials' difficulties with implementing a highly effective floodplain management program.

The four legislative members that either attended—or were represented—included: Representative Jennifer Garrison, Representative Mike Mitchell, Representative Jim McGregor, and Representative Ron Hood. On behalf of the Ohio Department of Natural Resources (ODNR), Ohio Floodplain Management Association (OFMA), and the Federal Emergency Management Agency (FEMA), I would like to publicly express our appreciation to those members and their staff whose participation truly helped make our *first* legislative breakfast and this conference even more successful!



**Representative Jim McGregor**



**(Left) Representative Ron Hood, (Right) Division of Water, Chief Dick Bartz**

One of the outcomes from the breakfast is that the OFMA legislative committee will develop a legislative priority pamphlet and send the pamphlet to all of the State of Ohio House and Senate legislators. In this way, OFMA will keep the legislators informed of our needs as local floodplain managers and provide them with the technical expertise to make well-informed decisions regarding floodplain issues. We hope to build on what we learned this year and make next year's legislative breakfast even better.



# Statewide Conference 2005 Award Winners

*OFMA Chairman, Mary Sampsel was the presenter for the awards ceremony.*



***"Floodplain Administrator of the Year"***  
Ed Warner, Carroll County Floodplain Administrator (above)



***"Innovation in Floodplain Management"***  
Bob Eichenberg, Planning Director  
Athens County Regional Planning Commission (above)



***"Peter G. Finke Award - Most Valuable Contribution to Floodplain Management"***  
Jim Morris, P.E. Director  
USGS Ohio Water Science Center (above)



***"Jerry J. Oney - Distinguished Member Service Award"***  
Mike Mihalisin, CFM , Geauga County  
Floodplain Administrator (right)

## 2005 Ohio Statewide Floodplain Management Conference

BY ALICIA SILVERIO, CFM, ENVIRONMENTAL SPECIALIST  
ODNR, DIVISION OF WATER - FLOODPLAIN MANAGEMENT

On August 31-September 1, 2005, the Federal Emergency Management Agency (FEMA), Ohio Department of Natural Resources (ODNR), and Ohio Floodplain Management Association (OFMA) sponsored the sixth annual Ohio Statewide Floodplain Management Conference at the Marriott North in Columbus. The conference theme, "Building Sustainable Communities through Comprehensive Floodplain Management", was emphasized and substantiated as the northbound remnants of Hurricane Katrina brought severe weather to Ohio.

To support the conference theme, the agenda integrated the essential elements of floodplain management (regulations, hydrologic and hydraulic analysis, mitigation, and mapping) with advanced concepts such as future conditions modeling, higher regulatory standards, Community Rating System (CRS) participation, and No Adverse Impact (NAI). The new conference venue afforded the addition of special workshop sessions to the three concurrent tracks that offered 44 different speakers to cover 34 sessions. This year's conference also featured an extraordinary Keynote Speaker, Edward Thomas, *Esq.* from Baker Engineering. Mr. Thomas discussed the implementation and legal implications of NAI on community and national levels. *Our sincere thanks goes to Baker Engineering for their conference support by sponsoring Ed Thomas for the Keynote Address and the NAI Workshop.*

Conference attendees can receive up to 12 Continuing Education Credits (CEC)s for attending the Statewide Conference toward the continuing education requirements for the Certified Floodplain Manager (CFM) accreditation.

A successful conference relies on the contributions and support of many. So much thanks goes to:

- **FEMA** for providing support and funding to enable the coordination of the Statewide Conference.
- the **2005 Conference Planning Committee** [Sandra Ashba, Marty Bresher, Kathy Dorman, Tadd Henson, Jim Mickey, Mike Mihalisin, Randy Pore, Mary Sampsel, and Gary Zeigler] for all their time, effort, and dedication.
- the **Presenters** for all their work to prepare and convey information to conference attendees with the purpose of promoting wise and effective floodplain management throughout Ohio.
- the **Sponsors** [Baker Engineering, Burgess & Niple, CT Consultants, EMH&T, FMSM Engineers, SmartVent, and Watershed Concepts] for their participation as well as their financial support of the conference.

- the **Exhibitors** [National Weather Service, United States Geological Survey, Water Management Association of Ohio, Ohio Emergency Management Agency, Ohio Floodplain Management Association, ODNR Floodplain Management Program, Federal Emergency Management Agency, and the Association of State Floodplain Managers] for showcasing their programs and services to conference attendees so that communities could examine opportunities to improve local floodplain management.
- the **Attendees** for their time and effort to learn how to improve flood damage prevention throughout their communities.

Thanks so much to all of you!

### OFMA Recognition Awards

Each year at the Ohio Statewide Floodplain Management Conference, OFMA acknowledges individuals for their dedication and service in floodplain management by presenting Recognition Awards. The OFMA Awards Committee solicits nominations throughout the year, to identify extraordinary individuals and or programs for their professionalism, enthusiasm, and support for floodplain management. The Committee reviews the nominations and selects recipients based on the award criteria. Congratulations to the 2005 OFMA Recognition Award Recipients:

**Floodplain Administrator of the Year** was awarded to – Ed Warner (Carroll County)

**Award for Innovation in Floodplain Management** was presented to Robert Eichenberg (Athens County Regional Planning Commission)

**Peter G. Finke Award for Most Valuable Contribution to Floodplain Management** was presented to Jim Morris (USGS Water Science Center)

**Jerry J. Oney Distinguished Member Service Award** was given to Mike Mihalisin (Geauga County)

If you would like to nominate a peer or colleague for any of the OFMA Recognition Awards, don't wait! Nominations are currently being accepted for 2006 honors. The deadline for submission is June 1, 2006. For criteria, application forms, or more information, please call 513-732-7213 or email: [rrsebastn@co.clermont.oh.us](mailto:rrsebastn@co.clermont.oh.us).

### "Moving in the Right Direction" Recognition

In an effort to acknowledge those who work toward strengthening floodplain management across the State of Ohio through their everyday actions or by going the extra

mile, OFMA developed the "Moving in the Right Direction" Recognition. These awards were designed to be a fun informal opportunity to show the great strides that Ohio Floodplain Management professionals are making on a regular basis. The 2005 recipients included, Ohio's CFM's, Ohio Community Rating System (CRS) communities, conference sponsors, government agencies, conference planning committee members, and others who assisted with the conference. Conference attendees were also invited to nominate and recognize themselves or their peers from the floor. Recipients were awarded compasses to keep them *moving in the right direction*... Congratulations to all 2005 "Moving in the Right Direction" recipients!

OFMA hopes to continue this recognition annually at the Statewide Conference. Should you have a nomination, please e-mail Alicia Silverio at [alicia.Silverio@dnr](mailto:alicia.Silverio@dnr.state.oh.us).

[state.oh.us](http://state.oh.us).

### **New Certified Floodplain Managers in Ohio!**

In August, eight individuals successfully completed the Certified Floodplain Manager (CFM) examination that was offered in coordination with the Ohio Statewide Floodplain Management Conference. The CFM exam is a specialized certification exam administered by the Association of State Floodplain Managers (ASFPM) for floodplain management professionals. The CFM accreditation promotes continuing education, professional development, credibility, and recognition in the floodplain management discipline.

Congratulations to Ohio's newest Certified Floodplain Managers: Tim Beck, Kimberly Bitters, George Hadden, Lisa Jeffrey, Craig Kenley, Jim Mickey, John Rehme, and Jonathan Sorg.



#### **To the Editor,**

As the Floodplain Programs Manager for the State of Illinois, I was recently deployed to Mississippi to help with Hurricane Katrina disaster recovery. I would like to thank the Ohio Building Officials Association for their assistance with the recovery effort. In many of the communities I visited, the local officials from Mississippi had nothing but kind words to say about the Ohio volunteers. The Ohio volunteers were highly motivated, well trained, and very professional. The Ohio volunteers were experts in the floodplain management regulations and were able to step right in and use those skills in Mississippi to help others.

I also had the opportunity to work with clerical volunteers from the City of Dublin who were also an invaluable resource to the hurricane disaster communities. The professionalism and motivation of the Ohio volunteers made me proud to be a fellow Midwestern Yankee!

Thank You Ohio!  
Paul Osman  
Illinois Office of Water Resources

#### **Attention!**

Future newsletters (*The Antediluvian*) will **only** be available electronically on our website at: <http://www.dnr.state.oh.us/water/>. We will no longer have them printed and mailed to you. If this is a hardship or you do not have the resources to view the newsletter, contact us at 614-265-6750.

## ***Floodplain Management Training Available***

***EMA offers on-campus and correspondence courses through their Emergency Management Institute (EMI) in Emmitsburg, MD.***

***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.***

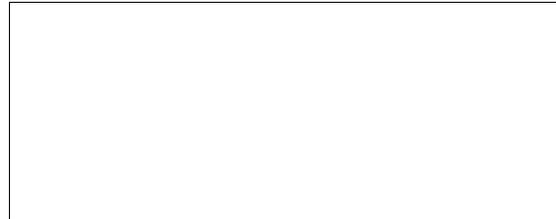
***Mortgage lenders and insurance agents can learn about federal flood insurance at Lender & Agent Seminars.***

***For the latest information on these and other seminars call Rich Slevin, Regional Marketing Manager for the NFIP at: 630-577-1407***



**ODNR, DIVISION OF WATER**  
2045 Morse Road (B-2)  
Columbus, Ohio 43229-6693

**Bob Taft, Governor**  
**Samuel W. Speck, Director**  
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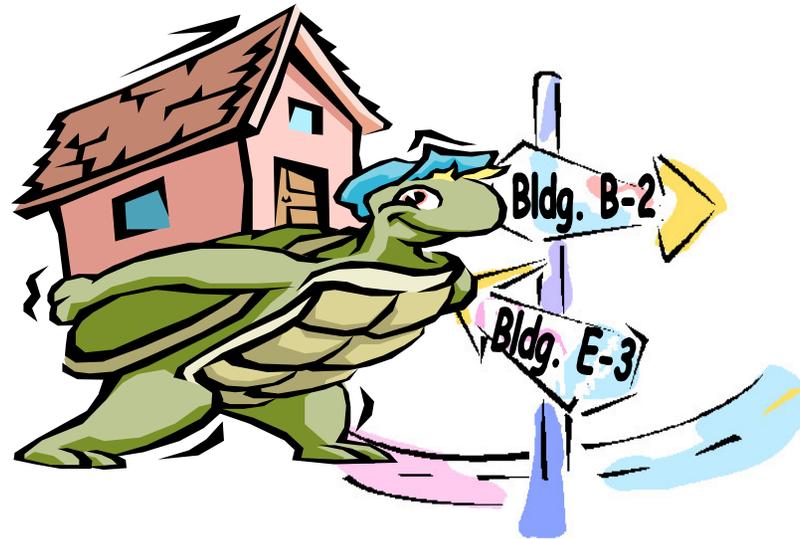
## **We've Moved.....*have you?***

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We have moved across the parking lot to a remodeled building in the same complex. If you have moved recently please mail us your new address or call our main line at 614 - 265-6750.

Come and visit us at our new location:

**ODNR, Division of Water**  
**Floodplain Management Program**  
**2045 Morse Road Bldg. B -2**  
**Columbus, OH 43229 -6693**



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