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## NCAFPM 2015 Annual Conference

**April 26-29 in New Bern, NC**

The North Carolina Association of Floodplain Managers (NCAFPM) invites you to our 2015 Annual Conference and Exhibition to be held Sunday, April 26 through Wednesday, April 29 at the Doubletree in New Bern. Registration is \$250 for NCAFPM members (\$295 for non-members). One day rates are also available. Registration fee

includes sessions and workshops, exhibitor's social, two lunches, conference social, break snacks, and conference giveaway. Register on the NCAFPM website: [ncafpm.org](http://ncafpm.org).

**Details and registration  
at [ncafpm.org](http://ncafpm.org).**

### Exhibits & Sponsorships

Thank you to the companies who have already sponsored this conference. See the website for information about exhibiting and our NEW sponsorship opportunities.

### Mitigation Starts with Yourself-ie

This year's theme is "Mitigation Starts with Yourself-ie" and anyone can get involved!! Post a selfie with a flood mitigation project on Facebook or Twitter using the hashtag #NCAFPM2015. Show your support and enthusiasm for flood mitigation! Check out the Twitter feed on our conference webpage for ideas!

### Golf Tournament

Our annual golf tournament will be held Sunday, April 26 at the Emerald Golf Club. There is a link on the conference page to sign up and pay.

### Silent Auction

Don't miss our second annual NCAFPM Silent Auction. Make sure you check out the items and place a bid!



*(continued on page 2)*

## From the Chairman's Desk



CYNTHIA FOX BARCKLOW, CFM  
NCAFPM CHAIRMAN

It is mid-March, and the seasons are changing! Snow has melted, flowers are blooming, and it seems that people's spirits are lifted.

For the past few weeks, my sister has been in the hospital recovering from surgery due to a ruptured appendix. She is on the mend and has been a complete trooper. During her stay, I have thought about hospital staff personalities and how their receptiveness and demeanor influence patient care. The doctors, nurses, and nursing assistants have all seemed proficient and competent, but I breathe easier when I leave her in the care of the ones who share a bit of themselves and become more human in their interactions. They each work the same amount of hours during their shifts, and will get paid the same whether they extend themselves or not. But the ones who are less mechanized in their duties, and who show excitement or disappointment in her progress, are those with whom we have felt more comfortable asking our questions and sharing more of our concerns, and honestly they have lifted our spirits.

Attitude affects outcomes in any work environment, particularly one where customers have the need to be served in areas where they may not have the knowledge to understand what steps are necessary to reach success. In carrying out our job responsibilities as floodplain managers we have opportunities to improve our interactions, to slow ourselves in our discussions with the public, and to share more of ourselves and our knowledge (i.e., to help) in the process.

Happy Spring NCAFPM, and may we each stay spirited, renewed, and committed to affecting the best outcomes through the careers we have chosen!

A handwritten signature in cursive script that reads "Cynthia".

## Annual Conference, from front HEC-HMS Training

One of the tracks being offered on Tuesday of the conference will be on HEC-HMS, a program developed by the US Army Corps of Engineers that helps simplify rainfall-runoff modeling and can be used to simulate discharges using several different techniques (SCS, Green and Ampt, Grid methods, etc.). This class is meant to serve as a beginner training for engineers and administrators who would like to know more about HEC-HMS. The class will consist of presentation instruction as well as hands-on exercises in building basic models

and running samples of more complex models. More information is on the conference page of the website.



## Local Flood Mitigation Project

We will be offering field visits to local flood mitigation projects. Transportation will be provided, but space is limited. Stay tuned for more details!

## CFM Exam

The Certified Floodplain Manager (CFM) Exam will be offered Wednesday, April 29. Application must be approved prior to taking the exam. Go to [ncafpm.org/CFM.html](http://ncafpm.org/CFM.html) for details.

## Registration

Registration is online at [ncafpm.org/annual\\_conf.html](http://ncafpm.org/annual_conf.html). ▲

# Introducing the Education & Outreach Committee

DREW BLACKWELL, CHAIR,  
EDUCATION & OUTREACH COMMITTEE

## Let's take a quick poll...

**How many of you regularly attend the Fall Floodplain Institute in western NC?**

I know that approximately 100-120 of you are nodding your heads yes.

**How many of you regularly attend the annual NCAFPM conference in the spring in eastern NC?**

I know that even more of you are nodding your heads yes. All told, upwards of 200.

### **How many of you have been involved with NCAFPM in another capacity other than one of our conferences?**

Uh-oh. This is the same place I found myself recently. I knew how great this chapter is, how knowledgeable the members are about the industry, and how passionate the floodplain managers are about protecting and serving their communities. The problem was I was only reminded of this once or twice a year at our conferences.

In July 2014, a proposal was introduced to the NCAFPM Board to increase the chapter's education and outreach efforts throughout the state. In any organization, it is important to regularly revisit missions and goals, and evaluate whether actions and decisions are consistent with those missions and goals. This proposal was specifically sought to making a more firm commitment to one of our chapter's goals, "Promoting public awareness of proper floodplain management." Expanding our outreach to the public can be done through strategic partnerships and local/regional events. For example, community events that promote environmental stewardship may be one opportunity where we can educate the public about proper floodplain management. Public engagement may be, but is not limited to: speaking opportunities, workshops, and/or the NCAFPM booth set up to distribute information.

In October 2014, the NCAFPM Board voted to adopt an Education and Outreach Committee. An *Education & Outreach Plan* was also adopted and here is a brief overview:

**Effective January 1, 2015.** In order to maintain activities toward the committee goals, regular reporting and participation will be tracked. This will serve to continue to keep the NCAFPM as a visible leader in public awareness of proper floodplain management as well as encourage new and existing members to actively participate in the organization. The reporting and tracking will be managed by the Education and Outreach committee chair.

The committee chair shall:

- Research available resources that will facilitate the committee mission (storm-water/floodplain simulator, partnership opportunities, ASFPM resources for chapters, etc);
- Receive requests to hold education/outreach activities and present to the board for approval;
- Monitor and assist in the coordination of regional education and outreach activities;
- Prepare an annual report of accomplishments to present to the Board and at the annual membership meeting at the spring conference.

Regional representatives shall:

- Distribute the *Education & Outreach Plan* and encourage members in their region



### **Education and Outreach, from page 3**

to submit potential ideas/activities to them;

- Ensure a minimum of three (3) regions will participate in an Education and Outreach activity in a given calendar year
- Submit an Education and Outreach Request Form to the committee chair directly or on behalf of a member within their region

### **Activities**

Education and Outreach activities can come in various formats, including but not limited to:

- speaking opportunities
- workshops
- creating literature on the behalf of the NCAFPM (this may also include an exhibition display that members may use to fulfill Education and Outreach obligations)
- managing a display booth at a community event
- public/private partnerships

**The Education and Outreach Committee is looking for members that are excited to educate the public on sound floodplain management in their community and region by hosting any of the activities listed above or others not mentioned.**

A tool that NCAFPM has very recently acquired that may be added to the activities above is the use of Ward's Flood Model. Mark Walton (retired NOAA) and Outreach Process Partners, LLC (OPP) announced in January that the NCAFPM was the winner of this year's Flood Risk Education in Schools campaign. The overall mission of this campaign is to help children in recently flooded areas understand what happened through hands-on play so they can begin to process the event and heal from the trauma of flooding.

NCAFPM has received a Ward's Flood Model and custom case for use in flood risk education. Our members will be able to engage with the public on our Association's missions and goals by using this ready-to-use tool that visually demonstrates the impact that our built environment can have on flooding events. NCAFPM was selected because:

- We will cover an area that is flood prone and has few models available.
- We have been active on our Flood Risk Education Facebook page.
- We have an active Education and Outreach Committee.
- Our application was well written and thorough, and included a training plan that targets inner-city schools.

The NCAFPM Education & Outreach Committee is excited to conduct these activities that will promote public awareness of proper floodplain management. If you are interested in joining the Education & Outreach Committee, please contact Drew Blackwell at [andrew.blackwell@aecom.com](mailto:andrew.blackwell@aecom.com) and let's discuss ways to get our organization more involved throughout the state! ▲



Look for the flood model debut at our annual conference in New Bern!

## Investments in Remote-Controlled Bathymetric Survey Expedite Field Work and Improve Safety

DEAN R. GOODISON, PE, SENIOR PROJECT MANAGER, WATER RESOURCES  
GREG A. GARNER, RLS, SENIOR GEOMATICIST III, NATIONAL GEOMATICS

It seems that as technology surges run their course, it's hard to imagine the next big breakthrough. But time and time again we have seen these breakthroughs, and with each one comes new opportunity to deliver a more accurate service, expand the traditional scope, go to places previously unreachable, and better communicate the results through advanced visualization. And that's the way it is with technology in the floodplain mapping business and, in particular, the survey and mapping disciplines.

While the cost of traditional survey data-collection methods has deterred or, at best, limited the scope being offered to communities, a number of technological developments have allowed the floodplain mapping industry to deliver more, with greater accuracy, and for less. GPS service, total station, 3D laser scanners, LiDAR, and drones represent a handful of advancements to hit the survey and mapping industry over the last few decades. (With little effort we can easily imagine the vast new frontiers that drone technology will soon bring to the mapping world!)

One modern device that has quickly proved its value to Atkins engineers and scientists is the Z-Boat, manufactured by Teledyne Oceanscience. This hand-launched, remote-controlled hydrographic survey craft weighs in at less than 70 pounds. Though its primary use is for bathymetric survey, the craft can be equipped to adapt to other data collection needs such as stream velocity and water quality studies.



Atkins has employed the Z-Boat for several applications, with better-than-expected results each time. The benefits gained have helped us redefine our approach to survey and mapping as well as turn bottom-line savings into additional scope opportunities for our clients. In the floodplain mapping business, one recent project yielded a number of advantages. Atkins was scoped to update and expand the floodplain mapping for the Upper Rogue River watershed. Located in Jackson County, Oregon, this RiskMAP study included 34 miles of detailed studies that would require survey. The biggest challenge was obtaining channel section data in streams that were difficult to access and too dangerous to wade. Due to the high gradient and rugged nature of the stream corridor, launching a traditional hydrographic survey boat was not possible.

Atkins' geomatics team quickly identified the Z-Boat as the appropriate device for this application. Beginning at a position above the uppermost limits, the Atkins crew put in the river with a raft and the Z-Boat in tow, floating downstream to the point of survey origin. Once there, the crew set up on the shore and deployed the Z-Boat, controlling its orientation remotely from the shore. At no point was a surveyor required to wade into the water to collect data, thereby avoiding the significant safety risk associated with this rugged and hazardous stream.

In all, 25 miles of in-stream survey using the Z-Boat was completed in a fraction of the

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**North Carolina Association of  
Floodplain Managers  
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2014-2015**

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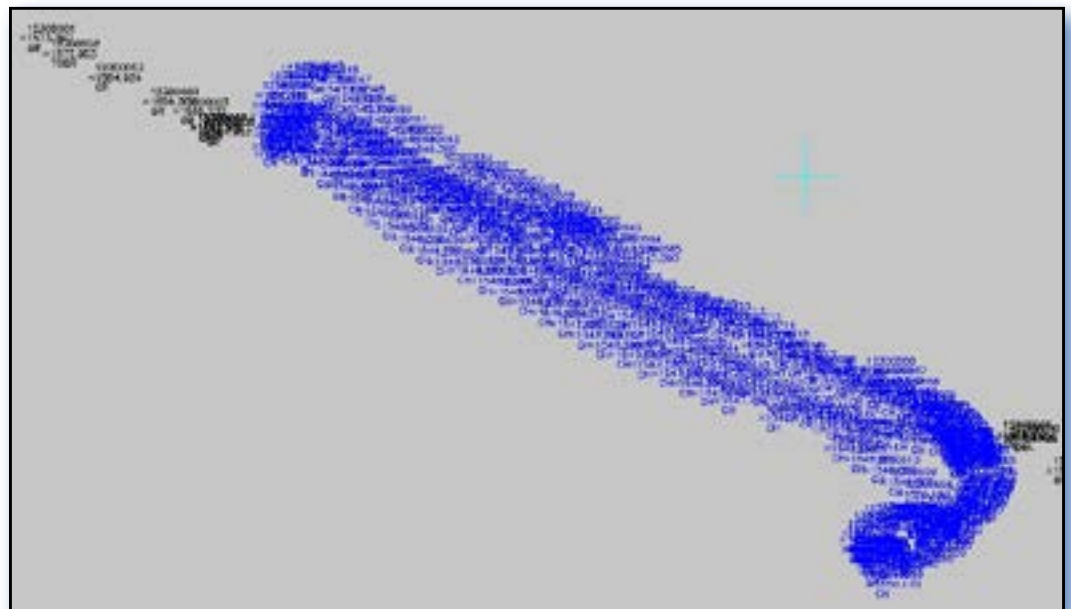
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**Remote-Controlled Bathymetric Survey, from page 5**

time it would have taken through a more traditional manner, and the effort was accomplished without the related safety risk to surveyors. Further, the density of bathymetric data points provided greater channel definition than could otherwise have been accomplished via conventional survey methods. The bathymetric data were quickly and easily merged with the ground mapping obtained via LiDAR to create a seamless terrain model for the detailed hydraulic modeling and floodplain mapping phases of the project.



The end result was a higher-quality product, delivered under budget and ahead of schedule. Atkins' Z-Boat has since been deployed for a number of other applications, proving it to be a valuable tool in gathering critical data in an efficient, seamless, and safe manner. From riverine to intracoastal to reservoir work, the Z-Boat offers a practical and cost-effective way to collect below-water terrain data.



**Oceanscience Z-Boat 1800 Specifications**

Hull Dimensions:	6' x 3'
Weight:	< 70 pounds
Motor:	Dual brushless 24V DC outdrives
Speed:	10 knots
Battery Life:	Up to 4 hours
Depth Sounder:	CEE HydroSystems, 10 Hz ping rate and matching data output
Depth Range:	0.3 - 100 meters
Remote Control Range:	~2,000 feet

Stop by the Atkins booth at the NCAFPM conference April 27-29 where the Z-Boat will be on display! A live demonstration is also planned, pending access permissions and favorable weather conditions.



North Carolina Association of  
Floodplain Managers  
**Board of Directors  
2014-2015**

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# Visualize Flood Risk with FloodSmart's Flood Risk Scenarios Tool

The consequences of a flood can be devastating to families, businesses, finances, and the overall health of a community. It is something we hope that people will never have to live through or recover from. But because we know that floods are the most common natural disaster in the United States — in fact, all fifty states have experienced flooding in the last five years — it is a safe bet that most people and communities are at risk of flooding in the near future. The free Flood Risk Scenarios Tool available on FloodSmart.gov demonstrates that anywhere it can rain, it can flood. FloodSmart is the marketing and education campaign of the National Flood Insurance Program.



**FloodSmart.gov**  
The official site of the NFIP

This tool demonstrates the different risk scenarios in which a flood can occur.

- Snowmelt is a common cause of flooding during the winter and early spring months. During these times, large amounts of runoff cannot be absorbed into the frozen ground. The water accumulates into lakes, streams, and rivers, causing excess water to spill over their banks.
- Flash floods are the most common severe weather emergency. A flash flood is caused by intense rainfall from one or more downpours, and can also be caused by the collapse of a man-made structure, such as a levee or dam.
- Construction and new development can change the natural drainage patterns in areas around buildings, parking lots, and roads, meaning less land is available to absorb excess water.
- Dams and levees also pose a flood risk. While these structures assist in the prevention of flooding, there are instances when flooding can still occur. Dams can become jammed with debris or can fail with the build-up of water pressure — or they can weaken over time and crack or collapse altogether. Levees can be overtopped or breached.
- Tropical storms, hurricanes, and nor'easters can bring several inches of precipitation in just hours. These heavy rains can lead to severe flooding by oversaturating the ground, overflowing storm drains, or causing rivers to spill over their banks or levees.

All of these examples are demonstrated in the Flood Risk Scenarios Tool and can help residents understand the many ways they may be at risk. Since floods can happen anywhere that it can rain, it's important that everyone is financially protected from

the dangers of floodwaters. Flood insurance is available to residents and business owners in both high- and moderate- to low-risk areas. And because most policies take up to 30 days to go into effect, the time to act is now.

The Flood Risk Scenarios Tool is available for download through FloodSmart's Community Resource page. For those interested in using this tool, it easily can be embedded into websites. This tool, in addition to other tools and resources on FloodSmart.gov, can assist in educating

communities about flood risks and educating residents about the need to purchase flood insurance that will help reduce the financial impact of flooding. ▲



# HEC-RAS Version 5.0

DAVID R. MARKWOOD, PE  
TYLER R. LONGBERRY, PE

There are a number of commercially available 2D hydraulic modeling software packages. The US Army Corps of Engineers Hydraulic Engineering Center is currently in the final stages of developing HEC-RAS version 5.0. The new release includes some highly anticipated features; primarily, the inclusion of 2D and combined 1D/2D hydraulic modeling and mapping. These features will allow engineers, communities, and other stakeholders to enhance their flood risk assessment and flood zone delineations, specifically in areas where the limitations of traditional 1D methods are generally insufficient for significant accuracy of a flood risk representation. Such examples include split-flow scenarios, channelized networks, alluvial washes with braided and evolving flow paths, and where overland flow dominates the flood hazard. HEC-RAS Version 5.0 will equip all hydraulic modelers with these and other features, which include: terrain modeling using existing HEC-RAS geometry, powerful mapping tools (RAS Mapper), and utilities for interpreting and presenting results. Perhaps the greatest feature of HEC software is in its unlimited release.

Best of all, HEC-RAS Version 5.0 will be open for unlimited distribution, and will equip all hydraulic modelers with these and other features, which include terrain modeling using existing RAS model geometry and powerful mapping tools and options for interpreting and presenting results.

Some powerful hurdles maneuvered by RAS 5.0 (Beta) for 2D simulations, as described by Mr. Gary Brunner, author and leader of the HEC-RAS development team, and by the Resource Management Associates group, include the ability to specify quite large cell

sizes for representing 2D computational meshes while minimizing impact to hydraulic accuracy, unrestricted cell geometry for a 2D mesh and its boundaries, and partial wetting and drying of cells during simulations.

Mr. Brunner further explains the point by using an example of a levee following a meandering river bank which can be represented and connected to 2D computation meshes, with the boundary cells of the 2D mesh following the irregularly shaped levee. Therefore, detailed hydraulic properties are maintained for irregular boundary cells and interior cells alike, despite the size of these cells exceeding the smaller hydraulic features within a 2D area. The authors will contend this provides a very significant advantage over a number of commercially available 2D software that rely on very limited ('lumped') hydraulic properties for mesh cells (requiring a much greater cell resolution to capture the hydraulic properties within a cell). The resolution of the resulting delineation,

*Below (top): Jebel Stream  
Where Flow Transitions  
to 2D at the Jebel Foot  
(bottom) Bund Outlet  
Structure Where Flow  
Transitions from 1D to  
2D (Al Ain, United Arab  
Emirates)*

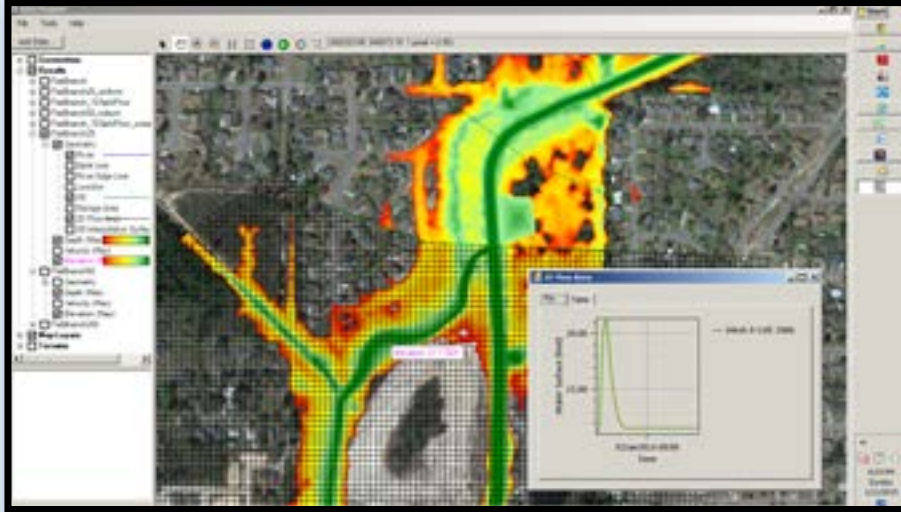




## HEC-RAS, from page 8

however, is entirely dependent on the size and shape of the 2D computational mesh.

RAS Mapper also provides the following enhanced features: immediate access to Google Satellite and other popular web imagery services, terrain modeling features, mouse-click/hover access to all cell hydraulic data within meshes, and animation of depth and velocity (and other) mapping results. Risk assessments, mitigation planning, and other floodplain management alternatives can be developed with relative ease.




*RAS Mapper View of Depth and Elevation Results (Costal Tributary along Mississippi Coast)*

Of course there are other 2D hydraulic modeling and mapping software available, many of which that include integrated hydrology (i.e. rain on grid) and other enhancements not available with the upcoming release of HEC-RAS 5.0. Also, many such commercial software packages are much better suited to particular scenarios, including highly urban areas with intricate stormwater and piped systems to be considered in an analysis. However, it is worth noting many of the programs are significantly more data intensive, have significantly slower developing learning curves than HEC-RAS, and

generally require greater experience and expertise for proper implementation.

The utilities offered in HEC-RAS 5.0 Beta will have many potential applications in addition to those previously discussed, including dam break modeling and emergency action planning, forensic H&H analyses, and in-classroom and client demonstration. As Mr. Brunner states with refreshing enthusiasm in *Combined 1D and 2D Modeling with HEC-RAS*, “The particle tracking visualization option...is extremely helpful in visualizing where water is going, and the relative magnitude of the velocity. Try it out; it’s really fun and informative!!!” The user-friendly software, upcoming enhanced features, and the obvious commitment of the HEC to continue to provide proven and state-of-the-art tools to the hydraulic engineering community, will extend the utility of this program well beyond its current use.

For more information, the reader is encouraged to reference the currently available documentation provided by the HEC, as well as the manuals that will be released with the official HEC-RAS Version 5.0. ▲



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[www.edgecombe.edu/geospatial-technology](http://www.edgecombe.edu/geospatial-technology)

# Designing for Extreme Environments

## Incorporating resiliency into buildings that are subjected to harsh or damaging conditions

PETER J. ARSENAULT, FAIA, NCARB, LEED AP

All buildings are subjected to the rigors of the natural environment wherever they are located. Some locations, though, have inherently more extreme conditions than others such as coastal and desert locations that can be subjected to more wind, salt, or sun exposure than inland temperate regions. Further, some building sites are prone to known natural events such as earthquakes along the West Coast or hurricanes along the Southern Atlantic/Gulf of Mexico region. In recent years, all areas across the United States and elsewhere have seen an increase in severe environmental conditions and events that have been linked to measured climate changes. Architects and design professionals have always been called upon to create buildings that can respond to these environmental conditions such that they can reasonably resist the range of normal forces and conditions imposed. More significantly, there is a growing need for buildings to be designed so they can be resilient enough to survive a severe weather or environmental event so the building is still usable and can return to normal operations.

### Flood Water Control

Flooding doesn't only occur during severe weather such as hurricanes; rather it occurs almost daily across the country due to local heavy rainfall, dam failures, land develop-

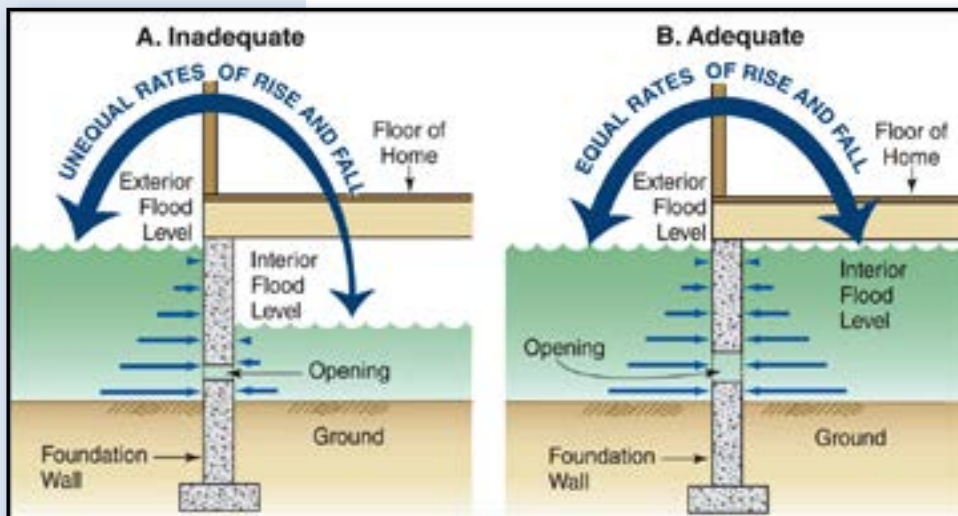
ment runoff, drainage problems, inland remnants of storms, and many other conditions. Nationwide, flooding is the leading cause of deaths related to severe weather. As such, flood control has become a significant issue with people and programs focused intently on how to be more resilient in the face of flooding.

Most people are familiar with the National Flood Insurance Program (NFIP), which allows flood insurance to be obtained for buildings, whether they are

located in established flood zones or not. Any property owner with a building located in a community that participates in the NFIP is eligible to purchase flood insurance. However, due to recent and pending flood insurance reforms, not all flood insurance is subsidized meaning many people may not find it affordable. Those located in a moderate-to-low risk area would most likely opt to purchase a Preferred Risk Policy to reduce the premium payments. Otherwise they would pay based on the full Actuarial Risk Rating determined for their location. Either way, the intent is to help protect building owners from catastrophic costs associated with flooding, and the NFIP has become the recognized authority on flood-related matters.

Separate from the government, a private organization known as the Association of State Floodplain Managers (ASFPM – [www.floods.org](http://www.floods.org)) is an organization of professionals in-

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## **Extreme Environments, from page 10**

involved in floodplain management, flood hazard mitigation, the National Flood Insurance Program, as well as flood preparedness, warning, and recovery. ASFPM has become a respected voice in floodplain management practice and policy in the United States because it represents the flood hazard specialists of local, state, and federal government, the research community, the insurance industry, and the fields of engineering, hydrologic forecasting, emergency response, water resources, and others. It has also established a national program for professional certification of floodplain managers, which recognizes continuing education and professional development that enhance the knowledge and performance of local, state, federal, and private-sector floodplain managers.

Brian Shaw, a Certified Floodplain Manager and Director of Sales and Marketing at Smart Vent Products, Inc., notes that the work of floodplain management can save dramatic amounts of money from damages. He cites an NFIP estimate “that just 1 inch of floodwater that enters the first finished floor will cause about \$21,000 worth of losses.” He notes that one proven method to mitigate those losses is the use of self-regulating flood vents which can be used in a “wet floodproofing” condition to prevent structural damage to a building.



### **Flood Vents**

One of the most damaging concerns during a flood is not just water damage to a building or its contents, but structural failure. This can happen when water builds up on the outside of foundation walls or walls of enclosure. In flood conditions like this, hydrostatic pressures can be extreme and can shift, separate, and even destroy foundations if they are not properly floodproofed. As a result, the NFIP Regulations and Building Codes require that any residential building constructed in Flood Zone Type A have the lowest floor, including basements, elevated to or above the Base Flood Elevation (BFE). Enclosed areas are

permitted under elevated buildings provided that they meet certain use restrictions and construction requirements such as the installation of self-operating flood vents to allow for the automatic entry and exit of flood waters. This accepted mitigation technique is referred to as wet floodproofing and is required for residential buildings in a flood zone. Commercial buildings have the option to wet floodproof, which can be more cost-effective compared to dry floodproofing.

Flood vents are manufactured products that are sized to match standard masonry block sizes. They can be installed in normal block coursing, in a concrete wall, or in framed construction. They consist of a vented or insulated (as desired) horizontal swinging “door” that is designed to stay closed under normal conditions and rotate open during a flood. Typically the flood vent door is latched closed until floodwater enters. Rising floodwater lifts internal floats, which unlatch and open the door. Water flows through the open vent door with flood debris also allowed to pass through without blocking the opening. Note that this is quite different from typical air vents that will clog with flood debris and are not designed to be used in flood scenarios.

It is possible to specify dual-function flood vents to be used for a home with a crawlspace or any enclosed area that requires both natural air ventilation and flood protection. In one product, a bimetal coil automatically opens and closes the ventilation louvers as temperature changes, meaning no electricity is required. The louvers will be fully closed at 35



## **Extreme Environments, from page 11**

degrees F and fully open at 75 degrees F. In the event of a flood the internal floats lift to release the flood door to rotate open and relieve the hydrostatic pressure regardless of the louvers' position, open or closed.

Flood vents protect the construction of a grade level wall by allowing water pressure from flooding to be equalized on either side of the wall, thus preventing damage or collapse.

Insulated flood vents are used for a garage or conditioned space where flood protection is required but air ventilation is not desired. For situations where a sealed crawlspace is being utilized in a floodplain, flood protection is still required and insulated flood vents work quite well for those applications. In this case, the flood door contains a styrofoam core with a designated R-value. There may also be a felt weather stripping that lines the entire vent frame, helping to keep the enclosure as thermally efficient as possible.

With luck, most of the buildings built to NFIP standards will never face a catastrophic flood, but effective floodproofing measures also result in more durable structures that require less maintenance and suffer an estimated 80 percent less damage every year. If the worst case does occur, the right floodproofing option will increase a building's "sustainability" in a fundamental way, often determining whether or not the building will survive at all. Smart Vent Products' Shaw says, "A house is only as strong as the flood vents protecting it. Flood vents are utilized because it's a building code requirement in flood zones and a requirement to obtain a compliant NFIP flood insurance rating, when applicable. Most people tend to forgo the most important reason to utilize proper flood vents, which is the protection they provide. Inadequate flood venting causes unequal rates of water to rise and fall between the inside and outside of the building enclosure, decreasing the ability of the enclosure to withstand exterior pressure. Effective flood venting allows the water to rise and fall equally on both sides of the enclosure thereby equalizing the pressure to help avoid structural damage. In addition, this will reduce the chance that exterior floodwater will rise high enough to reach and enter the first finished floor level." His years of experience with dealing with flood issues has caused him to promote the importance of this simple but effective measure. ▲



## **NC/SC Joint Conference in 2016**

Plans are being formulated for a joint conference for NCAFPM and SCAHM in the spring of 2016. The joint conference will be in lieu of each association's annual conference. Joint conferences with our South Carolina friends occurred in 2006 (Myrtle Beach) and 2011 (North Charleston), about once every five years. It is likely that the next event will be held in Myrtle Beach in April of 2016. While plans have not been formalized as yet, the joint conference has been discussed by both boards and appears to be a mutually desirable event. Watch for future news and announcements and be sure to let any current board member know if you are interested in working with us on the planning and implementation of the joint conference. ▲

# NFIP Coordinator's Corner

John Gerber, PE, CFM  
NFIP State Coordinator

919-825-2317

john.gerber@ncdps.gov

www.ncfloodmaps.com

## Flood Insurance Changes on the Rise

Change keeps coming to the National Flood Insurance Program and that means new flood compliance challenges for most lending institutions. Amid concerns about flood insurance reform act issues on the new detached structures exemption, upcoming revised escrow requirements, force placement and private flood insurance, this spring brings program changes that will affect borrowers who have a flood insurance policy.

Effective April 1, the National Flood Insurance Program (NFIP) will implement another round of changes called for in either the Biggert-Waters Flood Insurance Reform Act of 2012 or the Homeowner Flood Insurance Affordability Act of 2014. The first item on the list of changes is a new deductible that will be available for residential buildings. This option grows out of the 2014 Affordability Act. It will make a \$10,000 building and contents deductible option available to all residential property owners. You should also know that borrowers will be aware of this new option, and insurance carriers are required to inform those applying for NFIP policies of it. They must also include a statement to explain the effect of a loss-deductible so that policyholders understand that they are responsible out-of-pocket for losses to the extent of the deductible selected.

Expect premiums to be on the rise this spring, which may find more borrowers with an appetite for those higher deductibles. While the Affordability Act slowed the elimination of premium subsidies and limited the amount of annual premium increase, new policies and renewals on or after April 1 may still see premium increases as high as 18%. There are some limited exceptions where the percentage of increase could be even higher. Add to those premium increases a new surcharge that will be incorporated into all policies written through the NFIP. It is congressionally-mandated under the Affordability Act and will range from \$25 for a primary residence to \$250 for any non-primary residence or non-residential building. It will be added to new and renewed policies beginning in April.

The NFIP began applying a 5% Reserve Fund Assessment to most policies in October 2013 as part of the implementation of Biggert-Waters. This assessment is designed to set aside a fund to pay future flood insurance claims. Beginning in April, the assessment will increase to 15% for most policyholders. However, this assessment is included when premium increases are evaluated for compliance with the new annual premium rate caps.

## NFIP Affordability Study Report 1

BW-12 Legislation called for FEMA to conduct an affordability study to determine methods that would aid individuals to afford risk-based flood insurance premiums. The initial report was released March 26, 2015 and is available for viewing at [www.eenews.net/assets/2015/03/26/document\\_pm\\_07.pdf](http://www.eenews.net/assets/2015/03/26/document_pm_07.pdf).

## NCFMP's Upcoming Preliminary Issuances

RANDY MUNDT, AICP, CFM, OUTREACH COORDINATOR RISK MANAGEMENT SECTION

The North Carolina Floodplain Mapping Program is scheduled to release new flood hazard data for Durham, Granville, Person, Vance, and Wake Counties on March 31.

The next round of preliminary issuance data will be for the lower Neuse River Basin counties of Crave, Jones, Pamlico. It is expected that this round will also include the five counties bordering the Albemarle Sound: Chowan, Perquimans, Pasquotank, Camden, and Currituck counties. Issuance will be in the summer/fall of 2015. As the date for issuance becomes clearer, the NCFMP will be coordinating with the communities' floodplain administrators to schedule meetings with local officials and staff to clarify the post-preliminary process and explain the changes since the last FIRMs.

## NEW HMA Guidance Changes

Significant changes have been made to the *Hazard Mitigation Assistance (HMA) Guidance*, a comprehensive document that details the specific criteria of the three HMA programs: the Hazard Mitigation Grant Program (HMGP), Pre-Disaster Mitigation (PDM) and Flood Mitigation Assistance (FMA) programs. The Fiscal Year 2015 (FY15) HMA Guidance provides stakeholders with updates and refinements of program policies and practice. These enhancements will promote resilience, and streamline application review, eligibility requirements, project cost estimate and implementation.

The changes apply to the HMGP for disasters declared on or after the date of publication, as well as the upcoming PDM and FMA application cycles. Since the last update to the HMA Guidance in 2013, the Office of Management and Budget (OMB) developed regulations that streamline language from eight existing OMB Circulars. DHS adopted the Super Circular on December 26, 2014, and FEMA has implemented these changes in the updated guidance.

Changes to the HMA Program Guidance include:

- **Climate Change/Resilience:** Recognizes challenges posed by climate change that may have impacts on mitigation. Applicants and sub-applicants can use the additional HMGP 5 percent initiative toward adopting and/or incorporating disaster resistant building codes.
- **2 Code of Federal Regulations Part 200: The OMB Super Circular:** Adopts the regulations in the OMB Super Circular that outlines the federal government's framework for grants management, and are applicable to FEMA grants issued on or after December 26, 2014.
- **Mitigation Planning Changes:** Requires states to update mitigation plans every five years, which provides the applicant with greater flexibility to shift their resources to other important or pending mitigation activities listed in the plan.
- **New Benefit-Cost Analysis Methodologies:** Incorporates new methodologies for residential hurricane wind projects and the acquisition of properties in landslide hazard areas that are at risk of immediate threat.
- **Various Environmental Planning and Historic Preservation (EHP) Clarifications:** Enhances efforts to streamline the EHP review process, including defining the front-loading process (promoting the fuller consideration of EHP compliance requirements and impacts to a proposed project during project development).



- Resources and Job Aids: Includes 23 resources and job aids to assist in HMA program delivery. Examples are:
  - *Homeowner's Guide to the HMGP* answers some common questions that homeowners have about implementing post-disaster projects.
  - Federally Recognized Tribes and Hazard Mitigation Grant Program discusses benefits and responsibilities of federally-recognized tribes if they become an applicant or sub-applicant.
  - Resilience and Climate Change Adaptation job aid discusses FEMA programs designed to promote community resilience
  - Closeout Toolkit includes frequently asked questions and a checklist to help recipients prepare for sub-award closeout activities.
  - EHP Section 106 Overview includes process flowchart and information on the National Environmental Policy Act (NEPA) decision making process.

The HMA Guidance consolidates each program's eligibility information, outlines the common elements, and spells out the unique requirements among the programs so that federal, state, federally recognized tribal, territorial, and local officials can easily identify key similarities between the various programs. For more information, visit [www.fema.gov/hazard-mitigation-assistance](http://www.fema.gov/hazard-mitigation-assistance).

HMA homepage: [www.fema.gov/hazard-mitigation-assistance](http://www.fema.gov/hazard-mitigation-assistance)

FEMA Regional Offices: [www.fema.gov/regional-operations](http://www.fema.gov/regional-operations)

FEMA State Hazard Mitigation Officers: [www.floods.org/index.asp?menuID=767](http://www.floods.org/index.asp?menuID=767)

HMA Helpline: 866.222.3580

## Congress Makes Updates to Coastal Barrier Resources System Maps in Four States

Maps depicting eleven units of the Coastal Barrier Resources System (CBRS) were made effective on December 18, 2014, via Public Law 113-253. The new maps (depicting revisions to ten units and one entirely new unit) are available on the U.S. Fish and Wildlife Service's website at [www.fws.gov/cbra/Maps/Recently-Enacted-Maps.html](http://www.fws.gov/cbra/Maps/Recently-Enacted-Maps.html). The affected CBRS units, comprising 19,893 total acres, are located in Rhode Island, North Carolina, South Carolina, and Florida. The new maps correct errors affecting property owners and add eligible undeveloped areas to the CBRS.

Additional information about the John H. Chafee Coastal Barrier Resources System can be found on the Service's website at [www.fws.gov/cbra](http://www.fws.gov/cbra). ▲



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Here at F.R.E. our goal is to help you to lower your NFIP Flood Insurance Premium. Our educated staff of Certified Floodplain Managers are knowledgeable on all the latest NFIP changes that are affecting your policy such as the Biggert-Waters Act (BW-12) and the Grimm-Waters Act (Homeowners Flood Insurance Affordability Act).

Our team is eager to review your current situation and provide guidance on how to reduce your flood insurance premium. Once we review your Elevation Certificate and current NFIP Flood Insurance Policy we will provide you with a report of our findings. This report will detail out

mitigation options such as Flood Vents to lower your premium, grandfathering options that can have you rated at an earlier FEMA Map, and in some cases LOMA options that could eliminate the mandatory requirement for Flood Insurance.

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## Executive Order 13690 and the New Federal Flood Risk Management Standard **EXPLAINED**

*Reprinted from ASFPM's  
News and Views,  
February 2015*

President Obama on Jan. 30 issued Executive Order 13690 that revises Executive Order 11988 and proposes a new Federal Flood Risk Management Standard. “Since the issuance of Executive Order 11988 38 years ago, we as a nation have learned a lot about floodplain management and flood risk,” ASFPM Executive Director Chad Berginnis said. “The changing nature of flood risk, including increased risks due to sea level rise, demands competent standards that will withstand the test of time and the forces of nature. And we think the new EO and FFRMS is a great step in the right direction.”

### **Elements of EO 13690 and the FFRMS**

The EO and new standard would apply to federal actions such as federal grants used for repair and redevelopment after a natural disaster. In fact, the definition of federal actions to which the EO would apply is unchanged from EO 11988. The FFRMS gives agencies the flexibility to select one of three approaches for establishing the flood elevation and hazard area they use in siting, design, and construction. They can:

- Use data and methods informed by best-available, actionable climate science;
- Build two feet above the 100-year (1%-annual-chance) flood elevation for standard projects, and three feet above for critical buildings like hospitals and evacuation centers; or
- Build to the 500-year (0.2%-annual-chance) flood elevation.

Other elements of the EO include a directive for agencies to use, where possible, natural systems, ecosystem processes and naturebased approaches when developing alternatives for consideration. Also, the new EO specifies that it is the policy of the United States to improve the resilience of communities and federal assets against the impacts of flooding, and recognizes the risks and losses due to climate change and other threats.

One of the new elements of the FFRMS is the application of the new standard outside of the mapped floodplain, especially where the freeboard approach is used. We also know significant flood losses occur outside of the FEMA-mapped floodplain. Mother Nature simply does not recognize our flood mapping boundaries, and the FFRMS would require applying the freeboard when determining where the standard applies. At the same time for the floodplain manager, this is nothing new. Floodplain managers, on a daily basis, utilize the base flood elevation to regulate development activity, regardless if the mapped floodplain boundary shows something different.

In addition to the release of the new EO and FFRMS, draft flood risk management standard implementation guidelines were released. Information about the FFRMS has been incorporated into the guidelines to aid agencies in development of their revised or new procedures and to promote consistency among agencies. The guidelines are also advisory. To the extent permitted by law and consistent with their statutory authority, each agency shall draft or update their own rules and regulations to be consistent with EO 13690. The guidelines call for a 30 day timeframe after the close of the public comment period to develop an implementation plan for updating their procedures. “After Executive Order 11988 was issued in 1977, the Water Resources Council issued implementing guidelines for agencies to assist with incorporating the standards of the EO into their policies, procedures, and programs. The new guidelines amends that older document, and will be of great assistance to agencies as they incorporate the new FFRMS,” Berginnis said.



## Process

A federal interagency coordinating group that deal with floodplain management issues—the Mitigation Framework Leadership Group (MIT-FLG) – had been working on the new standard for well over a year. This interagency team includes agencies such as the Corps of Engineers, FEMA, NOAA, HUD, Transportation, and the Department of Agriculture (which includes NRCS). Essentially all of the federal departments containing the nation’s water resources agencies – such as those that oversee and construct dams and levees – were at the table. These agencies have some of the nation’s leading experts and institutes that deal with flooding and water resources. The FFRMS was developed as a consensus standard among these agencies.

Concurrent with the development of the standard, the views of elected state and local officials were solicited and considered during the development of the standard. The consensus standard that emerged was very similar to the one recommended by 26 governors, mayors, county officials and tribal leaders in the State, Local and Tribal Leaders Task Force on Climate Preparedness and Resilience report issued this past November.

Now that the EO, FFRMS and guidelines have been issued, a 60-day public comment period on the guidelines has kicked off. Written comments are being solicited until April 6. In addition, four public listening sessions have been scheduled: March 3 – Ames, Iowa; March 5 – Biloxi, Mississippi; March 11 – Mather, California and Norfolk, Virginia. After the public comment period has ended and the revised guidelines are issued, agencies will begin the process of updating their procedures to incorporate the new EO and FFRMS standard. In many cases, this will trigger the need to do rulemaking, which will be subject to another round of public input. Only after the agencies have incorporated the new EO and FFRMS will floodplain management professionals see its implementation on the ground.

At the end of the day, the new FFRMS is good for the country. “The nation cannot afford to continue to pay for larger and larger flood disasters. The proposed Federal Flood Risk Management Standard is a common sense approach that will increase the nation’s resiliency and reduce future taxpayer costs for flood response,” ASFPM Chair Bill Nechamen said.

ASFPM has created an FFRMS resource page, which you can see [here](#). ▲

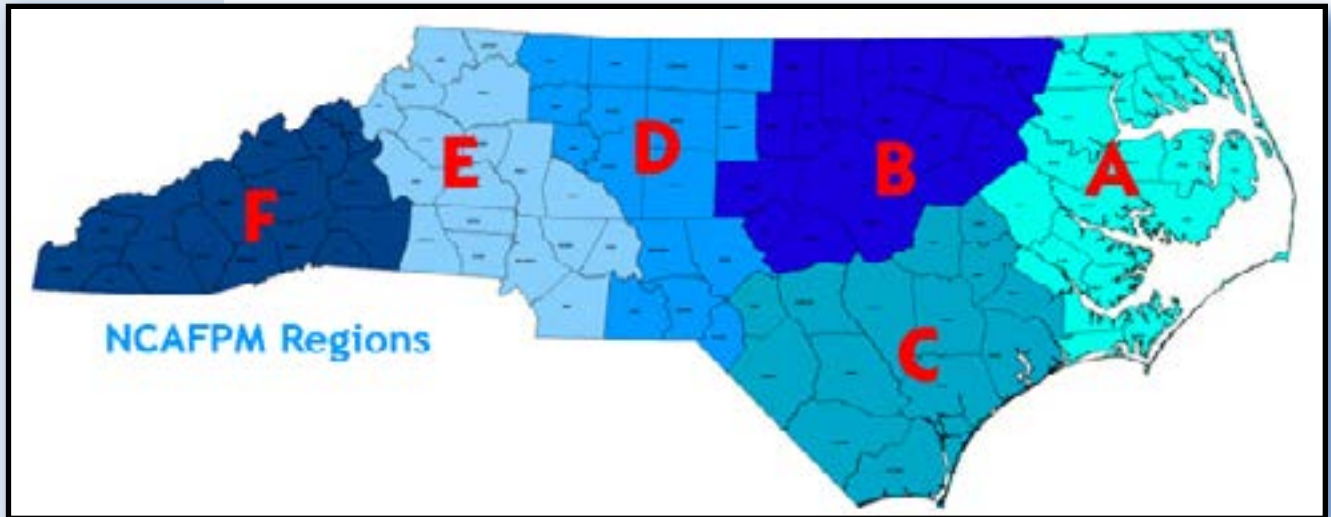
## NCAFPM Wants *You*

Have you ever thought about serving on a committee or the board of NCAFPM? Traditionally, new board members are elected and committee appointments are made at our spring annual conference.

Board meetings are usually held four times per year, a few months before the annual conference and Fall Floodplain Institute and again during those events. Telephone conferences make up the rest of our meetings (about 3-4 each year).

Check out the Board Members webpage (under About NCAFPM on our website) to see the fourteen board positions and who is currently filling each role. Any current or past board member would be happy to talk with you about your interest and assist in answering any questions. ▲

# NCAFPM Regional Reports



## Region B

Randy Mundt,  
AICP, CFM

The big news in Region B is the new flood risk data (FIS/FIRMs) that will be issued for Wake, Durham, Granville, Person, and Vance on March 31. These communities will be setting up public open house meetings over the next 4-5 months. Additionally, Edgecombe and Halifax counties have been issued a letter of final determination (LFD) from FEMA, which triggers their six-month compliance period to adopt the updated flood risk data by June 2, 2015. The eight affected communities attended a flood damage prevention ordinance update workshop in January, and all appear to be on track to meet FEMA's LFD deadline.

Otherwise, the primary activity of floodplain managers in Region B has been involved with updates for their communities hazard mitigation plans. Person County's plan is under FEMA review, and should be approved in April. Durham/Orange/Alamance counties are working on a multi-jurisdictional regional plan and expect to submit their initial draft in April, with the expectation of FEMA approval in July. Wake County has received FEMA's approval for their multi-jurisdictional plan. Johnston County, part of a Cape Fear Regional Plan, has submitted their draft for review, and anticipates FEMA approval in August. Nash/Edgecombe/Wilson multi-jurisdictional plan was submitted to FEMA in April and is expecting approval in July. Halifax/Northampton counties are just now starting their plan update, but they will assimilate their plan with the Nash/Edgecombe/Wilson plan, and expecting FEMA approval in July 2016. Granville/Vance/Warren/Franklin are part of a regional TarRiver Basin Plan, and are in the formative stages of plan update, expecting FEMA approval in the summer of 2016.

A big mitigation project has been making steady progress in Raleigh, along the Capital Boulevard corridor: the Milner Inn has been bought out and removed from the floodplain. The Milner Inn project was funded under HMGP-1969, 2011 Tornadoes event. FEMA awarded the grant January 3, 2013. It went to demolition starting in mid-January 2015 and the project is now in the close-out phase.

Here are the financials:

Federal Share: \$1,100,785.00

State Cost Share: \$366,928.00

Total grant funding: \$1,467,713.00

# NCAFPM Regional Reports

## Region D

Drew Blackwell,  
CFM

In the spring 2014 issue of our *FlashFlood* newsletter, I shared my experience in attending a local event in Forsyth County, called Forsyth Creek Week, which aims to draw the connection between local waterways and our quality of life. The event, then only in its second year, left me impressed with the collaboration of contributing partners, community engagement, and knowledge sharing on many levels. It prompted me to introduce myself to the event organizer, Ms. Roseann L'Esperance, City of Winston-Salem Department of Stormwater/Erosion Control, and tell her what the NCAFPM is all about and how we may be able to contribute to this event.

Fast-forward one year, five planning committee meetings, several conference calls and four very giving members, our NCAFPM team partnered in the Third Forsyth Creek Week volunteering a field demonstration on the collection of stream characteristics along Salem Creek in Winston-Salem. Attempts to market the event through local professional organizations with an interest in floodplain and stormwater management brought in more than thirty participants to the workshop that was held on Friday, March 20. Backgrounds of attendees ranged from local community officials responsible for floodplain management, private consultants, engineers, surveyors, college professors, state agency officials, and even property owners interested in learning more about the process.

The workshop started with an introduction to the NCAFPM; who we are and what we do. The first half of the workshop provided an overview of the National Flood Insurance Program and the North Carolina Floodplain Mapping Program before providing a first-hand glimpse of the various surveying techniques and instrumentation used when preparing a flood insurance study. Next, attendees learned the importance of identifying blocked obstructions, ineffective areas, and calculating floodplain roughness defined by Manning's Roughness Coefficients ('n' values). Here, attendees were given the opportunity to collect field data and calculate the 'n' value. Cornelia Barr, Board Chair of the Environmental Initiative and Creek Week partner said, "The level of professional experience added a lot to Creek Week, and I think it was informative for both professionals and the members of the general public that attended."

I would like to personally thank our NCAFPM team that led the workshop:

**Joseph Kirby, Jamey Gray, and Preetham Thotakuri (ESP Associates) and Laura Arnold (AECOM).** Attendees had an incredible resource to tap into with this team and many stopped to say how much they took away from the event.

*Please contact your regional representative and/or Drew Blackwell with any ideas of how to get NCAFPM involved in your region.*



Above: Jamey Gray providing an overview of surveying techniques and instrumentation at Forsyth Creek Week.

Right: Team leaders (l-r) Drew Blackwell, Jamey Gray, Preetham Thotakuri, Laura Arnold, and Joe Kirby.





# NCAFPM Regional Reports

## Region E

Robert Billings,  
CFM

Bill Tingle, PG, CFM retired from Mecklenburg County on January 29, 2015. Bill hired me way back in 2001 and was one of the only supervisors I've ever worked for. He taught me important stuff like flood insurance 101 and elevation certificates but he also tried to teach me humility and how to have empathy with a flood victim even when they were yelling at you.

Bill's future plans involve expanding his business — Geomatics Workshops (which provides live and online continuing education workshops for surveyors, engineers, and other professionals). He also plans to be more involved with NCAFPM as executive director.

The FPA duties for Charlotte-Mecklenburg have been passed on to Mr. Don Ceccarelli, PE. Melonee Brock and Tim Ruane will be handling the daily FDP stuff. And we would like to welcome back to the group Mr. Salih Iddrisu. Salih will be leading the charge on future mapping activities as well as CRS needs.

Kurt Golembesky, PE, CFM was providing QA/QC support in the Cold Water Creek watershed in Cabarrus County in late March. I think he was actually looking for gold nuggets as he was pretty close to where the largest gold nugget in NC was found. Kurt has also been involved with the remapping of the Catawba River. He said that most of the engineering has been completed and the preliminary maps may go into effect mid-2016.

The US Army Corps of Engineers Huntington District has completed a stream restoration project through the campus of ASU in Watauga County. The project included approximately 4,000 feet of restoration techniques along the South Fork New River. The project was video recorded using drone technology from Nelson Aerials. The video may be viewed at: <https://vimeo.com/107312257>.

## Region F

Brad L. Burton,  
CFM

Hello and happy almost-spring to everyone from the pointy-end of the state. The robins have arrived, and the lil' peeper frogs are a' peepin in the evening. Blessed spring is just around the corner, folks. Thank goodness!

In this transition time from winter to spring, such transition also brings new opportunities within this organization ... I have a new job! You may know it as the "Seattle of the South" or "[Beer City USA](#)" but whatever you want to call it, Asheville is where I am employed now and boy howdy it's a "hoppin" place (beer pun intended). After ten years and a few months with the City of Brevard I have made this transition to a brand-new position. While what I do has some concerns with NFIP-related issues from a building construction/building demolition standpoint, I am no longer acting as an FPA or managing any related programs.

I am currently climbing a pretty steep learning ladder and because of that I am not going to be an effective regional representation for this fine organization at least for a while. So... it's time for someone in Western NC to toss their hat in the ring and get themselves nominated and elected as the Region F representative at the spring conference in New Bern.

The gratis caddy, the suite at Panther Stadium, the air miles...man, it's all worth it!

OK, none of that is true, but there is an opportunity here for someone from Western NC to hop on this Board and make a difference! The new mentoring program, along with the educational opportunities concerning the flood simulation model we have received

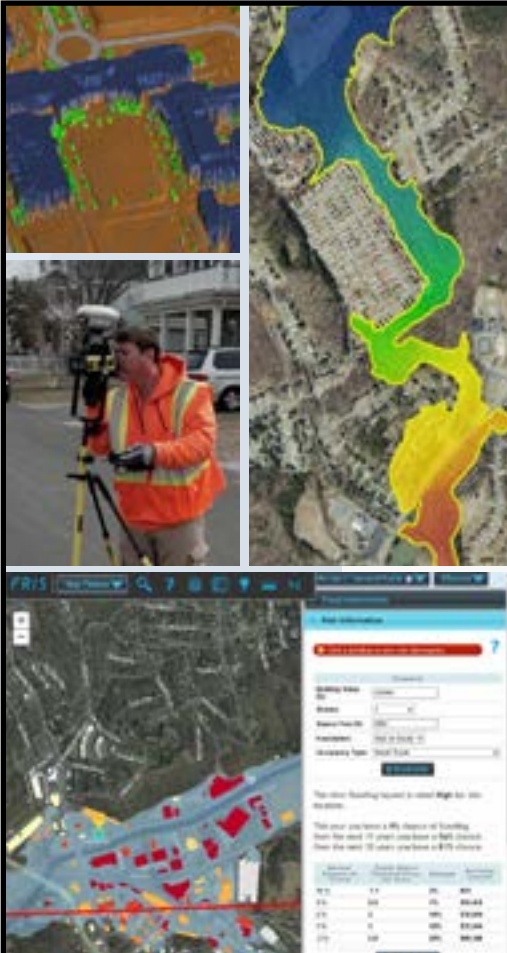
# NCAFPM Regional Reports

are examples. Most importantly though is the camaraderie experience with this tight-knit group of professionals that make up this Board is worth the little bit of time commitment required. Folks, there are some brilliant people in this state participating in this program and you are doing yourself a disservice not experiencing and learning from their wisdom first hand.

Get involved! This organization is turning a corner and really starting to get some national recognition for its efforts. Be a part of it! Contact me if you have any questions!

In closing, I humbly and respectfully want to personally thank Cynthia Barcklow, David Key, Robert Billings, Stephen Smith, Andrew Blackwell, and especially Mr. John Fullerton and Mr. Bill Tingle for allowing me this opportunity for the past few years. You guys rock! NCDPS — Mundt, Gerber, Garrett, Brubaker, Ashe and, especially T. Foxx, I appreciate each and every one of you for your assistance in the good times and the bad. You guys are awesome.

As the Governor said, "I'll be back..." ▲



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# Upcoming Conferences & Events



## ASFPM 2015 Annual Conference

**May 31-June 5 | Atlanta, GA**

The Association of State Floodplain Managers will convene the world's largest and most comprehensive floodplain management conference – the 39th annual gathering – the week of May 31-June 5, 2015, at the Hyatt Regency in downtown Atlanta, Georgia.

The theme for the 2015 conference is *Mitigation On My Mind*. FEMA defines mitigation as the effort to reduce loss of life and property by lessening the impact of disasters.

Mitigation is taking action now — before the next disaster — to reduce human and financial consequences later (analyzing risk, reducing risk, insuring against risk). Effective mitigation requires that we all understand local risks, address the hard choices, and invest in long-term community well-being. Without mitigation actions, we jeopardize our safety, financial security, and self-reliance.

The ASFPM annual conference is recognized as the most important floodplain conference in the United States year after year. With more than 120 speakers and over 1,200 participants, it is the national conferences all community, state, and federal floodplain managers plan to attend. And because of that, many of the most important consulting firms and product vendors associated with floodplain management attend.

In recent years, the attendance has had about an equal number of private, local, state and federal participants from all over the United States and several foreign countries.

NCAFPM will have representatives attending and our association has donated funds to the Georgia association toward a successful conference.

For more information and registration, go to [www.asfpmconference.org](http://www.asfpmconference.org).

## Coastal Sediments 2015

**May 11-15 | San Diego, CA**

Coastal Sediments is an international coastal science and engineering conference which is held every four years, alternating with its sister conference, Coastal Dynamics. Coastal Sediments 2015 (CS15) will be held May 11-15 in San Diego, California, with the theme of “Understanding and Working with Nature.” CS15 is the eighth conference in the Coastal Sediments Series, which began in 1977. For more information and to register, go to <http://coastalsediments.cas.usf.edu>.

### Thank you to the sponsors of *FlashFlood News!*

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## APWA North Carolina 2015 Stormwater Management Division Conference

### September 14-15 | Wilmington, NC

This conference is a great opportunity to network with colleagues and stay up-to-date on current events affecting stormwater professionals. The 2015 Conference will be held at the Wilmington Hilton Riverside September 14-15.

Issues and concerns related to water quality and stormwater management continue to play a significant role in the world of public works, shaping technical focus and policy throughout government and private industry. Join us as we once again provide a variety of learning opportunities in a fun and friendly atmosphere.

For more information about the conference, or if you would like to present, please contact Derek Pielech at [derek.pielech@wilmingtonnc.gov](mailto:derek.pielech@wilmingtonnc.gov).



### Upcoming NFIP Training

For more details about these courses, go to the NCEM TERMS site ([terms.ncem.org/TRS/home.do](http://terms.ncem.org/TRS/home.do)). Reimbursement for lodging and meals is currently available for North Carolina state and local officials attending the CRS or the Coastal Construction Training. We anticipate CEC credit will be offered for the CFMs once ASFPM has reviewed the syllabus.

### Community Rating System Workshops

Course	Date	Location
<b>L-278</b> CRS 2-Day Adv Course	<b>April 8-9</b> 8:30 AM - 5 PM	<b>Martin County EDC Facility</b> NC TeleCenter 415 East Boulevard, Williamston, NC 27892
<b>L-278</b> CRS 2-Day Adv Course	<b>May 6-7</b> 8:30 AM - 5 PM	<b>Pender County Emergency Management EOC</b> 805 Ridgewood Avenue, Burgaw, NC 28425

### Coastal Construction Workshops

Course	Date	Location
<b>NC-0197</b>	<b>April 14-15</b> 8:30 AM - 5 PM	<b>UNC Coastal Studies Institute</b> 850 NC 345, Wanchese, NC 27981
<b>NC-0197</b>	<b>May 20-21</b> 8:30 AM - 5 PM	<b>New Hanover County Government Center</b> HR Training Room A 230 Government Ctr Dr, Wilmington, NC 28403

# Calendar

**April 27-29, 2015**

NCAFPM ANNUAL  
CONFERENCE  
New Bern, NC  
www.ncafpm.org

**May 10-15, 2015**

GOVERNOR'S HURRICANE  
CONFERENCE  
Rosen Shingle Creek Hotel  
Orlando, FL  
www.flghc.org

**May 11-15, 2015**

COASTAL SEDIMENTS  
CONFERENCE  
Hyatt Regency Mission Bay  
San Diego, CA  
coastalsediments.cas.usf.edu

**May 31-June 5, 2015**

ASFPM NATIONAL  
CONFERENCE  
Hyatt Regency  
Atlanta, GA  
www.floods.org

**June 15-18, 2015**

NHWC CONFERENCE &  
EXPOSITION  
Crowne Plaza Union Station  
Indianapolis, IN  
nhwc.clubexpress.com

**August 2-6, 2015**

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Austin, TX  
www.stormcon.com

**September 14-15, 2015**

APWA NC STORMWATER  
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Wilmington, NC  
northcarolina.apwa.net

# Floodplain Management Resources

## Technical Assistance (State)

### NC Emergency Management National Flood Insurance Program

**NFIP State Coordinator:** John Gerber, PE, CFM  
john.gerber@ncdps.gov | 919-825-2317

#### NFIP Planners

**Central Area:** Milton Carpenter, CFM  
milton.carpenter@ncdps.gov | 919-825-2302

**Eastern Area:** vacant

**Western Area:** Terry Foxx  
terry.foxx@ncdps.gov | 828-228-8526

**NFIP Engineer:** Dan Brubaker, PE, CFM  
dbrubaker@ncem.org | 919-825-2300

### NC CLOMR/LOMR Submittals

www.ncfloodmaps.com/mt-2\_forms.htm  
**LOMC Manager/Community Development  
Planner:** Steve Garrett, CFM  
steve.garrett@ncdps.gov | 919-825-2316

### Meck. Co. CLOMR/LOMR Submittals

David C. Love, PE, CFM..... 704-432-0006

### Hazard Mitigation Grant Program & Flood Mitigation Assistance Prog

Chris Crew, Mitigation Section Chief  
919-825-2305

## Maps & Flood Insurance Studies

### FEMA Map Information eXchange (FMIX)

1-877-336-2627 (1-877-FEMA-MAP)

### NC Floodplain Mapping Program

919-715-5711  
www.ncfloodmaps.com

## Technical Assistance (FEMA)

### National Flood Insurance Program Floodplain Management and Insurance Branch: FEMA Region IV

www.fema.gov/about/regions/regioniv/

**Branch Chief:** Susan Wilson, CFM  
susan.wilson@dhs.gov | 770-220-5414

**Natural Hazards Program Specialist**  
Collis Brown  
collis.brown@dhs.gov | 770-220-8784

**FEMA Region IV Insurance Specialist**  
Janice Mitchell  
janice.mitchell@dhs.gov | 770-220-5441

### Individual Lot LOMA/LOMR

FEMA LOMA DEPOT  
3601 Eisenhower Avenue  
Alexandria, VA 22304-6425  
Attn: LOMA Manager

### Flood Insurance Policy Issues

www.fema.gov/business/nfip/nfip\_regions.shtm#4

**Regional Manager:** Lynne Magel  
lmagel@ostglobal.com | 813-788-2624

**Regional Liaison:** David Clukie  
dclukie@ostglobal.com | 813-767-5355

## Websites

NCAFPM..... www.ncafpm.org  
ASFPM ..... www.floods.org  
FEMA ..... www.fema.gov  
NFIP ..... www.floodsmart.gov  
NCEM ..... www.nccrimecontrol.org/nfip  
NC Maps ..... www.ncfloodmaps.com

**FlashFlood NEWS** is a semi-annual online publication which offers information and education on topics that are of current interest in the field of floodplain management and the National Flood Insurance Program.

Information and opinions do not necessarily reflect the views of the North Carolina Association of Floodplain Managers.

All inquiries and article ideas should be directed to: Kelly Keesling, Editor (kgkeesling@carolina.rr.com).

For more information about the North Carolina Association of Floodplain Managers, see our website at www.ncafpm.org.

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