Moving forward while staying safe at home

Welcome to a special edition of The Insider. We consider this a bit of a hybrid issue as it contains some content typically featured in the News & Views newsletter. Here’s why.

First, like so many organizations, agencies, and companies across the country, ASFPM has been forced to adapt to the challenges of working from home during this global pandemic. We know we’re among the lucky ones — unlike healthcare workers, first responders, delivery drivers, warehouse workers, grocery employees, and many others who don’t have the luxury of staying safe at home. But it’s not the same as being in the office, and we don’t have to tell you that COVID-19 has created a ripple effect that touches so many aspects of our personal and professional lives.

Second, as many of you have noticed, there was a recent disruption in our traditional publishing schedule of The Insider going out on odd months and News & Views on even months. As creatures of habit, we’re looking to get back on track and to do that we’ve developed this hybrid issue for April even though we published a News & Views last month. In doing so, we’re ensuring you get all the important information you need in a timely fashion and not worrying about which newsletter it normally runs in.

In May, we will refrain from doing a newsletter, but we will send out email alerts whenever we have important information to share with you, such as news about our annual conference, additions to our Webinar Sprint series, and other timely updates. In June, we’ll resume our normal publishing schedule with an issue of News & Views; back on an even month where it belongs.
As always, we encourage you to follow ASFPM on social media. We use our various social media channels to keep professionals informed about key developments in all aspects of flood risk management. Here’s where you’ll find us:

- Twitter
- Facebook
- LinkedIn: We have both a company page you can follow and a private group page you can join.

Finally, this is also my first issue as editor. By way of introduction, this is Mary Bart. I joined the ASFPM as its new communications coordinator on March 30. Starting a new job with everything that’s going on in the world has been interesting, but I’m excited to be here. I’m getting to know my new colleagues via Google Hangout, phone, email, and chat. And I’m working to get up-to-speed on floodplain management issues and all of the good work being done by our members every day.

I bring to ASFPM more than 25 years of communications experience, including writing, editing, social media, public relations, and content marketing.

I appreciate your flexibility in allowing us to provide you with this special issue. I can’t tell you how thrilled I am to be a part of this association, and I look forward to the day when we can all meet in person. In the meantime, feel free to drop me a line at mary@floods.org. Stay safe!

Are You an Insider?

New and prospective members often ask us what the difference is between our two newsletters. For the benefit of all, we’re providing a summary here:

**The Insider:** ASFPM’s exclusive members-only newsletter covers the latest in federal, state, local, and legislative news. It features interviews with subject matter experts, summaries of key meetings, success stories and best practices, upcoming events, member news, and more. The Insider is published every other month (January, March, May, July, September, and November).

**News & Views:** Delivered to ASFPM members and non-members, this public newsletter has a circulation of nearly 20,000 readers. It provides us with the opportunity to engage a wider, more diverse audience and educate them on important floodplain management issues. It’s published every other month (February, April, June, August, October, and December).

If you’re enjoying this special edition of The Insider, remember this is traditionally a members-only newsletter. It’s just one of the many benefits that come with an ASFPM membership. Learn more about the full portfolio of resources and discounts available to members and become a member today!

Have a story you’d like to share with ASFPM newsletter readers? Email us at editor@floods.org.
Conference Options Being Explored

As stay-at-home orders remain in place throughout much of the country, we understand there are many questions about the status of our national conference — namely whether we’ll be able to hold it in Fort Worth, June 7-11, as planned.

We want you to know that our conference contingency planning team meets regularly to discuss options that will provide the best path forward, in the event we are unable to meet in person. At this time, we are moving down two concurrent paths—the in-person and a backup virtual conference. The backup virtual conference planning would allow us to shift the current conference into a three-day virtual conference, in the event the in-person is cancelled. It would allow us to deliver the educational programming our members need in a safe and convenient format. The team is currently evaluating hosting platforms to see which company can best support our requirements for a robust, intuitive, and engaging learning experience along with a strong component for showcasing our sponsors and exhibitors.

A final decision will be made by May 7, 2020, which is 30 days before the in-person conference is scheduled to take place, or sooner, if the city of Fort Worth cancels due to restrictions that prohibit us from executing the conference there. We’ll send a conference alert via email and social media and update our webpage as soon as a decision is made.

Thank you for your patience and flexibility during this unprecedented global crisis. Together, we’ll get through it.

Protecting a Flood-Prone House or Business with a Crawlspace

If a home or business has been flooded or is located in or near a flood hazard area, the owner typically has two choices:

1. Wait for the government to do something, like construct a reservoir or levee, or
2. Take actions on your own to reduce your risk of flood damage.

ASFPM Nonstructural Flood Proofing Committee has developed a resource for homeowners and business owners who want to reduce their exposure to flood damage (and potentially lower flood insurance premiums). Even if a government agency is planning to construct a reservoir or other flood control project, it may take years before it is constructed and operational. Meanwhile, the property may flood again.

We’ll walk you through the steps home and business owners should be taking to reduce their flood risk. 
Download the guide.
CFM Corner—Where Your Career and Practice Meet

By Ingrid Wadsworth, CFM, ASFPM Deputy Director - Operations and CBOR Regent

COVID-19. What a game changer. We hope you are faring well with your #SafeAtHome, #ShelterInPlace, #WFH or your favorite hashtag. We also hope your loved ones are doing OK and that you are managing the stress of working from home, children at home, partners who are essential employees, vulnerable parents, and other family across town or the world.

As chapter conferences and others trainings get cancelled, many of our CFMs are wondering about CECs and what to do about upcoming renewals, especially those due in July 2020. If you are in that bunch, do not despair. We are working to support you, accommodate where we can, and make sure there are enough free and low-cost CECs available for you to complete your renewal on time.

While we are not offering extensions at the time, we are happy to help those that need one, if we know in advance! The key is to communicate with us and provide us with your reasonable plan before your decertification letter is issued. Please email the certification team at cfm@floods.org if you are having trouble and you have a plan that outlines what we can expect from you, as soon as you know. Should you or others in your immediate circle contract COVID-19, please be assured that we have policies in place that allow for medical extensions of up to one year, with proper documentation.

If this is the first time you are doing online self-study training, you may be surprised at how vast the world of CFM CEC training has become and just how many online resources are available to you!

Changes to CEC policies by the Certification Board of Regents over the past few years now allow ALL your CECs to be online training or online learning. There is a credit difference between training and learning. Online training is 1 CEC per 1-hour instruction, if there are learning checks, such as a test or final exam. Online learning is 1 CEC total for online webinars or self-study that does not test your knowledge.

Nonetheless, we do need a course certificate as proof of the training as outlined in the Guidance for Continuing Education Credit. Members and nonmembers can get to the CFM Maintenance Login Portal here. There is a “forgot password” link on the login screen if you don't remember your password. Once inside the portal, you can upload CECs electronically and update your contact information.

Bonus! We have redesigned the TRAINING page of our website to now highlight the more than 300 pre-approved free and low-cost trainings available to CFMs. We’ve also created ASFPM Webinar Sprint! which guarantees CFMs at least 12 extra CECs through live online training conducted by subject matter experts. Many courses in the series which were previously available only to ASFPM members are now available to all CFMs, regardless of membership. Members will receive email updates as we add more, and non-members should continue to check back to our website or consider membership with us. We hope you enjoy the trainings put on by our policy committees and other members of ASFPM leadership.
Please remember to notify us when you move. CFM renewals and other certification-related material is mailed to your HOME ADDRESS. Also, make sure we always have your current employment information and correct email address. If you have any questions, please email cfm@floods.org.

CFM Exam Going Digital

By Louie Greenwell, GISP, CFM

Converting the National CFM® Exam from a paper to digital format is a critical component of the CFM Modernization Initiative, which is part of ASFPM Certification Board of Regents’ (CBOR) five-year strategic plan. Last year, we released an RFP to solicit proposals to support us with the conversion of the exam and options for providing the exam in electronic format at testing center locations or at conferences. ASFPM staff is actively negotiating with a vendor we feel provides the association with the best solution to achieve our objectives.

It is anticipated that an electronic exam could be ready to pilot as early as Spring 2021. With multiple locations in virtually every state in the country and more than 1,300 testing centers in the US and abroad, future exam takers will be able to schedule their exam on the day and location of their choosing. Although the preferred examination delivery method is at physical testing centers, the current pandemic crisis reminds us that online alternatives are needed to provide maximum flexibility for those wanting to take the exam.

While there are lots of details still to be addressed, it is exciting to imagine a near-term future in which:

- Examinees will register for the exam online, take the exam at their convenience, and receive same day results.
- ASFPM will have students’ digital registration information, including their exam preparation (or lack thereof), and exam results to support exam question analytics.
- The exam will be in a secure, robust digital environment.

When fully-implemented, our initiatives to modernize the CFM® Program will strengthen and enhance our ability to maintain the CFM certification as the premier floodplain management professional certification in the industry.

Louie Greenwell, GISP, CFM, is president of the ASFPM Certification Board of Regents (CBOR).
Policy Matters!
Larry Larson, P.E., CFM
Director Emeritus – Senior Policy Advisor, ASFPM

Comments Sought on New BRIC Guidance

One of the key provisions of the Disaster Recovery Reform Act (DRRA) is a new mitigation funding program called the Building Resilient Infrastructure and Communities (BRIC) grant program. This program replaces the Pre-Disaster Mitigation (PDM) program with a formula-based program based on 6% of total disaster costs each year, with a projected yearly mitigation pot of about $200-$300 million.

ASFPM is sharing with you the much-anticipated release of the BRIC Policy and encouraging you to submit comments to FEMA:

• The BRIC proposed policy is available here.
• Please review the request for comment here.

FEMA published the proposed BRIC policy and asked for comments and input to be provided no later than May 11, 2020. This policy will guide the 2021 implementation and execution of this mitigation grant program. FEMA also developed and launched a website dedicated to BRIC, which includes key information and a summary of stakeholder input.

All of our readers are aware that ASFPM has a long history of promoting a stronger investment in mitigation funding, not only because it has a 6:1 benefit/cost ratio in use of taxpayer dollars by reducing flood damages, but it also makes homeowners and businesses safer and communities more resilient. This fund provides cost sharing grants to states, communities, tribes, and territories to build disaster resilience. The guidance is relatively broad with the hope it can result in innovative solutions to disaster risk mitigation, and will foster community, regional, state, and national partnerships in this effort.

We sent an email to the entire board and committee co-chairs asking for comments by May 4 since time is short, and we ask all who are reading this to provide comments as well. Please send your comments by that date to Tim Trautman and cc Larry Larson.

You will want to focus your comments on these major elements:
• principles
• funding (4 elements)
• eligibility
• uses (there are 4 subcategories the grants can be used for: technical assistance, capability building, mitigation projects, and management costs)
• eligibility criteria
• grant award administration
The guidance seems quite similar to what PDM, its predecessor, funded. However, there does not appear to be anything related to ecosystem restoration or priority for nonstructural and nature-based mitigation, which are important for long-term mitigation success. We plan to comment to support these approaches and urge you to do likewise. It is also worth noting that in addition to providing communities with funds to identify mitigation actions and implement projects that reduce risk to disasters, the guidance highlights that BRIC funds can be used by communities to support the adoption and enforcement of modern building codes. ASFPM supports this provision.

We are working to develop ASFPM’s input on this policy in the next couple weeks and we look forward to sharing that with you. In the meantime, we welcome your thoughts and comments on this policy that we can incorporate in our comments.

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**Voting is Now Open for Board of Directors**

The voting period for the 2020 Board of Directors Election is now open! All eligible voters should have received the ballot via email on April 6, 2020. If you didn’t receive an email, please check your spam folder or reach out to our Membership Engagement Coordinator Cate Secora to receive the link to the ballot.

The list of this year’s candidates, along with short bios and photos, can be found on the member portal. **The deadline to submit ballots is April 24, 2020.** For more information about the elections process or if you have any questions, please visit the [Board Elections page](#) on the website or send an email to Cate at [memberhelp@floods.org](mailto:memberhelp@floods.org).

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**Georgia Sea Grant to Coordinate Studies on Climate-Induced Population Shifts**

Georgia Sea Grant was recently awarded a $500,000 grant from the National Science Foundation to study human displacement and relocation caused by climate change, and the societal and economic implications of such population shifts.

Georgia Sea Grant, based at the University of Georgia, will partner with 12 other Sea Grant programs in five regions across the U.S. to create a research coordination network called, “People on the Move in a Changing Climate,” bringing together practitioners, resource managers and coastal stakeholders. Research outcomes will be shared through new education and outreach programs developed by Sea Grant programs that focus on resilience and adaptation.
From the Director’s Desk
Chad Berginnis, CFM
Executive Director, ASFPM

Siting Standards for Critical Facilities

A couple days ago, FEMA posted a fact sheet related to temporary critical facilities and floodplain considerations. Of course we are all aware of the extraordinary steps that the local, state, and federal governments are taking to battle the coronavirus, including the construction of temporary hospitals, mortuaries, or recovery facilities for COVID-19 patients. Unfortunately – and this is especially true when you are in the heat of battle – we typically do not give enough consideration to potential site-related hazards such as flooding. I am really pleased to see FEMA release this fact sheet as a great reminder of a type of development that requires careful planning.

What are critical facilities/development/action? The simplest definition I have seen over the years is this:

**A facility/development/action for which ANY threat of flooding is too great**

OK, so what exactly does that entail? Well, it could be a lot of things. That is why, instead of an exhaustive list of specific facility types, it is easier to define critical facilities by their impacts:

- Critical to the community’s public health and safety, especially during a flood event
- Essential to the orderly functioning of a community
- Storage or production of materials that are highly volatile, toxic, or explosive
- Facilities where occupants may be insufficiently mobile to avoid loss of life or injury (this would encompass many of the COVID-19 related facilities)
- Facilities that, when flooded, would create an added dimension to a disaster
- Facilities that, when damaged, can impact the delivery of vital services

Examples of critical facilities include but are not limited to emergency service facilities (i.e., fire stations or emergency operations centers), hospitals, retirement homes/senior care facilities, major roads and bridges, critical utility sites (i.e., electrical substations, water/wastewater treatment facilities), hazardous storage facilities, and so forth.

What are appropriate standards for siting/protecting critical facilities? Where possible, critical facilities should simply not be sited where there is any risk of flooding. Now that is easier than it sounds because most community flood maps do not show all flood risks. And other communities may simply not have any sites that are not flood prone. So with that, there is a hierarchy that should be followed:

1. Identify all flood hazards that may affect a proposed site for a critical facility. Start with your Flood Insurance Rate Map, but do not stop there. Is the site in a dam failure zone? Is it in an area protected by a levee? What is the protection level of the levee? Is there a small stream, drainage way, or conveyance of flood water in any proximity to the site? Is the site in a hurricane surge...
zone or tsunami zone that may not be on a FEMA flood map? Does the site have a history of flooding or standing water? What about high groundwater that could cause surface water flooding for long durations? It is very important that due diligence is exercised at this point. If any type of watercourse goes through or near the site, its flood hazard areas should be studied and mapped period.

2. Do not place a critical facility on a site prone to flooding, ever. Ideally, this also means using the future conditions floodplains (not just the present condition 100- or 500-year floodplain). Future conditions are an especially important consideration in areas subject to sea level rise and significantly increasing storm intensity.

3. If you must construct or improve a critical facility on a flood-prone site, at a minimum it should be protected/resilient to the 500-year level or flood of record, whichever is greater.

Other siting considerations include means of access to the facility – is there only one means of access to the facility or multiple? Is that means of access prone to flooding? Also, if the facility must be located in an area with some measure of flood risk, flood water velocity, debris, and erosion should all be considered.

If your community only relies on NFIP minimum standards for flood loss reduction, then your critical facilities are at high risk of flooding. You must have standards that go well beyond NFIP minimums specific to critical facilities to effectively protect them. If your community has adopted the most recent model building code that does not exclude flood standards, you will have a better level of protection for critical facilities. However, the best approach would be to have specific critical facility standards in your local floodplain management regulations, subdivision standards, and zoning. Your floodplain management code would handle building and siting requirements, subdivision standards can handle siting and access requirements, and zoning can handle specific prohibition of uses/facilities in certain areas. If you cannot change all three, then focus on your floodplain management regulations where you can address most, if not all, critical facility issues.

Where can I find out more?

There are several excellent resources on critical facilities. If you wanted to learn more about the origins of the concept of critical facilities then the two-page section on Critical Actions in the Further Advice on Executive Order 11988 publication produced by the Water Resources Council in the 1980s is a must read. FEMA has three detailed design publications that go in-depth on different aspects of critical facilities:

- Design Guide for Improving Critical Facility Safety from Flooding and High Winds (FEMA 543)
- Design Guide for Improving Hospital Safety in Earthquakes, Floods, and High Winds (FEMA 577)
- Reducing Flood Effects in Critical Facilities (FEMA Recovery Advisory 2)

Each state and territory has a floodplain management office. Most of them have produced model floodplain management codes tailored to that state, commonwealth, or territory that may include a higher standard for critical facilities. If you don’t know who your state floodplain manager is you can find them here.
In addition, ASFPM has a Guide for Higher Standards in Floodplain Management maintained by the ASFPM Regulations Committee. It has model ordinance language options related to critical facilities.

Finally, a note on prohibition of uses and takings. In a recent webinar I participated in on higher standard subdivision regulations, there was a lot of discussion and concerns about regulatory takings. Remember, that generally for a takings claim to have any possibility of success, the property owner must be deprived of most or all reasonable uses of the property. It would be hard to envision a situation where a specific provision in local floodplain regulations prohibiting critical facilities or actions in the flood prone areas, given the clear and direct tie to public health and safety, would ever be deemed a taking.

Your partner in loss reduction,

Chad

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**From the Flood Science Center**

The ASFPM Flood Science Center recently completed two extensive reports. We encourage you to check them out if you haven’t done so already.

**Flood Mapping for the Nation**

Since 1969, the U.S. has invested $6.6 billion ($10.6 billion in 2019 dollars) in flood hazard mapping, resulting in nearly $22 billion in losses avoided. But we are far from completing the job, as only a third of the nation’s streams have currently been mapped.

Congress must decide how quickly we need to have flood mapping available to every community, and then set a level of funding that will achieve that goal. Ultimately, floodplain mapping is a sound investment that saves lives, reduces flood losses, and keeps communities thriving, all at a 2-to-1 cost benefit for taxpayers.

Visit [Flood Mapping for the Nation](#) to learn more.

**Understanding and Managing Flood Risk: A Guide for Elected Officials**

This comprehensive flood guide walks elected officials through the key information they need to fulfill their floodplain management responsibilities before, during, and after a flood event.

FEMA released FEMA Policy #104-008-03 in February, prompting me to search through the Floodplain Manager’s Notebook archives. I found a column from May 2008 about accessory structures. So let’s see what, if anything, has changed. The following is lightly edited and my personal observations on the policy are [in brackets.] And you’ll note I am not commenting on agricultural structures – that’ll require a deeper dive.

Also, let me remind you that my columns are my opinions based on experience and published guidance. For official guidance on accessory structures and agricultural structures, community officials should contact NFIP State Coordinators, who in turn should contact their FEMA Regional Offices. I understand FEMA expects to publish guidance on the new agricultural structure and accessory structure policy give more detail.

Accessory Structures. And Yes, a Bit About Agricultural Structures.

Let’s talk about accessory structures, especially sheds. You know, the ones you can buy at Home Depot, Lowe’s, and similar stores and garden centers. The ones that Harry Homeowner and his neighbors put way out in the corner of the backyard. The ones that often are placed without regard for zoning setbacks and building codes, much less requirements found in local floodplain management regulations.

First, a little background. The NFIP requires participating communities to regulate development – and the definition of development is pretty all-inclusive. The NFIP doesn’t have exemptions for things that are small (such as small sheds), or “minor” activities. This brings to mind the opinion of an assistant attorney general in Maryland who, after reading the statute for the state’s floodplain regulatory program, said that it could be read that “even a teaspoon of fill” is a regulated activity. Of course, there’s lawyer-talk and there’s reality. But really, how many communities issue permits for sheds?

We’ll get back to the NFIP requirements in a minute. But first, you’ve probably noticed that I regularly refer to building code requirements. The International Building Code and the International Residential Code are adopted by many states (and also by many communities in states that don’t have state codes). These international codes have requirements for buildings in flood hazard areas. Communities with both building codes and floodplain management regulations should carefully examine the building codes, which are minimum requirements for buildings (and include some provisions that provide better protection than the NFIP minimums). FEMA Building Science posts excerpts of the flood provisions in the I-Codes.
and similarities and differences are explained in *Reducing Flood Losses Through the International Codes: Coordinating Building Codes and Floodplain Management Regulations*.

So now let’s talk about the building code and accessory structures. The IBC and the IRC both have lists of “work exempt from permit” and those lists include quite a few things. Both codes exempt “one-story detached accessory structures used as tool and storage sheds, playhouses, and similar uses, provided the floor area is not greater than….. square feet.” The IBC limits the size to 120 sq. ft., while the IRC limit is 200 sq. ft. Why the difference? I have no idea! It’s been that way since the 2006 editions.

As always with codes and regulations, one must be thorough. Note that while the IBC and IRC exempt accessory structures *from a permit* – both clearly state that exemption “shall not be deemed to grant authorization for any work to be done in any manner in violation of the provisions of this code or any other laws or ordinances” of the jurisdiction.

What that means is while a property owner doesn’t have to pull a permit to put a small shed in the backyard, the codes still apply. Code officials have told me that while they don’t go looking to determine whether accessory structures are compliant, they can take enforcement action if necessary.

And that brings us back to which requirements in local floodplain management regulations apply to accessory structures, and yes, even those small enough to be exempt from a building permit. Of course, small accessory structures can be elevated to or above the base flood elevation. And, because they are not residential (dwellings), they could be dry floodproofed (Zone A/AE only). But I think we can agree it’s unlikely that owners will choose those options.

The NFIP regulations don’t explicitly address accessory structures and do not have explicit provisions for wet floodproofing. What we think of as “wet floodproofing” is described in *FEMA Technical Bulletin 7 Wet Floodproofing Requirements* published in 1993. But look closely at TB 7 and you’ll see it says communities should handle wet floodproofing of accessory structures by variance. Well, decades ago many states negotiated with FEMA regional offices to establish a size limit to allow communities to issue permits for wet floodproofed accessory structures. [This allowance is now formalized in Policy #104-008-03, which indicates accessory structures can be approved “without a variance” (i.e., by permit) provided the structures are “less than or equal to a one-story, two-car garage” in Zone A and less than or equal to 100 square feet in Zone V – unless different sizes are approved by FEMA.]

So the next question is what requirements apply when someone wants to wet floodproof an accessory structure? TB 7 lays out the elements of wet floodproofing. They trace back to the rules for enclosures below elevated buildings: limited to parking and storage, elevated electrical and equipment, flood damage-resistant materials, and flood openings. [By my read of the new policy, the same elements outlined in TB 7 are still what’s required for wet floodproofing.] Keep in mind that if a shed or accessory structure is proposed in a floodway, the floodway encroachment requirements must be satisfied. For the latest on flood openings, check out the latest version of *TB 1 Requirements for Flood Openings in Foundation Walls and Walls of Enclosures*. And for Zone V, check out the latest version of *TB 5 Free-of-Obstruction Requirements*.
There is one more very basic NFIP requirement that needs to be addressed: all structures (including accessory structures) must be “adequately anchored to prevent flotation, collapse, or lateral movement of the structure resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy” (44 CFR 60.3(a)(3)(i)). You can appreciate the importance of anchoring if you’ve ever seen a dislodged shed slammed against another building or jammed under a bridge or plugging a culvert, causing backwater flooding. It’s my understanding that people can be held liable for damage caused by their actions – or, in this case, inaction if they neglected to anchor a shed that washed away and is shown to have worsened flooding and damage.

Some Important Terms – Keep These Differences in Mind

“Nonconforming” is not the same as “noncompliant.” A building constructed in violation of regulations or building codes is noncompliant: it does not comply with the requirements. Nonconforming, a term commonly used in zoning, refers to buildings that pre-date the adoption of regulations or codes. Thus, a building built before a community adopted its floodplain management regulations and FIRM (often called “pre-FIRM”) is nonconforming. Because it wasn’t required to comply, it is incorrect to call it noncompliant.

“Variance” is not the same as “waiver.” A variance is official permission to do something that is not otherwise permitted. The NFIP regulations provide for variances in 44 CFR § 60.6. Of particular note, variances are to be the minimum necessary to afford relief – not a wholesale permission to ignore all aspects of flood resistance. Communities must issue variances only upon a showing of good and sufficient cause, a determination that not granting a variance would result in exceptional hardship to the applicant, and a determination that increased flood heights, additional threats to public safety, extraordinary public expense, create nuisances, cause fraud on or victimization of the public, or conflict with existing local laws and ordinances. To waive something means to give it up or relinquish it voluntarily. For example, building codes typically allow building officials to waive or modify requirements for site plans with applications are for interior work and when otherwise warranted. Thus, one significant difference between variances and waivers is who initiates the action: a variance is requested by the applicant and a waiver is at the discretion of the code official.

Submit your own items or suggestions for future topics to column editor Rebecca Quinn, CFM, at rcquinn@earthlink.net. Comments welcomed! Explore back issues of the Floodplain Manager’s Notebook.
Out with the Old, in with the Updated. NFIP Technical Bulletins 1 and 5

The National Flood Insurance Program (NFIP) Technical Bulletins provide guidance for complying with the NFIP’s building performance requirements and are designed to help state and local officials interpret the NFIP Regulations. They are also a useful resource and reference for homeowners, insurance agents, building professionals and designers.

FEMA is updating the NFIP Technical Bulletins to improve their usability, credibility, and content while presenting them in a streamlined format. Technical Bulletins 1 & 5 were last updated more than 10 years ago. These updated editions incorporate the latest relevant codes and standards and state-of-the-art guidance and best practices. They were developed with significant stakeholder input to help local officials meet or exceed relevant NFIP requirements.

**Technical Bulletin 1 (TB 1), Requirements for Flood Openings in Foundation Walls and Walls of Enclosures** explains the NFIP requirements for flood openings in foundation walls and walls of enclosures below elevated buildings in Special Flood Hazard Areas. Flood openings equalize flood forces by allowing the entry and exit of floodwaters. This Technical Bulletin describes two options for satisfying the requirements, referred to as engineered openings and non-engineered openings. In addition to illustrating enclosures that require openings and those that do not, TB 1 covers the requirements and guidance for installation of openings. Updates include:

- New tables comparing National Flood Insurance Program engineered opening requirements with related building code requirements.
- Guidance on unusual configurations such as sloping sites, multiple enclosed areas, large enclosed areas, and sites with shallow flooding.
- New guidance on above-grade enclosed areas and two-level enclosures.
- Expanded discussion on completing the FEMA Elevation Certificate (EC) and the documentation required for certification of engineered openings.

**Technical Bulletin 5 (TB 5), Free-of-Obstruction Requirements** provides guidance on the NFIP free-of-obstruction requirement in Coastal High Hazard Areas (Zone V), as well as general construction methods that minimize flood damage potential in Zone V. TB 5 describes methods of avoiding potential building and site obstructions that could divert or obstruct floodwater and waves below elevated buildings which could impose additional flood loads on foundation systems or adjacent buildings. Updates include:
• New tables comparing National Flood Insurance Program free of obstruction requirements with related building code requirements.
• Clarification of the requirements for design certification in Zone V.
• New guidance on enclosed areas below elevated buildings, including louvers/lattice, above-grade enclosures, and two-level enclosures.
• Revised guidance of below-Base Flood Elevation building elements including mechanical, electrical and plumbing equipment, ducts, tanks and fixtures and others.
• Revised guidance of site development practices such as accessory storage structures, the use of fill and others.

For more information on FEMA’s National Flood Insurance Program’s Technical Bulletins, click here.
For more information on FEMA Building Science, click here.

More FEMA News You Can Use

April 2020 Revisions to the NFIP Flood Insurance Manual Posted Online

The updated NFIP Flood Insurance Manual, effective April 1, 2020, is now available online in the FEMA Media Library.

Here’s some of what’s new:

• Average total premium increase – about 10%
• Reserve Fund Assessment increases from 15% to 18%
• New guidance and rating for floodproofing
• January 1, 2021 – Preferred Risk Policies and multiplier increase 12.5%

Download here.

FEMA Extends Grace Period for Flood Insurance Renewal Premiums

FEMA continues to take proactive steps to address the COVID-19 pandemic and to help serve its NFIP customers who may be experiencing financial hardships, the agency is extending the grace period to renew flood insurance policies from 30 to 120 days.

To avoid a lapse in coverage, there is typically a 30-day grace period to renew NFIP policies. However, due to the widespread economic disruption arising from this pandemic, FEMA recognizes that policyholders may not meet the standard deadline.
This extension will allow additional time for policyholders who may be struggling financially to pay insurance premiums and ensure their policies are not cancelled for nonpayment of premium due to circumstances beyond their control.

If a policy has an expiration date between February 13, 2020 and June 15, 2020, then the NFIP insurer must receive the appropriate renewal premium within 120 days of the expiration date to avoid a lapse in coverage. Likewise, if a policyholder receives an underpayment notice dated between February 13, 2020 and June 15, 2020, then the NFIP insurer must receive the additional premium amount requested within 120 days of the date of the notice.

Policyholders who need additional time to pay their premiums, beyond the 120-day extension, should contact their agent or insurer to inquire about other options the insurer may offer for premium payment.

Goodbye Benefit-Cost Analysis (BCA) Toolkit Version 5.3. Hello Version 6.0

FEMA’s Benefit-Cost Analysis (BCA) Toolkit Version 5.3 will be sunset in April 2020 and will not be updated or supported. All BCAs submitted to FEMA on or after March 1, 2020, must be completed in BCA Toolkit Version 6.0. For installation instructions for Version 6.0, [click here](#).

Anyone needing technical assistance with the BCA Toolkit should contact the [BCA Helpline](#).

Emergency Operations Planning: Dam Incident Planning Guide

This FEMA guide is intended to help community planners create a plan to respond to dam incidents that take place in, or affect, their communities. Some communities will choose to address dam incidents in an annex to their emergency operations plan or comprehensive emergency management plan or as an appendix to other base planning products, or they will create a stand-alone dam incident plan. A general template is included in Appendix A for a community dam incident plan that can be adapted to meet each community’s needs.

[Download here](#).
NFIP Adjuster Claims Training Moved Online

In an effort to mitigate the spread of COVID-19, the remaining on-site 2020 NFIP Adjuster Claims Presentations have been canceled, and FEMA is offering webinar presentations in their place. If you registered for an on-site presentation, please note that webinar registration is not automatic.

Flood adjusters seeking to maintain or obtain authorization must attend an NFIP Adjuster Claims Presentation each calendar year. Go to FloodSmart.gov for information about the qualification process or to contact the NFIP Bureau & Statistical Agent. Standards and requirements for flood adjusters are found in the NFIP Claims Manual.

This course is approved for six hours of continuing education credit in Alabama, Arkansas, California, Delaware, Florida, Georgia, Indiana, Kentucky, Louisiana, Mississippi, New Hampshire, North Carolina, Oklahoma, Texas, Utah, and Wyoming. CE credit is provided at no cost to attendees.

Check the Adjuster CE information page for full details. If you have questions, please send an email to NFIP Training.

ASFPM Webinar Sprint! is off to a Strong Start

As we announced last month, ASFPM Webinar Sprint! is a new initiative developed to provide a convenient way for Certified Floodplain Managers to earn Continuing Education Credits (CECs) as we all work to stay safe at home during the COVID-19 pandemic.

Whether you are a CFM needing credits for your upcoming recertification deadline, interested in learning more about floodplain and flood risk management, or just getting stir crazy at your remote work station, ASFPM Webinar Sprint! initiative can help.

These webinars are designed to meet the diverse training needs of all our CFMs nationwide and cover such topics as: flood insurance, regulations and standards, nonstructural approaches, and many other critical areas of interest.

We’re delighted by the response to our first four webinars as hundreds of attendees logged in to each program to learn from our expert presenters. We’re planning to offer about 10 more webinars through June 30 – some completely free of charge while others will require a nominal registration fee.

Please watch your inbox for announcements of upcoming webinars we’re adding to the schedule. Visit our webinar page or contact training@floods.org to learn more.
Operations Report

By Ingrid D Wadsworth, CFM, ASFPM Deputy Director - Operations

How quickly the world came to a standstill in just a few short weeks. Unlike the usual disasters that we are all familiar with, this one hit us all, all at once. Yet, while we cry for those we have lost, we can also celebrate the human spirit on display daily as we sing from balconies, sew masks, cheer for our healthcare workers, and find big and small ways to help where we can in whatever ways we can. In talking with others in our ASFPM community, it’s clear we collectively rose quickly to meet new challenges and create new opportunities in response to the changing landscape.

The operations at ASFPM carry on with all of our staff safely working from their homes. Immediate needs were making sure we had a COOP (Continuity of Operations Plan), which identified our greatest requirements: IT infrastructure, calls, mail, finances, and payroll. Then came assessing the greatest needs of our community. With chapter conferences being cancelled, and a CFM renewal period of July 1, we focused on our more than 300 self-study online training classes, made our website easier to navigate, and sent alerts to our nation’s CFMs and chapter partners. Additionally we created an ASFPM Webinar Sprint, a series of approximately 12 free and low-cost webinars to guarantee there will be enough CECs available to cover cancelled chapter conferences. We made these webinars available to everyone, as a way to highlight the value of ASFPM membership.

Our annual national conference, June 7-11 in Fort Worth, is still pending, as of this writing. Most other conferences through May have been cancelled by the city of Fort Worth, but our June conference still remains under contract. We are considering a parallel virtual conference option should the in-person event get cancelled, and we fully intend to transfer or refund monies paid if that happens. We will keep information updated on the ASFPM Conference webpages and send out email notifications as soon as we can.

Lastly, let us know how we can help. Although we hope we’ll all be returning to normalcy soon, we want to make sure that we remain responsive and nimble to the needs of our membership. Stay healthy and safe. We will see everyone soon.

Floodplain Management Training Calendar

More than 300 pre-approved free and low-cost trainings are just a click away. These online programs provide a convenient way to earn CECs and deepen your knowledge of critical floodplain management issues.

Learn More.
Two Billion-dollar Weather and Climate Disasters Impact U.S. in First Months of 2020

The NOAA National Centers for Environmental Information is reporting that in the first three months of 2020, there were two weather and climate disaster events with losses exceeding $1 billion each across the United States. Both events were attributed to severe storms. The first severe weather event occurred across the South, Southeast, and Great Lakes states in January causing tornadoes, flooding, and coastal erosion. The second event occurred in March as tornadoes caused significant damage to the greater Nashville, Tennessee, area in addition to storm damage in surrounding states.

The March precipitation total for the contiguous U.S. was 2.83 inches, 0.32 inch above average, and ranked in the wettest third of the 126-year period of record. The year-to-date precipitation total was 8.02 inches, 1.06 inch above average, tying with 1937 as the 14th wettest January to March on record.
Almost Real-time Flood Prediction Tool May Boost Emergency Response During Hurricanes

By Vandana Suresh

By incorporating the architecture of city drainage systems and readings from flood gauges into a comprehensive statistical framework, researchers at Texas A&M University can now accurately predict the evolution of floods in extreme situations like hurricanes. With their new approach, the researchers said their algorithm could forecast the flow of flood water in almost real-time, which can then lead to timelier emergency response and planning.

“Not knowing where flood water will flow next is particularly detrimental for first responders who need to gauge the level of flooding for their rescue operations,” said Dr. Ali Mostafavi, assistant professor in the Zachry Department of Civil and Environmental Engineering. “Our new algorithm considers the underground drainage channels to provide an accurate representation of how floods propagate. This tool, we think, can vastly help disaster management because first responders will be able to see which way flood water will flow in real time.”

Hurricanes are notorious for wreaking havoc on shorelines, toppling trees, tearing down power lines and above all, causing severe floods. Conventionally, scientists have used physics-based models to predict where water might collect, overflow and cause flooding. In essence, these models capture how physical features of the earth’s surface and urban landscapes affect the flow of water over the ground.

While robust at predicting when and where floods will happen under most rainfall conditions, Mostafavi said these traditional models do not perform as well at predicting floods during incidents of torrential rainfall, like Hurricane Harvey.

“Physics-based models offer one perspective on how floods can spread, which is extremely useful, but the picture they provide is somewhat incomplete,” he said. “We wanted to use existing data on how past floods have spread through the drainage channels to develop a model that would be able to predict, within a certain level of preciseness, how future floods will spread.”

Drainage channels are an elaborate network of intertwined channels that meet together at junctions called nodes. Thus, flooding in one channel can directly or indirectly affect other channels and cause floods to spread, much like a domino effect.
To predict which way flood water will flow along drainage channels and cause an inundation, Mostafavi and his team developed a probability-based model that was fed, as one of its inputs, the water-level readings on flood gauges. These readings were for different time points during two major flooding events in Texas — Hurricane Harvey in 2017 and Houston’s Memorial Day flood in 2015.

Once their algorithm was trained on water flow patterns through the drainage network for these heavy rainfall events, the researchers tested if their model worked by checking if it could predict the flood patterns that had been observed during Houston’s Tax Day flood in 2016.

They found that their model achieved an accuracy of 85% in predicting how the flood propagated through the city’s drainage system during the Tax Day flood. Although the model was validated using a past flood event, Mostafavi said that the model’s success suggests that it will also be able to predict how new floods will propagate through the city’s drainage networks. This insight could help emergency responders take preemptive steps towards evacuations, he said.

Noting the caveats of their model, Mostafavi said that the performance of their algorithm could be compromised if the sensors on flood gauges fail. However, complementing the predictions coming from physics-based models with those from their team’s new algorithm can once again restore the accuracy of flood prediction.

“Traditional models and our data-driven models can be used to complement each other to give a more precise picture of where flood water will go next,” said Mostafavi. “Hurricanes of the magnitude of Harvey or Katrina are generally considered a one-in-a-thousand-year event, but they may not be as rare if we consider the changes in global weather patterns because of climate change. But we now have more robust tools to weather the storm.”

Other contributors to the research include Dr. Shangjia Dong and Dr. Hamed Farahmand from the Texas A&M Zachry Department of Civil and Environmental Engineering.

This research is funded by National Science Foundation’s RAPID project and CRISP 2.0 Type 2 project.

This article originally appeared on the Texas A&M College of Engineering website. Reprinted with permission.

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**Job Corner**

Be sure to check out available career opportunities on ASFPM’s website. It’s free, regardless of whether you’re looking at job postings, or an employer wanting to post an opening at your company, organization, or agency.
What We’re Reading

Is FEMA Getting Stretched Too Thin?

At a time when the Federal Emergency Management Agency (FEMA) is normally focused on hurricane readiness, it’s being tasked with leading the federal government’s response to the COVID-19 pandemic; leading many to wonder what will happen when areas of the country get hit by the more typical natural disasters.

As reported in the *New York Times*, as of April 3, the agency had sent teams to 26 states and more requests are likely. At the same time, the agency has had to suspend a major hiring initiative and close training facilities due to the virus.

According to the article, “The toll of FEMA’s dual mission — responding to the COVID-19 crisis, while also handling its normal job of dealing with natural disasters — is beginning to show up in its staffing figures. …That shortage is particularly acute among some of the agency’s most highly trained specialists. Six weeks ago, the agency reported having 44 members of its field leadership contingent — staff who are trained and certified to manage disasters around the country — available to be deployed. By this week, that figure had fallen to 19.”

Meanwhile, the National Oceanic and Atmospheric Administration (NOAA) predicts that 23 states would see moderate to major flooding by the end of May and researchers at Colorado State University warned that this year’s hurricane season, which starts June 1, is likely to produce 16 major storms, of which four were likely to become major hurricanes.

Archaeological Researchers Provide In-depth Look Yellow River Flood

Archaeological research on the destruction and subsequent reoccupation of ancient cities has the potential to reveal geological and social dynamics that have historically contributed to making urban settings resilient to these extreme weather events.

Using a combination of archaeological and geological methods, researchers examine how extreme flood events at Kaifeng, a former capital of dynastic China, have shaped the city’s urban resilience. Specifically, they focus on an extreme Yellow River flood event that historical records suggest killed around 300,000 people. They argue that the 1642 flood was extraordinarily catastrophic because Kaifeng’s city walls only partly collapsed, entrapping most of the flood waters within the city. Both the geology of the Yellow River floods as well as the socio-political context of Kaifeng shaped the city’s resilience to extreme flood events. The article includes a nice selection on images. Read it on *Nature*. 
Federal Judge Throws Out Challenge to CRC

A federal judge has dismissed a Maryland couple’s legal fight against North Carolina regulators to re-place a house destroyed by fire on the same site, one of the most rapidly eroding stretches of beach on the Outer Banks.

Coastal advocates and others say the decision upholds North Carolina’s doctrine that beaches are in the public trust and reinforces the state’s coastal management strategy and push for resilience in the face of climate change, but the couple’s attorney has vowed to continue the challenge. Read the full article in Coastal Review.

Disasters Amidst COVID-19: The Year Ahead

Hopefully, we won’t face a catastrophic hurricane, record-breaking floods on the Mississippi and Missouri Rivers, or massive California wildfires at the height of the COVID-19 pandemic. However, each of these events have happened in recent years, with frightening regularity. And while catastrophic disasters make national headlines, we also must remember that smaller-scale disasters are frequent occurrences and are already happening in the midst of COVID-19. The threat of simultaneous crises is already something communities are facing and it will not go away.

Read more of Anna Weber’s post on the intersection of COVID-19 and resilience.

Army Corps Says Flood Protection is on Pace

A massive effort by the Army Corps of Engineers to combat the COVID-19 pandemic is not interfering with levee repairs and other flood control measures, agency officials told E&E News.

Preparing the nation for spring floods remains a top priority as more than 15,000 Army Corps employees help build emergency medical facilities around the U.S., officials said. That accounts for almost half of the Army Corps’ workforce of 37,000 people. Read the full article.

Ellicott City Flood Mitigation Work Moves Forward

Maryland’s Howard County has acquired the former Phoenix Emporium building in Ellicott City, the last building needed to move ahead with a flood mitigation plan for the historic mill town that was hit hard by flooding in 2016 and 2018. Read more.
America’s Most Endangered Rivers of 2020

American Rivers released its annual list of America’s Most Endangered Rivers®, spotlighting 10 rivers that are vital to the nation and face imminent threats. It also named the Delaware River “River of the Year” — recognizing the river as an extraordinary example of restoration and a model for equitable and innovative clean water solutions.

Increasingly severe flooding fueled by climate change threatens the upper Mississippi and lower Missouri, the top two rivers on the 2020 list, underscoring the need for action by local, state and federal decision makers.

“Mixing poor river management with climate change has created a recipe for disaster,” Bob Irvin, president and CEO of American Rivers, said in a statement. “Lives, businesses and property are at risk. It’s time for our leaders to prioritize solutions that protect rivers and strengthen communities. Our health and safety depend on it.”

The Midwest continues to rely on dangerously outdated and insufficient river management as flooding increases with climate change. The 2019 Midwest flood left homes, farms, roads and businesses under water for nearly 100 days on the upper Mississippi River and close to a full year on parts of the Missouri River. According to NOAA, the 2019 flooding caused four deaths and $6.2 billion in damage. Yet river management decisions across the region are making the problem worse, allowing higher levees and risky floodplain development, and failing to adequately plan for the future.

On the #1 Most Endangered River, the upper Mississippi, American Rivers called on state and federal leaders in Iowa, Illinois, Missouri, Minnesota and Wisconsin to fund the “Keys to the River” plan. Officially named the Keys to the River 2020: An Upper Mississippi River Flood Risk, Sediment and Drought Management Study and led by the Army Corps of Engineers, it is the most ambitious attempt by any federal or state entity to respond to the economic and public safety threats to the upper Mississippi posed by climate change. If fully funded, it would be transformational in how the United States manages rivers and floodplains.

On the #2 lower Missouri River, American Rivers called on the governors of Missouri, Iowa, Nebraska, Kansas to initiate flood protection solutions that give the river room, and urged the U.S. Army Corps of Engineers to prioritize projects that deliver multiple benefits, including flood risk reduction and habitat restoration.

Top 10 List of Endangered Rivers

#1 Upper Mississippi River (IL, IA, MO, MN, WI)
Threat: Climate change, poor flood management

#2 Lower Missouri River (MO, IA, NE, KS)
Threat: Climate change, poor flood management

#3 Big Sunflower River (MS)
Threat: Yazoo Pumps project

#4: Puyallup River (WA)
Threat: Electron Dam

#5: South Fork Salmon River (ID)
Threat: Gold mine

#6: Menominee River (MI, WI)
Threat: Open pit sulfide mining

#7: Rapid Creek (SD)
Threat: Gold mining

#8: Okefenokee Swamp (GA, FL)
Threat: Titanium mining

#9: Ocklawaha River (FL)
Threat: Rodman Dam

#10: Lower Youghiogheny River (PA)
Threat: Natural gas development

Source: American Rivers
“Resiliency is the key to protecting our communities in an age of climate change. However, our poor mismanagement of the river means we can expect more dangerous and costly floods,” Jim Karpowicz, Missouri Coalition for the Environment, said in a statement “In a time when we should be maximizing the benefits of floodplains to absorb excess rain and runoff we are adding fuel to the fire by building higher levees and incentivizing floodplain development.”

Scientists estimate that extreme downpours in the U.S. could increase by 400 percent by the end of this century. One study found that the magnitude of 100-year floods in the Mississippi Basin has increased by 20 percent over the past 500 years, with much of that increase being caused by the combination of river development and climate change. A November 2019 study, Climate Change and the American Mind, found that a majority of Americans are worried about harm from extreme events in their local area, with 58 percent concerned about harm from flooding. The harshest impacts of climate change are often most prevalent in communities of color and economically disadvantaged communities. In the Midwest, wealthier towns are building higher levees, pushing floodwaters into poorer communities, perpetuating longstanding injustices.

Download the full report from American Rivers.

More Pavement, More Problems

A new Johns Hopkins University study has found that for every percentage point increase of roads, parking lots, and other impervious surfaces, annual floods increase on average by 3.3%. As reported in JHU’s The Hub, this means that if an undeveloped river basin increases the amount of impervious surfaces from zero to 10%, scientists would expect, on average, a 33% increase in annual flooding.

"If you're looking at a basin that you expect will urbanize in the next five years, these findings will give you a ballpark estimate of additional flooding to expect due to that urbanization," said Annalise Blum, a former postdoc fellow in the Department of Earth and Planetary Sciences and the paper’s first author.

The study was published in the Geophysical Research Letters, an open-access journal.
COVID-19 Impacts Flood Insurance Study Adoption

By Meg Galloway, P.E.

Effective on Monday, March 23, 2020, FEMA suspended all new 90-day appeal period starts for ongoing map projects, including Letters of Map Revision, and it will suspend issuing any new Letters of Final Determination (LFD) until April 30, 2020. At that time, FEMA will evaluate the current state of operations and decide if the temporary suspension can be lifted.

In the case of LFDs that are already in progress, FEMA cannot suspend the LFD or grant an extension to the six-month compliance period for adoption. As has always been the case, any community that does not adopt maps by the established effective date will be suspended from the National Flood Insurance Program (NFIP).

To prevent communities from being suspended from the NFIP, FEMA may consider rescinding the LFD for specific cases where there are limitations within a state or community related directly to the COVID-19 response which affect and prevent the adoption of a new map by the effective date. If the LFD is rescinded, the process will be restarted by updating the maps and FIS with the new effective date after which the new LFD will be issued. In cases where multiple communities have already adopted a new study, but a limited number of others have not, the rescission will impact all communities. Whenever possible, opportunities for remote public comment, remote adoption, etc. should be considered and exercised to prevent extra work for multiple communities.

In order to justify the delays a LFD rescission will cause, communities must document how delays are a direct result of COVID-19 responses from state and local officials. FEMA regions have been provided guidance in processing potential LFD rescissions. Communities should work with FEMA regional staff and their State NFIP Coordinator if they determine that they will need to request that the LFD be rescinded.

Meg Galloway is a senior policy advisor at ASFPM.

Have a story you’d like to share with ASFPM newsletter readers? Email us at editor@floods.org.
Welcome New Members

A big welcome to our newest ASFPM members who joined us in March.

Andrew Guerra, P.E., NM
Andrew W. Beasley, CFM, City of Knoxville, TN
Ashlie M. Jordan, St. Johns Cnty., FL
Austin M. Barnes, Marion Cnty., OR
Brandon Parsons, PLA, American Rivers, WA
Brandon Reich, Marion Cnty., OR
Brian J. Fischer, Enginuity Engineering Solutions, LLC, CO
Brynt D. Johnson, City of Oakland Park, FL
Caitlin K. Soley, EIT, CORE Consultants, Inc., CO
Carmelo Morales, P.E., City of Palm Coast, FL
Charles A. Kudlauskas, EI, Jefferson Cnty., CO
Chase Hunter Galloway, Galloway Construction, Inc., FL
Christina A. Sandoval, Yavapai Cnty., AZ FCD, AZ
Christina Springston, Town of Mount Pleasant, SC
Colleen Henderson, Ouray Cnty., CO
Dacia Mosso, Tetra Tech, VA
David Sutley, Dewberry Engineers, Inc., CO
David A. Hach, P.E., Diamondback Engineering, CO
Deborah L. Evison Bell, Missoula Cnty., MT
Devin M. Tolpin, Monroe Cnty., FL
Domingo Juan, III, Town of Mount Pleasant, SC
Elise K. Jackson, Kimley-Horn & Assoc., Inc., UT
Franklin L. Adams, City of Lakeland, FL
Jacob Brown, RESPEC, CO
James R. McBrien, City of Somers Point, NJ
James R. Romedy, Jr., Galloway Construction, Inc., FL
Jennifer M. Livermore, Jefferson Cnty., CO
Jessica Kuonen, New York Sea Grant, NY
John Andrew Gatlin, City of Morgantown, WV
Jose L. Nieves, Jr., City of Parkland, FL
Karen Lindquist, Green Stream Technologies, Inc., NC
Kathryn Grant, Propex GeoSolutions, TN
Lee Pierce, Propex GeoSolutions, TN
Marc A. Christiano, EIT, Ramboll, PA
Mark D. Kissing, City of Cape Coral, FL
Mark Timmerman, City of N. Augusta, SC
Marta Blanco Castano, GISP, Colorado Water Consvn. Board, CO
Mathew M. Karim, LEED GA, ENV SP, Christopher Consultants, LTD., MD
Matthew I. Turk, CBT Construction & Dev., Inc., FL
Meghan Moody, Weston & Sampson, SC
Michael L. Mallo, FEMA, CO
Michele L. Morris, Nature Conservancy, KY Chapter, KY
Michelle W. Cullum, P.E., Martin Cnty., FL
Paul Heam, Baralmar Advisors LLC, CT
Richard J. Cantin, MA
Robert C. Hunt, Nassau Cnty., FL
Ronald E. Coupland, III, EIT, Michael Baker International, AZ
Roxanne M. Johnston, City of Florence, OR
Ryan Patrick Dunne, P.E., West Yost Associates, CA
Stacey Belle Santiago Rodriguez, MPH, FEMA, PR
Tanja McCoy, City of Jacksonville, FL
Thomas G. Halko, FEMA, LA
Venkata S. Bayareddy, P.E., WSP USA, AZ
Wardell Edwards, ADECA-OWR, AL
William E. Lee, P.E., LEED AP, CFM, Town of Cary, NC
William T. Bond, CFM, City of Lawrenceburg, KY

If you have any questions about your membership, please contact memberhelp@floods.org
ASFPM Editorial Guidelines: ASFPM accepts and welcomes articles from our members and partners. “The Insider” and “News & Views” have a style format, and if necessary, we reserve the right to edit submitted articles for space, grammar, punctuation, spelling, potential libel and clarity. If we make substantive changes, we will email the article back to you for your approval before using. We encourage you to include artwork with your article in the form of photos, illustrations, charts, and graphs. Please include a description of the art, along with the full name of who created the art. If the art is not yours originally, you must include expressed, written consent granting ASFPM permission to use the art in our publications.

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