



Vol. 15, No. 4
August 2003

ASSOCIATION OF STATE FLOODPLAIN MANAGERS, INC.

RESIDENTIAL DEVELOPMENT DECISIONS AND FLOODPLAIN LOCATIONS

Mary Margaret Shaw
University of North Carolina, Chapel Hill

Introduction

Urban sprawl has become a national policy issue because of its many adverse consequences. To curb sprawl, a number of jurisdictions in the United States have adopted urban growth boundary policies. However, urban growth boundaries themselves may also have adverse consequences. One unintended effect of growth boundaries suggested in the literature on this topic is increased development in environmentally sensitive areas, such as floodplains, because the supply of buildable land has been restricted (Burby et al., 2000). The purpose of the research project described in this article was to learn from residential developers how they make decisions about development on floodplain land and to learn if urban growth boundaries are in fact inadvertently encouraging development on floodplains. If the various factors that push development onto or away from floodplains can be identified, then additional tools for effective floodplain management programs can be suggested.

Urban Growth Boundaries

The first urban growth boundary around a city in the United States was created in 1958 in Lexington,

Kentucky. Since then, many different states, counties, and cities have adopted urban growth boundaries to prevent sprawl. A growth boundary is a location specified on a map beyond which urban development is typically discouraged with regulations that require very low-density zoning and by a policy not to provide urban water and sewage services beyond the boundary. All urbanized areas in Oregon are surrounded by growth boundaries. An alternative type of growth boundary is a greenbelt surrounding an urbanized area. The City of Boulder, Colorado, is surrounded by such a greenbelt.

Urban growth boundaries are mandated for all urbanized areas in Oregon, but are voluntary in Colorado. One impact that has been observed when growth boundaries are not implemented region-wide is that developers will locate new development in areas where the supply of land is not restricted by a boundary.

Another documented result of urban growth boundaries is higher density development. Higher density is typically allowed in Oregon because each urban growth boundary must include sufficient land for 20 years' worth of growth (*Oregon Revised Statutes* Section 197.296(2)). To estimate the amount of land needed within the boundary, an assumption is made about the rate of growth. If growth exceeds that rate, the land within the boundary is developed more quickly than

anticipated. Another difficulty is that when estimating the amount of land available within an urban growth boundary, the willingness of various landowners to sell their land is not known. If owners are not willing to put property on the market, perhaps because the land is used for production or because of sentimental attachment, then the land is not available for development. One way to accommodate a growing population on a limited supply of land is to increase density.

[continued on page 4]

Mary Margaret Shaw, a Ph.D. candidate in the Department of City and Regional Planning at the University of North Carolina, Chapel Hill, was the recipient of the 2002–2003 Graduate Fellowship in Floodplain Management, sponsored by the ASFPM and the Federal Emergency Management Agency. Here she reports on the research she conducted during her year of the fellowship, trying to shed light on the question of whether urban containment programs increase development pressure on floodplains when outlying areas become off limits.

from the Chair

Chad Berginnis

The folks in Knox County, Ohio, know what is coming. In less than 45 minutes, a person can get from Knox County to Columbus, the 15th-largest city in the United States. Largely rural, Knox County has some outstanding natural floodplain resources. In particular, the Kokosing River, which is a designated state scenic river, flows through the county and is a popular site for canoeing and fishing. However, the Kokosing has caused devastating flood losses in the county as well. Still predominantly rural with nearly 55,000 residents, Knox County has not yet seen the growth that will occur in the future.

The Knox County Regional Planning Commission (RPC) understands that now is the time to prepare for future growth issues. Such resolve led its members to research available information and contact the state floodplain management office for assistance. Specifically, the RPC was interested in the “no adverse impact” (NAI) approach. This inquiry was surprising given that their floodplain management program was virtually non-existent three years ago.

Using a modified version of the NAI PowerPoint presentation from the ASFPM website, I presented the approach to the RPC last month, and had the opportunity to discuss specific questions with RPC members before the meeting. I have to admit to being taken aback by the positive reception that NAI received. Having spent several years working with local officials on improving local floodplain management programs, I don’t recollect another time when so many different people “got it.” Really, though, I shouldn’t have been surprised at all.

You see, NAI as an approach to floodplain management is sensible, can address current and future flood problems, places the burden of mitigating adverse impacts on the party responsible for the impact instead of the local government, and can be tailored to fit any community. Additionally, NAI is about property rights—protecting against the gradual erosion of the property rights of those landowners who are increasingly affected by increased flood heights and flood flows due to upstream and sometimes downstream development. However, I think that the NAI approach is most succinctly described as a “good neighbor” policy. NAI is NOT a no-development approach; rather, it is more like a sustainable development approach—where adverse impacts are identified and mitigated as development occurs.

I hope that you read the article in this issue of *News & Views* [p. 3] describing the NAI products that are being developed by the ASFPM. I am optimistic that these products will be extremely useful, whether you are a state official, local official, or citizen-activist. The ASFPM is committed to developing an array of NAI products that can be used by practitioners in the field to implement effective floodplain management programs and policies. If interested, you can also peruse the ASFPM website for additional information, or contact any ASFPM board member.

The Knox County RPC believes in the NAI approach. This fall the RPC will identify what planning, policy, and regulatory changes they want to make to incorporate NAI floodplain management. Yet, they are only one in nearly 20,000 communities in the United States with identified flood hazard areas. I am encouraged that several members of the ASFPM have, for years, taken a NAI approach in their communities, and more are beginning to do so. Still, we have a long way to go. So, there is only one lingering question in my mind—who is going to be next? □

LOOKING BACK ON THE 1993 MIDWEST FLOOD

The Midwest Flood of 1993 was among the worst flood disasters in U.S. history. The flooding started in late May 1993; in some places the floodwaters didn’t subside until October. More than a thousand levees in the Midwest failed or were overtopped. At 600 monitoring points in the Midwest, rivers were above flood stage. Nine states were affected. Fifty people lost their lives; 54,000 were left homeless. Fifty thousand homes were destroyed or damaged, and 75 communities were completely under water. Property damage alone ranged between \$12 and \$16 billion. The estimated federal response and recovery costs exceeded \$4.2 billion in direct federal assistance with another \$621 million provided in disaster loans to individuals and businesses.

Remembering that devastation now—10 years later—may help other property owners and communities at risk from flooding become more aware of the harm that floods can do to lives, property, and infrastructure. Accordingly, the Federal Emergency Management Agency has released a 10th-anniversary publication, *The 1993 Great Midwest Flood: Voices 10 Years Later*, which lets readers hear directly from survivors of the 1993 flood, including officials of flooded communities. In their own words, they tell what the Great Midwest Flood of 1993 did to them, their property, or their towns, and what they have learned about the value of mitigation and the benefits of flood insurance protection.

>>> The publication can be downloaded from <http://www.fema.gov/nfip/voices.shtm>.

NO ADVERSE IMPACT PROGRESS IS BEING REALIZED

This column gives details and answers questions about the ASFPM's "no adverse impact" approach to floodplain management. Questions about NAI are welcome, and can be sent to the Editor at the email address on the last page.

Over the last months there have been numerous developments in the progress of no adverse impact floodplain management. Some highlights are listed below. All of the ASFPM activities fit into the NAI strategic plan, developed to outline the steps that must be taken to achieve our vision of no adverse impact floodplain management [see box].

PowerPoint Presentation This set of visual aids has been newly revised, and is available for use by anyone who has an opportunity to spread the word about no adverse impact floodplain management. Many members across the country have taken advantage of this already-prepared material to augment their presentations in various state, local, and national forums [see *From the Chair*, p. 2 of *this issue*]. It can be downloaded from the ASFPM website at <http://www.floods.org>.

Legal Flyer *Community Liability and Property Rights: Does Your Community Need to Worry?* has been produced and distributed with funds from the McKnight Foundation and the ASFPM Foundation. It is a four-page flyer that summarizes important concepts that govern the legal liability of localities that cause or permit an increase in flood or erosion hazards. The flyer is based on the forthcoming paper, "No Adverse Impact Floodplain Management and the Courts," by attorney Jon A. Kusler, which will be published this fall. As funding permits, the next legal flyer to be produced will be on "takings." The ASFPM hopes eventually to have a series of legal flyers on various floodplain and development-related topics.

The *Community Liability* flyer is available on the ASFPM website at <http://www.floods.org>. Printed copies can be obtained by contacting the Executive Office at (608) 274-0123 or asfpm@floods.org.

ASFPM Conference Several NAI-related sessions were held at the ASFPM's annual conference in St. Louis in May. More than a dozen speakers addressed NAI throughout the course of the week. About 20 people attended the NAI Training Workshop on May 11. The NAI Open House on May 14 turned out to be a lively and informal venue for getting input on the NAI Toolkit [see *below*] and building blocks. More than 80 people participated, and the NAI Steering Committee were facilitators and recorders.

[continued on page 4]

What is NAI?

The ASFPM believes that rising flood losses can best be remedied by adopting a broad guiding principle of "no adverse impact" (or NAI) floodplain management. Under an NAI framework, the action of one property owner within a watershed is not allowed to adversely affect the flood risks for other properties, as measured by flood stages, flood velocities, flood flows, and the potential for erosion or sedimentation, unless community-approved mitigation occurs.

The ASFPM has a stated vision of NAI floodplain management, goals adopted pursuant to that vision, and a strategic plan that calls for specific actions to work towards those goals.

A Vision of No Adverse Impact Floodplain Management in the United States

Communities with comprehensive planning approaches to flood loss reduction have incorporated no adverse impact (NAI) principles into the broader community fabric of economic, environmental, and social concerns; and into their planning and development management programs and policies. The rest of the nation's communities have adopted and adequately enforced national flood loss standards and programs, which have been revised to incorporate basic principles that account for the adverse impacts of development.

Goal I. Achieve flood loss reduction.

Vision: *The adverse flood impacts of all current and future development in the nation's watersheds are prevented or fully mitigated.*

Goal II: Empower state programs and local communities.

Vision: *Communities and states accept the responsibility to account for all adverse impacts of all current and future development in their watersheds.*

Goal III: Effect change in programs and standards.

Vision: *Minimum national standards and programs are upgraded to prevent or mitigate the adverse impacts of development in the nation's watersheds. Those programs provide responsibility and control to communities and states through appropriate delegation and oversight.*

> > > Learn more about the concept of NAI and how it is being applied across the United States by checking the ASFPM's website at <http://www.floods.org>.

No Adverse Impact (cont.)

NAI Toolkit A draft of *No Adverse Impact: A Toolkit for Common Sense Floodplain Management*, has been distributed for comment. It will be revised and the final product, designed to go in a three-ring binder for easy updating, will be ready in the fall.

Case Studies The *NAI Case Studies* publication, which is being produced with support from the Public Entity Risk Institute, will provide communities nationwide with information about what techniques have worked in implementing NAI approaches, allowing them to select solutions to their flood problems from alternatives that have already been proven workable [see *News & Views*, June 2003, p. 2]. Nomination forms have been sent to all communities that were suggested. Selection will occur in the fall, research will be conducted through the winter, and the publication will be printed for distribution at the 2004 annual conference.

Ideas Catching On The June 13 *Houston Chronicle* had an article by Kevin Shanley, President of the Bayou Preservation Association, in which several NAI concepts are supported.

. . . 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. . . . 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.

I recommend . . . Map all flood hazards in the city's watersheds, not just those that are currently shown in the [Flood Insurance Rate Maps]. . . . Map the floodplain as it will be when the watershed is fully developed. . . . Adopt the "no adverse impact" standards being recommended by the Association of State Floodplain Managers. . . . 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. . . . Create floodplain and storage mitigation banks to compensate for the thousands of small projects that the city of Houston (and other municipalities) grants permits for that are not otherwise required to provide on-site mitigation for increased runoff or floodplain fill. . . . 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.

>>> For the full article, "Controlling Runoff," go to the *Chronicle* website at <http://www.chron.com>.

Residential Development and Floodplains (cont.)

The fiscal impacts of urban growth boundaries have been extensively studied. Those investigations have shown, in general, that the effect of restricting the supply of land available for development is an increase in the price of land and housing (Fishel, 1990). This increase in housing prices may be explained by an unmet demand for land and housing or by an improved quality of life that makes living within the boundary more attractive to consumers (Dawkins and Nelson, 2002; Downs, 1994). Recent research suggests that the improved quality of life may be related to per capita expenditures on such things as street maintenance, parks, or libraries, which are higher in cities with urban growth boundaries than in similar cities without them (Landis et al., 2002).

Another result of urban growth boundaries may be increased development in hazardous locations, such as floodplains. There is evidence from around the world that in places where growth containment has been practiced, development does occur in locations vulner-

able to disaster (Burby et al., 2000). That impact is the focus of this discussion.

Development Location Theory

Developers consider many different factors when selecting a location for a new project. Development location theory explains that locations are selected based upon factors that contribute to a developer's profit, namely cost factors and revenue factors. Developers prefer locations with ready access to public roads, water, and sewer services to minimize the cost of extending those services to the site. Developers like sites that do not have rocks, trees, steep slopes, or toxic waste, for example, because such features add to the cost of preparing a site for development.

Developers look for sites that have features that will appeal to consumers. With amenities such as a good view, a safe neighborhood with good public schools, or

[continued on page 5]

Residential Development and Floodplains (cont.)

ready access to open space, homes may be sold for a higher price, which increases revenue. Ideal sites for residential development are a considerable distance from sources of noise, busy intersections, overhead power lines, or other disamenities that will require the developer to price the houses somewhat lower.

In areas without urban growth boundaries, developers generally move outward from the periphery of an urbanized area to find sites that meet their selection criteria. In areas with growth boundaries, sites that meet selection criteria are used first, but after some time the only vacant sites remaining within a boundary are those that have features that will result in increased costs and/or decreased developer revenue. Nevertheless, if a developer wants to build a project in that area, one of these less-than-ideal locations must be selected. Some of these sites that have been passed over in earlier phases of development may be floodplain locations. For this research, I hypothesized that urban growth boundaries encourage developers to select floodplain locations for their projects.

Research Method

A qualitative research design was used to answer the question of how urban growth boundaries affect the development location decisions of residential developers. Interview data were gathered systematically from 36 different residential developers in the Portland, Oregon; Denver, Colorado; and Atlanta, Georgia, areas. These areas were selected because they provide variation in growth boundary strategies. In the Portland area, every urbanized area, including those nearby in the state of Washington, is surrounded by a growth boundary. In the Denver area, some jurisdictions have voluntarily adopted growth boundaries. No urbanized areas near Atlanta have implemented growth boundaries as part of their growth management strategies. However, all three of these areas have experienced a high rate of growth and of residential development in recent years.

The set of development firms that might participate in the study was identified by asking local planners, real estate agents, and representatives of the National Association of Home Builders who the active developers in the area were and by consulting the real estate sections

of local newspapers. In this way, a list was made of about 30 active development firms in each area.

A sample of developers was drawn for each area. The samples consist of developers whom I was able to contact by telephone, who were willing to participate in an hour-long interview, and who were able to schedule time for an interview. I conducted 11 interviews in Portland, 13 in Denver, and 12 in Atlanta. The study participants brought to the interviews an average of 19.3 years of experience in taking raw land through the residential development process. During the last several interviews in each geographic area, no novel perspectives or insights were offered relative to the research question, which indicates that the sample size was adequate for the research (Miller and Salkind, 2002).

Data were collected using semi-structured interviews, which allowed developers to include stories or issues that they thought would be informative and allowed me to ask follow-up questions to clarify responses. The data were analyzed using a multiple-coding method to determine the responses that related to development on floodplains. The purpose of coding data is to reduce large amounts of data into smaller analytic units so that key themes and patterns become apparent. The data are rich and reveal a great deal about decision-making in the residential development industry. However, this discussion is limited to findings relevant to development on parcels of land that are partially or fully in a floodplain. Findings are corroborated by additional data collected in each geographical area from builders and planners who work closely with developers.

Research Findings

The following table displays the cost and revenue factors that developers say are important in making decisions about locating new projects on land in a floodplain, and these factors are explained in the following paragraphs.

Cost Factors

During the development process, delays may be caused by the need to remap floodplain areas, according to developers in the Portland, Denver, and Atlanta study areas. Any delay in the development process increases

[continued on page 9]

Cost Factors

- Delay due to and expense of remapping, elevating, improving channel
- Cost of removing trees
- Loss of developable area due to stream buffers
- Cost of creating greenspace

Revenue Factors

- Amenity value of privacy
 - Number of housing units
 - Density of housing units
-

Washington Report

LEGISLATIVE REPORT

A Busy Month of July

After the Fourth of July Recess, Congress began a period of almost frenetic activity to make as much progress as possible before the month-long August recess.

The House and Senate have both adjourned now and will next meet on September 2nd. The Senate adjourned a week later than the House, but the short session between the Fourth of July and the August recess was extremely busy on both floors and in committees.

The House made major progress during this period on markup and passage of appropriations bills. Eleven of the 13 regular appropriations bills have passed the House. The Senate made a substantial start on its work on the appropriations bills. Four of the bills have passed the Senate, but another five have been reported out of the Senate Appropriations Committee and can be expected to be taken up on the floor in September.

The July Congressional business included a wide variety of issues of concern to the public and included a number of matters of importance to floodplain managers. Legislation of particular interest includes:

- Passage by both the House and Senate of the Homeland Security Fiscal Year 2004 appropriations bill;
- Repetitive flood loss bill marked up in the House Financial Services Committee;
- Water Resources Development Act marked up in the House Committee on Transportation and Infrastructure;
- Supplemental appropriations for Disaster Relief passed by both the House and Senate; and
- Passage of Agriculture, Energy and Water, and Interior appropriations bills in the House and markups of these bills in the Senate Appropriations Committee. Passage of the VA-HUD bill in the House.

Department of Homeland Security Appropriations

Both the House (H.R. 2555; H.Rept. 108-169) and Senate (S.Rept. 108-86) bills have been passed and it is expected that a House-Senate conference to resolve differences between the two versions will take place in September. This is the first Homeland Security Appropriations bill, and the Federal Emergency Management Agency's funds are now part of that bill.

Map Modernization

Both the House- and Senate-passed bills include the requested \$200 million for the Flood Map Modernization Initiative and note that it is expected that the task will be completed in five years. Map modernization is, therefore, not a conference item and the final bill can be

expected to include the \$200 million. Language in the Senate report notes the importance of state priorities.

Pre-Disaster Mitigation Competitive Grant Program

The House bill includes \$180 million and the Senate bill provides \$150 million.

Hazard Mitigation Grant Program

Both the House and Senate bills specifically retain the HMGP, which had been slated for elimination in the President's budget request. It is retained, however, at 7.5% rather than the full 15% that is authorized.

Flood Mitigation Assistance

The budget request had compressed FMA and Pre-Disaster Mitigation into one flood mitigation account. The FMA appropriation was the usual \$20 million from the Flood Fund in both House and Senate, but the Senate created a separate account for Pre-Disaster Mitigation, clarifying the separate nature of the two programs.

Supplemental Appropriations

H.R. 2859 was passed in the House just before it adjourned and the Senate was left to pass it in its last week before adjournment. Because of the need to provide the emergency funds, that created an interesting political problem for the Senate which had been expected to add other funds, specifically for Americorps. With the House members out of town, no conference could take place so the Senate had to consider getting a bill that could be signed by the President promptly as opposed to insisting on the changes it wished to see in the bill. The Senate passed the bill, without amendment, on July 31, clearing it for action by the White House.

Other Appropriations

Parts of the following appropriations bills are of interest to floodplain managers; they can be read online:

- Agriculture (Natural Resources Conservation Service's Small Watersheds Program, etc.)
H.R. 2673; H.Rept. 108-193
S. 1427; S.Rept. 108-107
- Energy and Water (U.S. Army Corps of Engineers)
H.R. 2754; H.Rept. 108-212
S. 1424; S.Rept. 108-106
- Interior (National Park Service's Recreation, Trails and Conservation Assistance Program; U.S. Geological Survey)
H.R. 2691; H.Rept. 108-195
S. 1391; S.Rept. 108-89
- Veterans Affairs-Housing and Urban Development-Independent Agencies (Environmental Protection Agency)
H.R. 2861; H.Rept. 108-235

Repetitive Flood Losses

At long last, the House Financial Services Committee held a markup session on the repetitive loss bill introduced by Doug Bereuter (R-NE) and Earl Blumenauer (D-OR) (H.R. 253). A hearing was held April 1 on that bill and on one introduced by Richard Baker (R-LA). Previously, ASFPM Chair Chad Berginnis had testified and pointed out aspects of both bills of interest to ASFPM members. The testimony is on the ASFPM website. The ASFPM had testified during the last Congress as well on the repetitive loss matter.

After the April 1 hearing, many discussions took place among Bereuter, Blumenauer, Baker, and their staffs in an effort to develop a bill that would reflect the concerns and interests of all three. A Bereuter/Blumenauer substitute bill was developed that included a provision listing several areas that would be considered valid for filing an appeal. This was a compromise approach since Baker's bill had provided exemptions for policyholders falling into a number of broad categories. That would have meant that no offer of mitigation assistance could even be made to those property owners, simply leaving them floodprone. It made other adjustments as well.

Just a few days before the markup, Baker also circulated a draft substitute. This bill was considerably simpler and, particularly for that reason, was interesting, but the work done to reflect Baker's concerns in the primary legislative vehicle (H.R. 253) and the lack of time to fully study the implications of the new, simpler approach resulted in the Committee's acting favorably on H.R. 253 after accepting a few amendments. The text of those is available through the House Financial Services Committee website.

The Committee Report is being written during the recess and it is expected that the bill will come to the House floor early in September. According to staff of the Senate Banking Committee, it is very likely that that committee will consider the measure in September.

Water Resources Development Act

The House Transportation and Infrastructure Committee marked up a WRDA 2003 bill on July 23. Amendments providing for peer review, mitigation improvements, and changes to the *Principles and Guidelines* (P&G) were accepted. The bill provides for some 300 projects at a cost of about \$5 billion and it was noted by the Chairman that those projects accommodate the interests of 266 Members of Congress.

During markup, provisions that would have significantly weakened the National Environmental Policy Act requirements through streamlining were somewhat reduced in significance.

Chairman Don Young (R-AK) hopes to bring the bill to the House floor in September or October. The Committee Report is not yet available.

The peer review amendment accepted included a clause that makes the review advisory although it does require that the Secretary or Chief make direct responses to all recommendations. The Secretary or Chief can use

economic, technical, or environmental issues to indicate that no peer review is necessary.

The mitigation improvement amendment would provide for mitigation concurrent with construction and also provides for monitoring and evaluation.

The P&G amendment only provides for flexibility between national economic development and national ecosystem restoration projects. Earl Blumenauer (D-OR) had developed a more substantive amendment to the P&G and he advised the committee that he would continue to work on the issue. The National Academy of Sciences is expected to release a report in September that addresses the P&G, which are now 20 years old.

Coming Up in September

- Since the Disaster Mitigation Act of 2000 expires on December 31, there likely will be some action in September toward reauthorization. A coalition of interested groups, including the ASFPM, has formed to call attention to the need for reauthorization.
- The House will be wrapping up its work on appropriations bills and the Senate will be bringing many to the floor. Conferences will be held between the House and Senate to resolve differences. Unlike last year, Congress is moving expeditiously to complete action on many of the appropriations bills before the new fiscal year begins on October 1.
- WRDA 2003 and the repetitive loss bills will be taken up on the House floor. In the Senate, committee action on the repetitive loss bill is likely.

—Meredith R. Inderfurth, *Washington Liaison*
Rebecca Quinn, *Legislative Officer*

All referenced legislation and committee reports can be viewed at <http://thomas.loc.gov>.

FEDERAL RESERVE BOARD ENFORCES MANDATORY PURCHASE

So far in 2003, the Federal Reserve Board has levied nine monetary penalties against banks in seven states in connection with alleged violations of the Board's regulations implementing the mandatory purchase requirement under the National Flood Insurance Act (42 U.S.C. 4012a).

In these cases the banks, without admitting to any allegations, consent to the issuance of an Order of Assessment of a Civil Money Penalty. The penalties typically require the banks to pay a fine (in 2003 these have ranged from \$1,500 to \$17,150), which is then remitted to the Federal Emergency Management Agency for deposit into the National Flood Mitigation Fund.

According to the information on the Reserve Board's website, the number of such penalties is up sharply from previous years. A list of the Board's enforcement actions since 1997, and orders implementing them, are posted at <http://www.federalreserve.gov/newsevents.htm>.

State and Local Report

NORTH CAROLINA TO USE NEW MITIGATION APPROACH

In July the North Carolina departments of Transportation and Environment and Natural Resources entered into an agreement with the U.S. Army Corps of Engineers creating a new multi-agency environmental initiative designed to enhance habitat and protect streams and water quality while reducing road construction delays. The new Ecosystem Enhancement Program, the first of its kind in the nation, will reshape the way the state offsets or alleviates the unavoidable impacts of highway construction on streams and wetlands. Instead of performing foot-by-foot stream mitigation and acre-by-acre wetland mitigation, the involved entities will be developing comprehensive plans to improve water quality and habitat protection for entire river basins. The goal is larger scale and accelerated ecosystem enhancement for the entire state. It is hoped that the approach will become a national model for compensatory mitigation.

> > > For more, see http://www.enr.state.nc.us/newsrels/20030722_wetlandagreement.html.

LOCAL RESTORATION GRANTS AWARDED

The National Association of Counties, the National Fish and Wildlife Foundation, and the Wildlife Habitat Council have awarded nearly \$600,000 to 56 community-led conservation projects throughout the country. The Five Star Restoration Grant Program will provide \$5,000 to \$15,000 grants to community-based partnerships for support of wetland and streamside restoration projects. A list of projects receiving grants can be viewed at <http://www.epa.gov/owow/wetlands/restore/5star/03grants.html>.

VIRGINIA NEIGHBORHOODS WORK TO RESTORE STREAM

A partnership of local governments, citizen groups, and the private sector has developed a plan to restore an impaired urban watershed, one home at a time. Four Mile Run drains a 20-square-mile urban watershed just south of Washington, D.C. The stream runs through Arlington County and the cities of Alexandria and Falls Church and is home to more than 180,000 residents. The watershed's high population density, development, and paving have created typical urban stream issues, including the replacement of headwater streams by storm drains, an unstable flow regime, blown-out stream channels, litter problems, and high bacteria counts. Some sections of the stream have been artificially channelized for flood control and reinforced for protection of private

property, but fortunately a wooded stream-valley park system preserves much of the stream with its natural rugged charm.

The recent completion of a study on bacterial impairment of the stream, the pledge of \$1 million from the federal government to improve the aesthetics and ecology of a bare flood control channel built in the 1970s, and a locally produced documentary about the history and future of Four Mile Run combined to generate a citizen-based approach to restoration.

A coalition of seven organizations and governments will use, among other strategies, a structured program designed to help small groups of households work together to adopt environmentally sustainable lifestyle practices. In the Four Mile Run watershed, nine "eco-teams" will be created of five or six households each. They will meet over the course of a year and, with a trained volunteer coach, select practical actions to reduce nonpoint source pollution and improve water quality. They will then share information with their neighbors via word of mouth and by modeling positive behaviors which, it is hoped, will spread increased environmental sustainability throughout nearby neighborhoods.

The coalition also is educating the public through other means, including placing road signs where residents enter the watershed and cross a stream; putting up educational signs at three popular stream access points; setting up a website; implementing a stream steward training program; organizing watershed-friendly landscaping and gardening seminars; offering mini-grants of \$500 as incentives to schools, businesses, or homeowners to develop watershed-friendly habitat on their property; and selecting some mini-grant recipients as demonstration gardens available for visits and tours.

>>> For more information, contact Elenor Hodges, Arlingtonians for a Clean Environment, 3308 S. Stafford St., Arlington, VA 22206; (703) 228-6427; office@arlingtonenvironment.org.

[from Nonpoint Source News-Notes, May 2003, p. 26]

Correction, please!

The last issue [*News & Views*, June 2003, p. 9] inaccurately listed the acronym for the Phoenixville Area Economic Development Corporation. It should have read "PAEDCO." PAEDCO is the non-profit group working toward the economic revitalization of Phoenixville, Pennsylvania. It provided the new site for the Doty Road Bridge which, as described in the article, was relocated by the New York District of the U.S. Army Corps of Engineers in order to preserve it as a floodplain-related cultural and historic resource.

Position Open at Hazards Center

The Natural Hazards Research and Applications Information Center at the University of Colorado in Boulder seeks a full-time professional research assistant to provide oversight for the activities of the Center. The position reports to the Center Director and, in cooperation with the director, oversees development of Center programs (including proposal writing), plans and coordinates the Center's annual workshop; maintains ongoing contacts with funding agencies; manages the Center's budget; supervises Center staff and administers day-to-day activities; and represents the Center at advisory committee meetings and national conferences. The position also administers the Center's Quick Response grant program; answers information requests from practitioners, researchers, and government officials; and provides reports on Center activities as needed.

A wide range of professional backgrounds and interests in the hazards field will be considered. The successful candidate will have a master's degree in a related discipline; will be knowledgeable about hazards-related policies, programs, research, and knowledge-transfer activities; and work well with the broad constituencies concerned with hazards and disasters. Salary commensurate with experience.

Review of candidates will begin on September 30, 2003 and continue until the position is filled. Send letter of application; resume; and names, addresses and telephone numbers of three references to Search Committee, Natural Hazards Center, Institute of Behavioral Science, University of Colorado, 482 UCB, Boulder, CO 80309-0482.

*The University of Colorado is committed to diversity and equality
in education and employment.*

Residential Development and Floodplains (cont.)

costs because, among other things, it increases the length of time during which financing charges are incurred. An additional cost is that of hiring engineers to study the area for remapping. If a parcel is in a floodplain, developers work to "remove" it from the floodplain because it is difficult to sell houses that will require flood insurance coverage. To remove land, developers may elevate the property, which entails the cost of purchasing fill materials and of the additional labor and time to properly fill a site, or they may do channel improvements, which is another cost. These activities also add delay to a project. One developer explained, "Mitigating a floodplain has become so cumbersome that it is not economically feasible."

Should a developer choose to mitigate a flood hazard by elevating the land or making channel improvements, these costs are typically shared among all of the housing units in the project. However, with urban growth boundaries, because the size of parcels available for development tends to be relatively small, a typical project consists of only 25 housing units. When the costs of mitigating a flood hazard are shared among such a small number of homes, the price of each home is significantly increased, and it takes longer to sell them.

If trees or tree stumps must be removed from property before it can be prepared for housing, this is an additional cost to a developer. Tree removal can be very expensive in a floodplain, because the trees may be quite large due to plentiful water and because they may not have been removed over the years because of frequent wet conditions. In communities in the Atlanta area, tree removal is especially costly because of ordinances that require payment of a fee when trees are removed. The fee is based on the size of the tree.

Streams or rivers run through floodplains, of course, and regulations that prohibit development within a certain distance from the stream banks (to protect water quality or serve other purposes) often preclude the possibility of developing on floodplains, according to developers. Such buffer zone regulations also deter developers from purchasing land near streams because so much of the parcel is undevelopable, even if it is not in a floodplain.

A final consideration mentioned by developers is the cost of creating greenspace. They say that they prefer not to disturb floodplain land but to use it as a project amenity by providing trails, fencing, or plantings, and this is an additional expense.

[concluded on page 10]

Residential Development and Floodplains (cont.)

Revenue Factors

On the other hand, creating greenspace in a floodplain may also add to a developer's revenue because consumers perceive greenspace as an amenity. Floodplain land adjacent to the floodway, where development is prohibited, offers a consumer an additional opportunity for privacy, and privacy is a highly sought amenity, especially in the Portland area where new, single-family detached housing units are typically located only six feet apart.

If a parcel is partly located in a floodplain and if a developer prefers not to develop on the floodplain then the parcel is not attractive because fewer houses may be built on it than on a similar-sized, non-floodplain parcel. As the number of housing units decreases, revenue decreases. In addition, the cost of land per house may be unusually high because developers say that landowners typically want the same price per unit area of land whether it does or does not include a floodplain.

Another factor that reportedly affects developer revenue is housing density. In the Portland area, communities have adopted minimum density requirements. Generally, with greater density, more houses can be built on a parcel and developer revenue increases. However, to place the minimum number of housing units on a parcel that includes floodplain land while simultaneously providing housing that offers sufficient open space and privacy to appeal to consumers is very difficult, according to developers, and they prefer to avoid this situation.

Summary

A number of different factors contribute to the decision about development on floodplains. According to developers, cost factors include the need to remap the parcel, elevate lots, improve waterway channels, remove trees, comply with stream buffer regulations, or create greenspace. Each of these costs makes development on floodplain land less desirable to residential developers. Revenue factors, namely the smaller number of housing units that may be placed on a parcel that includes floodplain land, and density requirements that may result in an unappealing subdivision or housing project, also deter developers from selecting parcels with floodplain land. The two factors identified by developers that may encourage residential development on the floodplain are that houses may bring a higher price because of the amenity value of being located near permanent greenspace in the floodplain and the amenity value of the additional privacy afforded by greenspace in the floodplain.

The data lead to the conclusion that urban growth boundaries do not necessarily encourage development on floodplains, contrary to what was hypothesized at the outset of this project. Even when the supply of devel-

opable land is restricted by urban growth boundaries, developers still avoid floodplain land for two reasons. First, with growth boundaries, the size of vacant parcels tends to be so small that there are too few houses to absorb the costs of mitigating the flood hazard and still be sold at a price that will attract buyers. Second, the minimum density requirements that frequently accompany growth boundary policies make it hard to produce an attractive product on a parcel of land that is partly undevelopable because of the flood hazard.

Implications

To enhance the more traditional flood damage prevention land use regulations, planners and policymakers might consider adopting other types of laws and policies that discourage developers from selecting floodplain land for new residential projects. Stream buffer regulations, for example, protect water quality but they also tend to push development away from floodplain land, for reasons noted above. Tree ordinances, which penalize developers for removing large trees, are designed to protect air quality but also make it more costly to develop on floodplains, thus deterring development there.

From this study, it is not evident that greenspace requirements are influential in the decision to use a floodplain parcel for development. Developers like to use floodplain land as greenspace when a parcel includes a small amount of floodplain. In this way, the floodplain becomes a project amenity and the developer avoids the cost of mitigating the flood hazard. However, regulations that mandate the inclusion of greenspace in a project appear to neither encourage nor discourage development from occurring on floodplains.

The findings from this study have raised two additional issues for future investigation. First, it would be useful to examine the degree to which minimum density or tree protection regulations deter development from floodplains. A second, broader endeavor would be to learn the degree to which communities adopt regulations designed to address multiple threats, hazards, and community goals simultaneously.

References

- Burby, R., A. Nelson, D. Parker, and J. Handmer. 2000. *Urban Containment Policy and Disaster: Is There a Connection?* Chapel Hill, NC: Department of City and Regional Planning, University of North Carolina.
- Dawkins, C., and A. Nelson. 2002. "Urban Containment Policies and Housing Prices: An International Comparison with Implications for Future Research." *Land Use Policy* 19:1-12.
- Downs, A. 1994. *New Visions for Metropolitan America*. Washington D.C.: The Brookings Institution.

Fishel, W. 1990. *Do Growth Controls Matter? A Review of Empirical Evidence on the Effectiveness and Efficiency of Local Government Land Use Regulation*. Cambridge, MA: Lincoln Institute of Land Policy.

Landis, J., L. Deng, and M. Reilly. 2002. *Growth Management Revisited: A Reassessment of its Efficacy, Price Effects and Impacts on Metropolitan Growth Patterns*. Institute of Urban

and Regional Development Working Paper 2002-02. Berkeley, CA: University of California.

Miller, D., Salkind, N. 2002. *Handbook of Research Design and Social Measurement*, 6th edition. Thousand Oaks, CA: Sage Publications.

Oregon Revised Statutes. Available at <http://landru.leg.state.or.us/ors/197.html>.

Publications, Software, AV & the Web

The World Meteorological Organization and the International Center for Integrated Mountain Development co-sponsor a website intended to facilitate the sharing and dissemination of flood-related information throughout the Hindu Kush–Himalayan region, where rivers sustain the livelihoods of over a billion people, and monsoon rains and riverine flooding are a recurring risk. Check it out at <http://www.southasianfloods.org/>.

The Oklahoma Water Resources Board has an updated and revamped website, with links to pages for the floodplain management program, dam safety, flash flood guidance, permitting information, hazard mitigation, the Oklahoma Floodplain Managers Association, and more. Visit at <http://www.owrb.state.ok.us/hazard/index.php>.

An Assessment of Flood Risk Management in Canada provides some insight into the current practice of flood management in Canada and offers recommendations to address shortcomings. The paper describes the nature of floods and flood damage, the national Flood Damage Reduction Program and accompanying regulations, efforts to distribute losses through disaster relief and insurance, and two recent floods in the Saguenay Valley and the Red River. The authors conclude that a lack of commitment by some or all levels of governments has been associated with increasing flood losses. Future programs will have to better involve municipal governments that often have been overlooked in the formulation of past programs. Consideration should be given to the use of decision support systems and improving flood response and recovery programs. Collaboration with the private sector, particularly the insurance industry, will be essential. Finally, reducing flood risks will require greater personal acceptance of responsibility by those living in floodplains. Dan Shrubsole, Greg Brooks, Robert Halliday, Emdad Haque, Ashij Kumar, Jacinthe Lacroix, Harun Rasid, Jean Rousselle, and Slobodan Simonovic. 2003. 71 pp. Institute for Catastrophic Loss Reduction Research Paper Series No. 28. Available for download from <http://iclr.org/ShowDown.cfm?AccDate=%26%20238L%29YQ1X%0A>.

The Gulf of Maine Council on the Marine Environment has added to its website a searchable directory of over 600 non-governmental organizations with interest in the watersheds and marine issues of the Gulf of Maine (bordering Maine, New Hampshire, Massachusetts, New Brunswick, and Nova Scotia). The database is searchable by watershed, jurisdiction, issue, staff, or publications. The directory can be found at http://www.gulfofmaine.org/ngo_directory/.

Beach Nourishment: A Guide for Local Governments is a website sponsored by the National Oceanic and Atmospheric Administration's Coastal Services Center as an information resource on all aspects of beach nourishment. Consolidated into one site, and presented in nontechnical language, are descriptions of coastal geology, coastal ecology, and legal and regulatory requirements; social and economic factors; information on federal project cost sharing; a "professional dialog" featuring input from experts Orrin Pilkey, Andy Coburn, and Howard Marlowe; and helpful case studies from coastal communities facing tough beach nourishment decisions. Visit at <http://www3.csc.noaa.gov/beachnourishment/>.

A grant from the Federal Emergency Management Agency's Flood Mitigation Assistance Program helped a Pensacola Beach, Florida, couple build a new home on the site of their previous 1970s house, which had been repeatedly damaged by hurricanes and coastal storms. Not contemplating the usual demolition/rebuild project, the couple instead had two architects design a monolithic dome. Because of its shape, design features, and construction techniques and materials, the dome home is expected to resist damage from storm surge, wind forces, and flying debris. The house was also built to be environmentally friendly. Step-by-step descriptions of the construction of the house, along with lots of photographs, can be viewed on the website at <http://www.domeofahome.com/default.asp>.

“Precautionary Flood Protection—An International Exchange of Experiences” was a workshop held in Bonn, Germany, last spring and attended by water directors and experts of the European Union and newly admitted states. The aim of the gathering was to promote European cooperation on flood protection. The papers presented at the meeting are now online at <http://www.ecologic.de/floods2003> or <http://www.ecologic.de/floods2003/downloads/floodsreport.pdf>.

“Bad Weather? Then Sue the Weatherman! Part I: Legal Liability for Public Sector Forecasts” and “Part II: Legal Liability for Private Sector Forecasts” aim to familiarize the reader with some of the legal issues involved when weather forecasts are the subject of a lawsuit, which they can be when users believe that they have relied on inaccurate or inadequate forecasts. In such situations, what liability, if any, arises under the U.S. legal system? *Part I* discusses several court decisions resolving lawsuits against federal or state governments based on inaccurate or inadequate weather-related forecasts or failure to issue weather warnings that led to injury or loss. In general, most claims against the federal government based on weather forecasting or failure to warn about weather conditions have been resolved in favor of the government on the basis of its immunity under the Federal Tort Claims Act. State government immunity depends on the provisions of a state’s immunity statute and the state’s interpretation of it. *Part II* addresses claims against private sector weather forecasters. Roberta Klein and Roger A. Pielke, Jr. *Bulletin of the American Meteorological Society*, Vol. 83, No. 12, pp. 1791–1807. Can be downloaded at <http://ams.allenpress.com/amsonline>.
[Excerpted from the *Natural Hazards Observer*, July 2003, p. 17]

Flood Problem and Management in South Asia focuses on both the hazard and the vulnerability aspects of floods in South Asia using a multidisciplinary approach. It examines the characteristics of the flood problem as well as its management aspects. Contributors suggest that effective solutions go beyond structural measures and require major restructuring of both the legal systems and institutions responsible for floodplain management. Topics include the hydrometeorological aspects of floods in India, recent flooding and management strategies in Bangladesh, long-term mitigation strategies, floodplain residents’ preferences for water level management in flood control projects in Bangladesh, glacial lake outbursts, regional cooperation, and the economics of flood protection in India. M. Monirul Qader Mirza, Ajaya Dixit, and Ainun Nishat, editors. 2002. 215 pp. \$83.00. Order from Kluwer Academic Publishers, 101 Philip Dr., Norwell, MA 02061; (781) 871-6600; <http://www.wkap.nl>.
[Excerpted from the *Natural Hazards Observer*, July 2003, p. 18]

Stream Restoration: A Natural Channel Design Handbook is the North Carolina Stream Restoration Institute's hot-off-the-press official guide to stream restoration. The book compiles information about stream survey procedures, classification, restoration options, restoration design procedures, vegetation, erosion control, and much more. Barbara A. Doll, Garry L. Grabow, Karen R. Hall, James Halley, William A. Harman, Gregory D. Jennings, and Dani E. Wise. 2003. 128 pp. Available for \$35 (includes shipping and handling) and can be ordered or downloaded as a pdf file from http://www.ncsu.edu/sri/stream_rest_guidebook/guidebook.html.

Effects of Riprap on Riverine and Riparian Ecosystems was initiated under the Wetlands Regulatory Assistance Program to develop guidelines for the evaluation of the environmental impacts and benefits of riprap. The first step in the research project was the formulation of an annotated bibliography of related publications that could serve as a basis for regional and site-specific evaluations, and that characterizes the current state of knowledge on this subject. This document presents the results of the literature review. Citations are presented, with an annotation summarizing the study findings. J.C. Fischenich. 2003. ERDC/EL TR-03-4, U.S. Army Research and Development Center, Vicksburg, Mississippi. The bibliography is available for download at <http://www.wes.army.mil/el/wrap/techtran.html>.

Geomorphologic Impacts of Culvert Replacement and Removal: Avoiding Channel Incision, although written and intended to minimize impacts to threatened and endangered species, includes good common-sense advice for floodplain managers, too. The guidelines are used by the U.S. Fish and Wildlife Service’s Oregon Fish and Wildlife Office when implementing culvert replacement and removal projects, and are recommended practices for entities involved in stream crossing activities. The guidelines assist with any culvert-related endangered species consultation requirements. Compliance with the guidelines helps minimize or avoid impacts during project construction, and also improve long-term benefits to listed species. Janine Castro. 2003. 19 pp. The full guidelines can be downloaded at <http://pacific.fws.gov/jobs/orojitw/document/pdf/guidelines/culvert-guidelines.pdf>.

The Office of Scientific and Technical Information of the U.S. Department of Energy has a new website incorporating several ground-breaking web search products that give access to all three main vehicles by which scientists and engineers communicate their findings: gray literature, preprints, and journal literature. This is reportedly the first web service that harvests information from the so-called “deep web.” Its new search engine passes the user’s query on to the local search engines, thereby accessing the underlying content of entire multiple databases, where millions of technical documents are “hidden” from standard web crawlers. The site features three modes of search: a taxonomy of websites based on discipline; a word search of web content; and a word search of the deep web. A great deal of non-DOE material is also included. Go to <http://www.osti.gov>.

The OSTI site described above also has a direct link to the new interagency website Science.gov. The principal federal science and technology agencies (the Departments of Commerce, Energy, Defense, and Agriculture; the National Science Foundation; the National Institutes of Health; the National Aeronautics and Space Administration; the Environmental Protection Agency; and the U.S. Geological Survey) have launched this ambitious web portal to make their nonmilitary, government-funded research results available to all (about 1700 agency websites and document databases). Despite its “science” name, it also provides access to vast amounts of technology development material. Users can search two kinds of information—selected websites and databases of technical reports, journal articles, and other published materials. They can be searched simultaneously or separately. Check it out at <http://www.science.gov>.

The Smart Growth Network’s online resource library includes a site that provides watershed managers with a new set of tools and techniques that can be used to meet regulatory and receiving water protection program goals for urban retrofits, re-development projects, and new development sites. The site was developed through a Cooperative Assistance Agreement with the U.S. Environmental Protection Agency Office of Water to provide guidance to local governments, planners, and engineers for developing, administering, and incorporating low-impact development into their aquatic resource protection programs. Low-impact development technology is an alternative comprehensive approach to stormwater management. It can be used to address a wide range of issues, including combined sewer overflows, National Pollutant Discharge Elimination System (NPDES) permits, total maximum daily load permits, nonpoint source program goals, and other water quality standards. To access the site, go to <http://www.lid-stormwater.net>.

Calendar

The Association of State Floodplain Managers maintains a list of flood-related meetings, conferences, and training at <http://www.floods.org/calendar.htm>.

August 27–29, 2003: FOURTH ANNUAL CONFERENCE OF THE OHIO FLOODPLAIN MANAGEMENT ASSOCIATION, Columbus, Ohio. Contact Christopher Thoms, Conference Chair, at (614) 265-6752 or see <http://www.dnr.state.oh.us/water/>.

September 6–13, 2003: TOWARD NATURAL FLOOD PROTECTION STRATEGIES, Warsaw, Poland. Sponsored by the Institute for Land Reclamation and Grasslands Farming. Contact ECOFLOOD, Department of Nature Protection in Rural Areas, Institute for Land Reclamation and Grassland Farming (IMUZ), Falenty, 05-090, Raszyn, Poland; +48-22-7200531; ecoflood@levis.sggw.waw.pl or see <http://www.imuz.edu.pl/imuz.htm>.

September 7–10, 2003: DAM SAFETY 2003, Minneapolis, Minnesota. Sponsored by the Association of State Dam Safety Officials. Contact ASDSO at 450 Old Vine St., 2nd Floor, Lexington, KY 40507; (859) 257-5140; fax: (859) 323-1958; info@damsafety.org or see <http://www.damsafety.org/conferences.cfm?content=annual>.

September 10–12, 2003: 7TH ANNUAL CONFERENCE OF THE INDIANA ASSOCIATION FOR FLOODPLAIN AND STORMWATER MANAGEMENT, Lake Monroe, Indiana. Contact Jon Stolz, INAFSM Vice President and 2003 Conference Chair, at jstolz@cbbel-in.com.

September 10–12, 2003: SAFER SUSTAINABLE COMMUNITIES: 2003 AUSTRALIAN DISASTERS CONFERENCE, Canberra, Australia. Sponsored by Emergency Management Australia. Contact EMA at P.O. Box 1020, Dickson, Australian Capital Territory 2602, Australia; 61 (0) 2 6232 4240; enquiry@einsteinandedison.com.au; http://www.ema.gov.au/fs-call_for_abstracts.html.

- September 14–17, 2003:** FLOODING AND ENVIRONMENTAL CHALLENGES FOR VENICE AND ITS LAGOON: STATE OF KNOWLEDGE 2003, Cambridge, England. Sponsored by Churchill College. Contact Venice 2003, Cambridge Coastal Research Unit, Department of Geography, University of Cambridge, Cambridge CB2 3EN U.K.; +44-1223-766578; venice2003@geog.cam.ac.uk; or see <http://ccru.geog.cam.ac.uk/events/venice2003>.
- September 15–19, 2003:** MANAGING FLOODPLAIN DEVELOPMENT THROUGH THE NATIONAL FLOOD INSURANCE PROGRAM, Emergency Management Institute, Emmitsburg, Maryland. Contact EMI at 1-800-238-3358; <http://www.fema.gov/emi/>.
- September 15–26, 2003:** FIFTH COURSE ON FLOOD RISK MANAGEMENT, Beijing, China. Sponsored by the Asian Disaster Preparedness Center. Contact ADPC, P.O. Box 4, Klong Luang, Pathumthani 12120, Thailand; (66-2) 516-5900-10; tedadpc@adpc.net or see <http://www.adpc.net/training/tefrm5.html>.
- September 17–20, 2003:** SUSTAINABILITY ISSUES OF ARIZONA'S REGIONAL WATERSHEDS, Mesa, Arizona. Sponsored by the Arizona Hydrological Society and others. Contact Pete Kroopnick at (602) 567-3850, PKroopnick@brwncaid.com or see <http://www.azhydrosoc.org>.
- September 22–26, 2003:** THE COMMUNITY RATING SYSTEM OF THE NATIONAL FLOOD INSURANCE PROGRAM, Emergency Management Institute, Emmitsburg, Maryland. Call 1-800-238-3358 or see <http://www.fema.gov/emi/>.
- September 28—October 3, 2003:** RESIDENTIAL COASTAL CONSTRUCTION, Emergency Management Institute, Emmitsburg, Maryland. Contact EMI at 1-800-238-3358 or see <http://www.fema.gov/emi/>.
- September 29—October 10, 2003:** HEALTHY WATERSHEDS: COMMUNITY-BASED PARTNERSHIP FOR ENVIRONMENTAL DECISION-MAKING, Shepherdstown, West Virginia. Sponsored by the U.S. Environmental Protection Agency and the Office of Personnel Management. Contact Phyllis O'Meara, (303) 671-1010; Theresa Trainor at (202) 566-1250, trainor.theresa@epa.gov or see <http://www.leadership.opm.gov>.
- October 5–9, 2003:** XI WORLD WATER CONGRESS: WATER RESOURCES MANAGEMENT IN THE 21ST CENTURY, Madrid, Spain. Sponsored by the International Water Resources Association (IWRA). Contact the XI Water Congress, Centro de Estudios Hidrograficos, Paseo Bajo Virgen del Puerto, 3, 280005, Madrid, Spain; mwater2003@cedex.es or see http://www.cedex.es/iwracongress2003/en/hoja2_en.htm.
- October 8–9, 2003:** FINANCING AND IMPLEMENTING STORMWATER MANAGEMENT PROGRAMS—PHASE II, Madison, Wisconsin. Sponsored by the College of Engineering, University of Wisconsin. Contact Patrick Eagan or Diane Lange at 1-800-462-0876; eagan@epd.engr.wisc.edu or custserv@epd.engr.wisc.edu or see <http://epdweb.engr.wisc.edu/onsite>.
- October 20–22, 2003:** THE PRACTICE OF RESTORING NATIVE ECOSYSTEMS, Nebraska City, Nebraska. Sponsored by the National Arbor Day Foundation and *Land & Water* magazine. Call (402) 474-5655 or 1-888-448-7337 or see <http://www.arborday.org/rneconference>.
- October 20–24, 2003:** LANDSCAPE SCALE WETLAND ASSESSMENT AND MANAGEMENT: ANNUAL CONFERENCE OF THE ASSOCIATION OF STATE WETLAND MANAGERS, Nashua, New Hampshire. See <http://aswm.org/calendar/2003am/>.
- October 21–24, 2003:** FLOOD WARNING SYSTEMS, TECHNOLOGIES AND PREPAREDNESS, FIFTH NATIONAL CONFERENCE OF THE NATIONAL HYDROLOGIC WARNING COUNCIL AND 14TH CONFERENCE OF THE SOUTHWESTERN ASSOCIATION OF ALERT SYSTEMS, Dallas, Texas. Contact Dan Miller at (913) 895-6032, dmiller@opkansas.org or Steve Waters at (602) 506-1501, sdw@mail.maricopa.gov, or see <http://www.alertsystems.org>.
- October 30–31, 2003:** ECOSYSTEMS: RESTORATION & CREATION: 30TH ANNUAL CONFERENCE, Tampa, Florida. Sponsored by Hillsborough Community College. See <http://www.hccfl.edu/depts/detp/eco-conf.html>.
- November 3–6, 2003:** ANNUAL WATER RESOURCES CONFERENCE, San Diego, California. Sponsored by the American Water Resources Association. See <http://www.awra.org/meetings/California2003/index.html>.
- November 5–6, 2003:** ANNUAL CONFERENCE OF THE NEW YORK STATE FLOODPLAIN AND STORMWATER MANAGERS ASSOCIATION. Contact Bill Nechamen at (518) 402-8146 or wsnecham@gw.dec.state.ny.us.
- November 5–8, 2003:** PROTECTING OUR LAKES' LEGACY: ANNUAL SYMPOSIUM OF THE NORTH AMERICAN LAKE MANAGEMENT SOCIETY, Mashantucket, Connecticut. See <http://www.nalms.org>.

- November 10–14, 2003:** 30TH INTERNATIONAL SYMPOSIUM ON REMOTE SENSING OF THE ENVIRONMENT, Honolulu, Hawaii. See <http://www.symposia.org>.
- November 12–13, 2003:** TAKING THE LEAD IN PROPERTY LOSS REDUCTION, Orlando, Florida. IBHS Annual Congress. Sponsored by the Institute for Business and Home Safety. Contact IBHS, 4775 E. Fowler Ave., Tampa, FL 33617; (813) 286-3400; <http://www.ibhs.org/congress/>.
- November 13-14, 2003:** SECOND ANNUAL CONFERENCE OF THE WISCONSIN ASSOCIATION FOR FLOODPLAIN, STORMWATER AND COASTAL MANAGEMENT, Wisconsin Dells, Wisconsin. Contact Dan Cook, Conference Chair, at (414) 266-1500, dan.cook@gasai.com, or Dave Fowler, Chair, WAFSCM at (414) 277-6368, dfowler@mmsd.com.
- November 15–19, 2003:** ANNUAL MEETING OF THE INTERNATIONAL ASSOCIATION OF EMERGENCY MANAGERS, Orlando, Florida. Contact IAEM, 111 Park Place, Falls Church, VA 22046; (703) 538-1795; fax: (703) 241-5603; info@iaem.com or see <http://www.iaem.com>.
- November 16–18, 2003:** THIRD NATIONAL TOTAL MAXIMUM DAILY LOAD SCIENCE AND POLICY CONFERENCE, Chicago, Illinois. Sponsored by the Water Environment Federation, Association of State and Interstate Water Pollution Control Administrators, U.S. Environmental Protection Agency, U.S. Geological Survey, and others. See <http://www.wef.org/pdffiles/TMDL03Call.pdf>.
- November 17–19, 2003:** RESTORING STREAMS, RIPARIAN AREAS, AND FLOODPLAINS IN THE SOUTHWEST: SECOND SOUTHWEST TRAINING WORKSHOP AND SYMPOSIUM, Socorro, New Mexico. Sponsored by the U.S. Environmental Protection Agency, the U.S. Bureau of Reclamation, U.S. Fish and Wildlife Service, Natural Resources Conservation Service, and others. Contact Jon Kusler at (518) 872-1804; aswm@aswm.org or see the call for papers at <http://www.aswm.org/calendar/southwest/index2003.htm>.
- February 16–20, 2004:** EROSION CONTROL '04 CONFERENCE, Philadelphia, Pennsylvania. Sponsored by the International Erosion Control Association. Contact IECA, P.O. Box 774904, Steamboat Springs, CO 80477; (970) 879-3010; ecinfo@ieca.org or see <http://www.ieca.org>.
- March 3–5, 2004:** PRACTICE, POLICY, AND NEW EMERGING MARKETS: 7TH NATIONAL MITIGATION BANKING CONFERENCE, New Orleans, Louisiana. Numerous public and private sponsors. Abstracts are due September 12, 2003. Contact 1-800-726-4853 or see <http://www.mitigationbankingconference.com>.
- March 31—April 4, 2004:** TWENTY-FIRST ANNUAL CONFERENCE OF THE LOUISIANA FLOODPLAIN MANAGEMENT ASSOCIATION, Hammond, Louisiana. Contact Rodney Smith at rocket@bayou.com or Alyson Rodriguez at arodriguez@l-55.com.
- May 16–21, 2004:** TWENTY-EIGHTH ANNUAL CONFERENCE OF THE ASSOCIATION OF STATE FLOODPLAIN MANAGERS, Biloxi, Mississippi. Contact the ASFPM Executive Office, 2809 Fish Hatchery Rd., Ste. 204, Madison, WI 53713-3120; (608) 274-0123; fax: (608) 274-0696; asfpm@floods.org or see <http://www.floods.org>.
- June 28–30, 2004:** RIPARIAN ECOSYSTEMS AND BUFFERS: MULTI-SCALE STRUCTURE, FUNCTION, AND MANAGEMENT, Olympic Valley, California. Sponsored by the American Water Resources Association. See <http://www.awra.org/meetings/Olympic2004/summer2004.doc>.
- July 11–14, 2004:** WATERSHED 2004, Dearborn, Michigan. Sponsored by the Water Environment Federation. See <http://www.wef.org/Conferences/>.
- November 1–4, 2004:** ANNUAL WATER RESOURCE CONFERENCE, Orlando, Florida. Sponsored by the American Water Resources Association. See <http://www.awra.org>.
- November 6–9, 2004:** ANNUAL CONFERENCE AND EXHIBIT OF THE INTERNATIONAL ASSOCIATION OF EMERGENCY MANAGERS, Dallas, Texas. Contact IAEM, 111 Park Place, Falls Church, VA 22046; (703) 538-1795; fax: (703) 241-5603; info@iaem.com or see <http://www.iaem.com>.
- June 12–17, 2005:** TWENTY-NINTH ANNUAL CONFERENCE OF THE ASSOCIATION OF STATE FLOODPLAIN MANAGERS, Madison, Wisconsin. Contact the ASFPM Executive Office, 2809 Fish Hatchery Rd., Ste. 204, Madison, WI 53713-3120; (608) 274-0123; fax: (608) 274-0696; asfpm@floods.org or see <http://www.floods.org>.



ASSOCIATION of STATE FLOODPLAIN MANAGERS

2809 Fish Hatchery Road, Suite 204

Madison, WI 53713

(608) 274-0123 fax: (608) 274-0696

asfpm@floods.org

<http://www.floods.org>

News & Views is published six times each year by the Association of State Floodplain Managers, Inc., and is paid for by membership dues.

Copyright ©2003 by the ASFPM. Reproduction with credit permitted.

Information and opinions contained herein do not necessarily reflect the views of the Board of Directors.

Items for publication and other editorial matters should be directed to:

Jacquelyn L. Monday
Editor, **News & Views**
1026 So. Johnson St.
Lakewood, CO 80226
(303) 985-3141 fax: 303-985-5181
email: jacki.JLM@comcast.net.

Deadline is the 18th day of odd-numbered months.

For address changes and member services, contact the ASFPM Executive Office at the address in the box.

**ASSOCIATION OF STATE FLOODPLAIN MANAGERS
BOARD OF DIRECTORS**

CHAIR

Chad Berginnis
Department of Natural Resources,
Division of Water
1939 Fountain Square, Bldg. E-3
Columbus, OH 43224
(614) 265-6715
fax: 614-447-9503
chad.berginnis@dnr.state.oh.us

SECRETARY

Pam Pogue
NFIP Coordinator
Rhode Island Emergency Management
Agency
645 New London Ave.
Cranston, RI 02920
(401) 946-9996
fax: 401-944-1891
pam.pogue@ri.ngb.army.mil

VICE CHAIR

Jason Donham
NFIP Coordinator
Arkansas Soil & Water
Conservation Commission
101 E. Capitol Ave., Ste. 350
Little Rock, AR 72201
(501) 682-3907
fax: 501-682-3991
jason.donham@mail.state.ar.us

TREASURER

William Nechamen
NFIP Coordinator
New York Dept. of Environmental
Conservation
625 Broadway, 4th Floor
Albany, NY 12233
(518) 402-8146
fax: 518-402-9029
wsnecham@gw.dec.state.ny.us

EXECUTIVE DIRECTOR

Larry Larson
ASFPM Executive Office
larry@floods.org