New Discussion Paper Examines Urban Flooding

The impacts of urban flooding, both financial and social, pose significant challenges to local government leaders, managers, and the citizens who reside in these at-risk communities.

Over the past decade, local government agencies and floodplain management professionals have taken a strong interest in identifying, mapping, managing, and mitigating urban flood hazards and, ultimately, reducing flood losses in unmapped areas. Where these flood-prone urban areas have been identified, strategies to address localized flooding typically come with very high capital improvement costs or feasibility challenges that are increasingly difficult to overcome.

Urban Flood Hazards: Challenges and Opportunities explores the challenges of urban flooding, outlines concepts related to planning and mitigation to reduce future flood losses, and provides recommendations at the local and national scale to address urban flooding in communities nationwide.

Developed by ASFPM’s Stormwater Management Committee, this discussion paper:

- Provides an overview of the challenges associated with urban flood hazards
- Offers a framework to assess, identify, plan, mitigate, and manage urban flood hazard areas to reduce future flood losses
- Suggests recommendations on the local and national scales to assist communities with identifying and mitigating urban flood hazards

Urban Flood Hazards: Challenges and Opportunities focuses on one specific area of urban flooding, mainly areas outside of riverine and coastal flooding zones that are inundated due to surface runoff, i.e. areas where excess stormwater runoff exceeds the conveyance capacity of pipe and roadway systems, resulting in flooding that inundates structures and prevents safe access for emergency vehicles and personnel. The paper is intended for local stormwater
and floodplain managers, but also serves as a valuable reference for all engineering and planning professionals within the floodplain and stormwater community.

“Floodplain stewards and stormwater managers face significant challenges in communicating urban flood risk due to the technical challenges and high costs associated with mapping these complex hazard areas,” the paper states. “Even when the hazard has been mapped, they may also face internal and external communication challenges in getting the public, senior government leadership, and politicians to acknowledge the associated risk. An additional communication challenge is overcoming a lack of willingness to make flood map information available to the public because of concerns regarding negative perceptions of flood insurance requirements, adverse impacts to property values, and public calls to fix the problem immediately in the absence of adequate government resources.”

The 34-page discussion paper is divided into five sections, with the majority of pages dedicated to options for addressing the issue. Here the authors offer a detailed framework for confronting the myriad of issues around urban flooding while explaining the specific challenges related to mapping urban flood hazards. The paper also offers detailed advice on how to develop a comprehensive risk communication, education, outreach plan.

**Urban Flood Hazards: Challenges and Opportunities** concludes with six recommendations, which are explored in greater detail in the paper:

- Identify and Map Urban Flood Hazard Areas
- Manage Urban Flood Hazard Areas at the Local Level
- Communicate Urban Flood Hazards and Risk
- Develop Local Building Construction Standards
- Employ Multi-Generational Approaches to Implementing Improvements
- Identify Flood Mitigation Funding for Urban Flood Inundation Areas

As the paper notes, Gilbert White’s maxim that “Floods are ‘acts of God,’ but flood losses are largely acts of man” is particularly instructive for planning.

Water finds a way to flow (down the path of least resistance), regardless of whether that area is developed or in a natural state. Human-scale disasters most frequently occur in areas where land is developed.

Download the discussion paper **Urban Flood Hazards: Challenges and Opportunities**
From the Director’s Desk

By Chad Berginnis, CFM
Executive Director, ASFPM

Holiday Season Reflections

Goodbye, 2020! Seriously, if we never have to face another pandemic in our lifetimes it will be too soon. Undoubtedly anyone reading this has been touched in one way or another by this past year’s events; yet I have to wonder if it is our training and experience with past disasters that has steeled our resolve and helped us, at least a little bit, cope with the grim reality of today. It seems that there has been so much upheaval this past year – even if you took out the natural disasters – that as the year draws to a close, we contemplate “what’s next?”

And that is where those ubiquitous words of peace, hope, and love ring especially true for me this holiday season and help me look forward to a better 2021.

Peace. Wouldn’t it be nice if we lived in a world at peace with our natural environment? A flood happens and nobody gets hurt, nothing gets damaged, with the nourishing rains helping to replenish the earth? Of course to get there, from a floodplain management point of view, we need to have policies and programs that begin to recognize the natural values of floodplains, steering folks out of harm’s way and robust mitigation programs to address the at-risk, built environment. While it may be a lofty goal, I feel nonetheless driven by its promise and it is the core of the ASFPM mission.

Hope. Without hope, where would we be? As floodplain managers, we are uniquely are suited to bring hope to those that may have lost everything, and offer a lifeline or way forward to those struggling to rebuild. And although it doesn’t feel that way when an upset homeowner or developer is chirping at you because you have just told them they can’t build in a certain way, you are investing in the hope that your community and future homeowners will not have to worry as much about flood risk. As Liam Neeson might say, floodplain managers have a “very particular set of skills.” We learn them and we use them. Also, it is the hope for a more perfect approach to dealing with flood risk that propels ASFPM’s policy work to always be forward leaning.

Love. Again, for me, the work of floodplain management and hazard mitigation has been a 27-year love affair. I find the unique challenges that floodplain managers face daily invigorating and as I often explain to folks just getting into this field maybe the reason I have been in the profession so long is that we have to deal with big, gnarly, complicated problems that are not easy to solve at all. Sounds like fun, eh? Also, I can’t help but to recognize the fact that many of our members and people in this profession have a true love for their neighbors and communities. This is what drives some into public service and for others it is simply a love for what they do. It is when a flood happens in your community and folks are not impacted that a floodplain manager smiles with the knowledge that the developments that you have carefully approved over the years were built more safely, even if nobody else notices. Or it is when you are able to see a flood hazard mitigation project through to completion and the relief on the faces of those homeowners that no longer have to deal with flooding.

Whatever your passion and motivation for being in this field of floodplain management, I want to thank you for dedicating your time, talent, and passion to helping us all be safer and more resilient. As we celebrate this holiday season, I am wishing each of you peace, hope, and love this holiday season and all throughout 2021.

Your partner in loss reduction,

Chad
Call for Nominations: 2021 ASFPM Awards

After the year we’ve all had, isn’t it time to celebrate the exemplary work being done throughout the nation? We think so, and we need your help to honor those who are working to make a difference.

We are now accepting nominations for the 2021 ASFPM Awards. These annual awards serve to recognize the outstanding contributions made by individuals, agencies, and organizations to keep communities safe from flood loss, promote resiliency, and advance the association’s mission.

Go here submit your nomination. The deadline is Feb. 10, 2021. Winners will be honored at the 2021 ASFPM Annual Conference in Raleigh, NC.

Learn more about the categories below. To see the list of past winners, visit the ASFPM website.

AWARD CATEGORIES

**Tom Lee State Award for Excellence** is given annually to recognize an outstanding floodplain management program or activity at the state level (not an individual)

**James Lee Witt Local Award for Excellence** recognizes outstanding local programs or activities at the front lines of floodplain management. Eligible entries include local units of government such as cities, towns and counties (not an individual).

**Larry R. Johnston Local Floodplain Manager of the Year Award** honors outstanding individual efforts and contributions at the local level. It recognizes an individual responsible for the development of a distinguished local program or activity, or one who struggles to implement flood hazard reduction at the local level in the absence of sophisticated programs and support.

**John R. Sheaffer Award for Excellence in Flood Proofing** is presented for completed work involving a particular project, work, research, design or publication that exhibits the incorporation of accepted procedures, practices and constraints of flood proofing, or promotes the field or knowledge of flood proofing by enhancing the awareness and use of new procedures, methods, designs and/or products. Individuals, private organizations or governmental units and agencies are eligible.

**Outreach/Media Award** acknowledges efforts of media to increase information and/or awareness of flood issues with the general public. It is also for an individual, agency or organization for exceptional outreach efforts.

**John Ivey Award for Superior Efforts in Certification** recognizes exceptional efforts to promote the professional certification of floodplain managers.

**Meritorious Lifetime Achievement in Floodplain Management Award** recognizes individuals who, throughout their career, have achieved success in a significant aspect of floodplain management. These efforts include policy, outreach, implementation, education, government, research, litigation or other actions that demonstrate the advancement of flood loss and risk reduction within the nominee's professional realm.

**Outstanding Chapter Award** recognizes an ASFPM chapter for exemplary practices and activities that deserve national recognition. It acknowledges distinguished works by a chapter in going above and beyond its mission in a way that can be shared and replicated by other ASFPM chapters.

**Goddard-White Award** is given to individuals who have had a national impact carrying forward the goals and objectives of floodplain management.

**Jerry Louthain Distinguished Service Award** is the highest award ASFPM gives to recognize individuals who, through their long-term efforts, have clearly influenced the work of the association.
Policy Matters!

By Larry Larson, P.E., CFM
Director Emeritus – Senior Policy Advisor, ASFPM

A Time of Change

As we approach the end of a very tough year, many of us are focused on what can be accomplished in the upcoming year. We will have a new national administration coming on board January 20 and a new Congress beginning a few weeks prior to that. Will we see changes (hopefully positive) in how the nation addresses management of flood risk? Will there be an increased recognition that good flood risk management relies on good local management of existing and future development rather than rushing in after the flood with loads of taxpayer dollars to rebuild again and again? Managing future development relies mostly on local communities that have strong regulations and codes as well as flood maps that show them what the flood risk is for development not just for today’s conditions, but the future risk for the lifetime of the proposed development.

There are critical new programs for mitigation that offer real potential to address some of these key issues. FEMA’s Building Resilient Infrastructure and Communities (BRIC) grant program is the first one that comes to mind; more effective ways to map future conditions is another. BRIC has already generated a few billion in funding that will begin to be available in 2021, but the decision on how much to provide for mitigation, and what to use it for, seems to have some room for interpretation from the current administration so we may see only $500 million. The decision-making process for the amount of funding allocated for flood mapping and mitigation typically starts with the proposed budget from the administration, and ASFPM will bring issues like these to the Biden administration’s attention in a number of ways. As the new administration appoints new people to head the agencies, we will also be educating them on how the nation can more effectively manage and reduce flood risk now and into the future.

But before any of that happens, there are two big issues the current administration and Congress will wrestle with as we close out 2020. First is another version of the COVID-19 economic stimulus, and we (our members and the organization) are telling Congress that local and state governments have been hit hard by the pandemic, resulting in rising costs and reduced state and local revenues that need to be supplemented now. The loss of revenue is impacting the ability of our members to manage flood risk, so providing funds to those local and state governments is extremely important. See page 9 for how you can add your voice to this ASFPM Engage outreach campaign, if you haven’t already done so. The pandemic has had unequal impacts on different income levels, so developers continue to build for those who are doing well financially, but local staff who guide that development may see their budgets significantly reduced, weakening their abilities to stay on top of risk management.

The second issue is reinstituting a federal flood risk management standard that will protect the taxpayers’ investment in activities they have already funded once. Building infrastructure like bridges, roads, and flood mitigation structures must meet a standard capable of meeting expected future conditions for the life of the activities or facilities so taxpayers don’t have to rebuild it again and again. We believe the new administration has the ability to reinstate such a standard that was administratively rescinded by the Trump administration. We will be explaining to the Biden administration how this standard protects not only taxpayers, but also property-owner investments in the most expensive thing they own — their home. We will keep members posted on our efforts to promote sound flood risk management with these new players and under these new circumstances.

Finally, on a personal note, I want to thank all of our members and supporting partners whose efforts have helped the ASFPM policy team and the association as a whole continue to make progress in raising awareness of flood risk issues and advancing the adoption of mitigation practices. Although the holidays will be different this year, I wish everyone a safe and peaceful holiday season and look forward to the promises and opportunities of the new year.
What You Need to Know About BRIC Grants

By Mary Bart

With the Jan. 29, 2021 deadline approaching for both the Flood Mitigation Assistance (FMA) grant program and the new Building Resilient Infrastructure and Communities (BRIC) pre-disaster mitigation grant programs, FEMA is continuing its aggressive outreach program to educate potential applicants about the types of programs it’s looking to fund.

As a new program, much of the attention is focused on BRIC, which replaces the Pre-Disaster Mitigation (PDM) program. In a recent FEMA podcast, David Maurstad, deputy associate administrator of FEMA’s Federal Insurance and Mitigation Administration, and Katherine Fox, assistant administrator for mitigation within the Federal Insurance and Mitigation Administration (FIMA), spoke about the BRIC program and offered insights into the application process.

BRIC came out of the 2018 Disaster Recovery Relief Act (DRRA) and authorizes FEMA to create a pre-disaster hazard mitigation program to support greater investments in mitigation planning and projects before a disaster. “The passage of DRRA provided FEMA with a unique and exciting opportunity to support proactive investment in community resilience,” said Maurstad. “We know that communities that plan and mitigate their risk can reduce the impact of a disaster, have quicker path to recovery, and most importantly, experience less disaster suffering.”

For FY20, FEMA will distribute up to $500 million through the BRIC grant program in the following manner:

- State/Territory Allocation: $33.6 million (up to $600,000 per applicant).
- Tribal Set-Aside: $20 million. All Indian tribal governments (federally recognized) may apply under the Tribal Set-Aside.
- National Competition for Mitigation Projects: $446.4 million (estimated). Remaining funds which are not awarded from the State/Territory Allocation or Tribal Set-Aside will be included in the national competition.

Eligible applicants can include any state or federally recognized tribe and territory that’s had a major disaster declaration in the last seven years.

“We believe that it’s a game changing, generational opportunity to advance resiliency unlike any time in the 20-year history of FEMA’s pre-disaster mitigation grant efforts.”

- David Maurstad, FEMA

Types of projects FEMA wants to see

According to the FY2020 Notice of Funding Opportunities, BRIC priorities are to:

- incentivize public infrastructure projects;
- incentivize projects that mitigate risk to one or more lifelines;
- incentivize projects that incorporate nature-based solutions; and
- increase funding to applicants that facilitate the adoption and enforcement of the latest published editions of building codes.

(Continued on page 7)
In addition, communities are encouraged, but not required, to pursue plan integration, which is a process in which communities look critically at their existing planning framework and align efforts. Integration of hazard mitigation principles into other local planning mechanisms (comprehensive plans, transportation plans, floodplain ordinances, etc.) and vice versa is vital to build a safer, more resilient community.

In response to questions from stakeholders about what does it look like to have innovative, infrastructure-related mitigation, this summer FEMA developed a mitigation action portfolio (MAP), which showcases a wide range of innovative hazard mitigation projects. FEMA says it hopes the examples highlighted in the MAP “inspire stakeholders to think big and bold in addressing natural hazards, while also considering additional benefits that can be achieved beyond reducing economic and human costs from disasters.”

FEMA is also looking to see projects that demonstrate innovative approaches to partnerships, such as shared funding alignments or project design, Maurstad said. For example, an innovative project may bring multiple funding sources or in-kind resources from a range of private and public stakeholders or offer multiple benefits to a community, in addition to the benefit of risk reduction, he noted.

FEMA hosted a webinar series this summer and developed program support materials that go into detail about how projects will be evaluated against those priorities. Additional webinars are planned between now and the application deadline. All BRIC resources are available at https://www.fema.gov/BRIC

Applications should be submitted through the new FEMA Grants Outcome (FEMA GO) system, which is intended to streamline the process to apply for, track, and manage FEMA grants. With so much money available through the BRIC program, FEMA is expecting a large number of applications and it hopes a strong start will help build momentum toward building a culture of preparedness.

“We believe that it’s a game changing, generational opportunity to advance resiliency unlike any time in the 20-year history of FEMA’s pre-disaster mitigation grant efforts,” said Maurstad.

**Application Deadline:** January 29, 2021 (3:00 p.m. Eastern Standard Time)
Digital Coast Act Passes, Heads to President's Desk

On December 2, the Senate approved by unanimous consent the Digital Coast Act and the bill is now heading to the president’s desk for his signature. The Digital Coast Act (S. 1069) was introduced by Senators Tammy Baldwin (D-WI) and Lisa Murkowski (R-AK) to inform and improve local state, regional, and federal capacities to manage the coastal regions of the country. Its passage represents a major victory for ASFPM and its partners.

ASFPM is among the eight founding members of the Digital Coast Partnership, which has been advocating for the National Oceanic and Atmospheric Administration’s (NOAA) Digital Coast Act since 2013. After lots of legwork, countless meetings on Capitol Hill, and a strong and steady push to educate and advocate, it’s gratifying to see it all come to fruition.

“As often happens with meaningful legislation, it can take years for seeds planted with policy makers to bear fruit,” said Chad Berginnis, CFM, executive director of ASFPM. “It has been quite a journey but in the end, the Digital Coast Act is good policy for the nation.”

“This legislation will strengthen the incredibly popular Digital Coast Program, which makes it possible for local leaders in our coastal communities to make decisions with clear, current, and useful information,” said Senator Baldwin. “While Digital Coast helps make management choices clear, the work behind those decision tools is incredibly complex. I am proud to support the great work of geospatial professionals and coastal management experts in the private sector and at all levels of government who make it possible for local leaders to have clear data that informs their decisions. The Digital Coast Act will strengthen this important program and support the great work they do to deliver top notch, reliable information relied on by emergency responders, coastal planners, and businesses.”

Learn more about the bill on ASFPM Engage
Leveraging the Power of ASFPM Engage!

By Meg Galloway, P.E., Senior Policy Advisor

When we launched the association’s redesigned website earlier this year, we gained access to a powerful new advocacy platform, ASFPM Engage! The tool provides a quick, easy, and effective way to reach out to your elected officials on legislative issues of interest to the floodplain management community.

We launched our first engagement, Support for FY 21 Floodplain Mapping Funding, in late September. The campaign targeted senators, encouraging them to support floodplain mapping funding of at least $263 million in the Senate appropriations bill, which would match what had already passed in the House. The result was 91 letters sent to 47 senators thereby reaching almost 50% of the Senate. Most importantly, when the Senate appropriations bill was recently released it contained $263M for floodplain mapping. This was likely due, in part, to the ASFPM Engage! effort to raise awareness of the issue.

Legislative staff stress the importance of getting the right message to the right people at the right time. Letters from constituents can be a significant factor in how individual members of Congress act on legislation. They need to know that the issue is important to you and, more importantly, why.

With that in mind, our second outreach initiative, Support for COVID-19 Economic Stimulus Aid for State and Local Government to Maintain Public Safety Services, was launched on November 18. The campaign is directed toward members of the House and Senate and provides general background on why states and communities need support in the next COVID relief bill. The initial response to this engagement has been excellent. To date, 271 letters have been sent to 129 members of Congress encompassing 31 states.

Since negotiations on a potential stimulus package will hopefully occur over the next week, it is still important to send messages and local stories to help Congress better understand the on-the-ground impacts of COVID response on state and local services. While reaching 62% of the states and senators is a good start, your message is still very important, especially for the 85% of the Representatives that have not yet been reached by the campaign.

Joining this effort is very easy. Just go the ASFPM Engage! webpage and click on the COVID-19 engagement. Once you add your contact information, you can be done in a couple clicks. There’s also the option to personalize the message by adding information relevant for your state and/or community. We hope you will consider adding your voice to this important effort. As we head to the new year, there will be even more opportunities to take advantage of this valuable tool. Together we can help advance the programs that will protect our communities from flood loss and build a more resilient nation.
FEMA Releases National Risk Index

FEMA announced the Phase 1 rollout of the National Risk Index, a new online resource that helps illustrate communities most at risk from natural hazards. To provide a holistic view of community risk, this online mapping application analyzes risk factors from 18 natural hazards in addition to expected annual losses, social vulnerability, and community resilience.

This release makes the underlying data available for use by state, local, tribal, and territorial partners. The National Risk Index can help communities, especially those with limited mapping and risk assessment capabilities, better prepare for natural hazards by providing standardized risk data for mitigation planning and an overview of multiple risk factors. Additionally, this data can help jurisdictions in developing a FEMA-approved hazard mitigation plan to help increase community resilience.

The tool is free and easy to use, and data from the site is available for download. FEMA is developing a comprehensive National Risk Index application to release later in 2021. Visit FEMA’s National Risk Index webpage to learn more about the data and the natural hazards that can affect your community.

Insuring Public Buildings, Contents, Vehicles, and Equipment Against Disasters

In the United States, federal, state, and local governments share responsibility for managing disaster risk. Whether the current allocation of risk between these different levels of government is appropriate is much debated. In this study, the authors contributed to this debate by improving the understanding of state and local financial risk management practices and the role that the FEMA’s Public Assistance (PA) program plays in these decisions. They found that a significant portion of state and local governments that are eligible for PA purchase some type of insurance for their buildings, contents, vehicles, and equipment (BCVE) but that the insurance share across all PA projects is low, meaning that FEMA is paying for a substantial portion of the repairs.

Regarding the role that the PA program plays in these decisions, the predominant view of experts consulted for the study was that the potential for FEMA assistance reduces state and local governments’ purchase of insurance. Finally, this report discusses several approaches for increasing insurance coverage for state and local governments and the trade-offs associated with them. These approaches include encouraging credit rating agencies to evaluate communities’ financial preparedness for disasters; requiring communities to analyze their risks in order to increase their awareness of them; requiring communities to cover a substantial first layer of loss; and eliminating PA for BCVE.

Download the report from Rand.

Gain a Global Perspective with the ASFPM International Committee

The ASFPM International Committee has published its first newsletter. This is a new outreach initiative for the committee, and the newsletter is designed to keep members informed of relevant new developments in flood risk management globally, the latest committee activities, and upcoming events that you might find of interest. Read it here.
How High is High Enough? Researchers Examine Uncertainties and Trade-offs

People who live in areas designated as river flood zones often seek to raise their homes. Now a team of Penn State researchers suggests that considering uncertainties can improve decisions.

"Many houses located along rivers in Pennsylvania are in danger of being flooded," said Klaus Keller, professor of geosciences at Penn State and co-lead of NOAA’s Climate Program Office Mid-Atlantic Regional Integrated Sciences and Assessments (MARISA) team. "Some houses are elevated high, some to intermediate levels, and some not at all. Why is this?"

People in river flood zones are looking for good strategies on how high to elevate their houses. FEMA recommends elevating houses to the height of a flood that has a 1% chance to occur in a given year, also known as the 100-year flood, plus at least one foot. This is the minimum elevation for which federal funding may be available. The researchers investigated if they might improve on this suggested elevation given uncertainties surrounding, for example, future flooding, the future value of money and the vulnerability of a house to flooding.

"Looking at the range of possible outcomes can help to improve decisions on how high to elevate a house," said Mahkameh Zarekarizi, former Penn State postdoctoral fellow, now a hydroclimate scientist at Jupiter Intelligence. "It is arguably better to fail in a computer model than in real life. In the computer, we can look at many possible future outcomes of flooding, costs, and other uncertainties."

According to the authors’ findings, 68% of the hypothetical homeowners could reduce the likelihood of being flooded and the net costs by considering protections a few feet above FEMA’s minimum recommendation. While their study is location-specific, the framework can be applied to other flood prone areas and used to evaluate economic impacts due to climate variability and change.

"The decision makers may benefit from a map that shows the trade-offs between these goals," said Vivek Srikrishnan, assistant research professor, Earth and Environmental Systems Institute. "Home owners may want to see, for example, the total net price of reducing the risk of being flooded. A single recommendation such as the 100-year flood height plus at least one foot is silent on this question."

The National Oceanic and Atmospheric Administration, Climate Program Office; The Penn State Initiative for Resilient Communities; the Center for Climate Risk Management; Penn State’s Rock Ethics Institute; Penn State Law and Penn State’s Hamer Center for Community Design supported this work.

Read the full research article in Nature Communications.
EESI Report Offers 30 Recommendations for a Resilient Future for Coastal Communities

Across the United States, coastal communities face increased uncertainty and risks from intensifying coastal erosion, flooding, sea level rise, and other climate change impacts. Nearly 100 million Americans live in coastal counties making up about 30 percent of the U.S. population; another 30 million people (9 percent) live in the Great Lakes region.

Through creative partnerships, innovative program design, and intentional community engagement, practitioners and researchers around the country are carrying out new work to adapt to the rapidly changing coastal environment. These efforts would be enhanced and more successful with increased support and assistance from the federal government.

EESI recognized the need to educate policymakers by sharing the experiences of coastal communities that are working to adapt to climate change and enhance their resilience to severe weather and natural hazards.

Organized by six major sections—Community at the Forefront, Land Use and Development, Cultural Heritage, Climate Adaptation and Resilience Data, Disaster Preparedness, and Financing Adaptation and Resilience—this report provides a comprehensive overview of regional coastal resilience efforts based on panelists' presentations made during the briefing series. In addition to the 30 specific recommendations, this report offers six guiding principles intended to inform the implementation of coastal resilience policy:

- Federal policies and programs must be designed and implemented based on the climate of the future rather than the climate of the present or past.
- **Climate justice and equity** must be fully embedded into new policies and programs and incorporated into ongoing efforts.
- The federal government should take a leadership role in connecting science with practice, and support and expand collaborations with state, local, and tribal efforts.
- The federal government should take a leadership role to ensure that intra- and inter-agency coordination helps states, local governments, and tribes to access available coastal resilience resources.
- Federal investments in coastal communities must be leveraged to create local jobs and help develop a workforce trained in adaptation and resilience.
- Climate adaptation and resilience work should complement and, when possible, contribute to a decarbonized, clean energy economy.

These recommendations are brought to life by specific examples of climate solutions in practice today that also hold promise for the future. These various initiatives, projects, examples of community leadership, and funding mechanisms are models for the work that is still needed to accelerate resilience for all coastal communities. Download the full report.
Coastal Flooding is on the Rise

New analysis shows that coastal flooding is not only happening more often, it is striking more places at once. Analyzing hundreds of hourly tide gauge datasets from NOAA, the oldest of which dates back before 1950, Climate Central scientists found an increasing trend in the annual maximum number of tide gauges concurrently measuring flood-stage water levels. Further, the analysis found that September 22, 2020 set a September monthly record for the number of concurrent coastal floods, with flood-stage water levels recorded at 84 currently active coastal tide gauges around the U.S.

The National Oceanic and Atmospheric Administration (NOAA) is predicting higher than normal or “King” tides, raising the risk of coastal flooding. These king tides are the result of the confluence of warm, expanding ocean waters during the fall, seasonal changes in winds and currents, and a perigean spring tide (the higher-than-normal high tides and lower-than-normal low tides that occur when the moon is at the closest point to the Earth in its orbit and there is a full or new moon).

King tides do not always cause coastal flooding, but they raise the risk—and sea level rise elevates the risk even more. The combination of higher than normal tides and sea level rise means that several locations along the West, Northeast, and Southeast coasts are predicted to exceed the high tide flooding threshold because of tides alone—no storm or rainfall needed.

Sea level rise has made this type of coastal flooding, often referred to as “chronic,” “nuisance,” or “sunny day” flooding, increasingly common. High tide flooding has doubled in frequency since 2000, and could double again, or even triple, by 2030.

Even low levels of flooding can have serious consequences for coastal communities. Climate Central analyzed the threat to people, property, and infrastructure at risk from a two-foot flood above the high tide line, a typical minor flood according to NOAA thresholds. It found that nearly half a million people are at risk from a two-foot flood in the U.S. About a third of this population is ranked high on the social vulnerability index. This index identifies communities that may need assistance in preparing for or recovering from disasters due to socioeconomic factors.
Heartfelt thanks to our donors!

Thank you to our donors and volunteers for making #GivingTuesday on Dec. 1 a huge success! This year the ASFPM Foundation set an ambitious goal—to raise $20,000 on #GivingTuesday—with all proceeds going to its Future Leaders Scholarship fund. ASFPM Chapters helped us spread the word. Dewberry provided a matching gift for the first $3,000 in donations. An anonymous donor then provided a second matching gift for the next $5,000 raised.

By the end of the day, the foundation received $21,845 in gifts, which is a little more than one year of scholarship funding! We also were thrilled that the number of individual donors nearly tripled over last year. Because of your generosity, more students like Jesus Mulgado and Elizabeth Lacey, will be able to pursue their dreams of becoming flood risk management professionals.

#THANKYOU

Coastal GeoTools 2021 – Registration is Now Open

Coastal GeoTools continues to be THE place to experience what’s new and forward-thinking in terms of technology and coastal management. In this virtual environment, you will continue to experience everything this conference has to offer — top notch sessions, training opportunities, the tools showcase, plenaries, and the exhibit hall.

The 2021 virtual conference registration rate is $200-less than half the standard rate. Register now.

Attendees will also be able to access and view the conference sessions for a few months after the conference, in case there is a session you miss or want to watch again! Visit the conference website to view the preliminary program.
11th Annual Student Paper Competition

Are you currently enrolled in a college or university in a flood risk management related field? Would you like an opportunity to present your paper at the Association of State Floodplain Managers annual national conference in Raleigh, North Carolina this May?

Eligibility:
Any student currently enrolled at any college or university in a flood risk management related field is eligible to submit. The related fields include, but are not limited to, engineering, geology, geography, planning, and public administration. Papers may be written by a team of students, but only one scholarship will be awarded to each of the top three teams, and only one person from each team will be invited to attend the conference as our guest to present the paper. The intent of this scholarship is to assist current students and as such we require they be enrolled throughout the competition.

Submission Process and Timeline:
Abstracts must be submitted by Feb. 1, 2021 via email to asfpmfoundation@floods.org. Students must also submit an enrollment certificate or unofficial transcript which most universities provide free of charge to demonstrate active enrollment status.

- Abstracts will be reviewed by an ASFPM Foundation panel and three finalists will be invited to submit a full paper. Students will be notified by Feb. 15, 2021 whether they’ve been selected.
- Finalists’ full papers will be due by Mar. 31, 2021 along with an updated enrollment certificate or unofficial transcript.
- The three finalists will receive free registration at the ASFPM annual national conference, free lodging at the conference hotel, domestic air travel and up to $200 reimbursement of meal and other travel expenses to make their presentations at a special student session during the conference on May 11, 2021.
- Papers and student presentations will be judged by an eminent panel of floodplain managers. Winners will be announced at the awards luncheon on May 13, 2021.

Prizes:
First Place: $1,000 scholarship; Second Place: $500 scholarship; Third Place: $250 scholarship.
*** All prizes also include a complimentary one-year student membership in the Association of State Floodplain Managers.

Learn more
Remembering Bo Temple

Retired Major General Merdith Wyndham Bolling “Bo” Temple died Nov. 1 in Richmond, VA at the age of 67. He was a member of the ASFPM Foundation Executive Board of Trustees, which he joined in 2013 after retiring from the US Army Corps of Engineers (USACE). As a trustee, he was a strong advocate for the next generation of floodplain management professionals and was instrumental in shaping the foundation’s Future Leaders Scholarship.

Foundation President Doug Plasencia remembered Bo as someone with a deep commitment to the organization and profession and who “was always looking for ways to move our foundation forward.” Remarkling that “we all are better people because of Bo.”

“Bo was a tremendous individual who had a great vision of how the nation needed to address disasters, especially flood losses,” said Larry Larson, ASFPM’s senior policy advisor. “I had the pleasure of working with Bo for many years as he worked many leadership positions in USACE; and was very pleased when he joined the foundation as a trustee. He surely contributed greatly to the foundation mission and activities. We will miss him greatly.”

Formerly acting chief of engineers and Corps commanding general, Temple also managed Corps civil works, where he had oversight of the $14-billion post-Hurricane Katrina construction program in New Orleans and vicinity as well as $4.2 billion in Corps construction under the 2009 American Recovery and Reinvestment Act.

Related to Katrina lessons learned, Temple spoke with Engineering New-Record about “disaster amnesia everywhere across our country,” which “needs to be tempered with reality. We can’t change the culture, but we can change how people and politicians think about these issues.” A C-SPAN recording of a Sept. 2005 address about critical infrastructure protection can be found here.

During his 37 years of service, Temple led a diverse and demanding career across numerous assignments. He started as a platoon leader in the 44th Engineer Battalion, then later assigned to the 548th Engineer Battalion, as executive officer, S-3 (Air), and a company commander. It was during this period that he was deployed to Saudi Arabia in support of Operations Desert Shield and Desert Storm. He was later selected to be the 307th Engineer Battalion Commander, then the Chief of Engineering Branch at NATO Headquarters in Izmir, Turkey, the 20th Engineer Brigade Commander, and G-3, XVIII Airborne Corps – to list only a few. Along the way, he earned his master’s degree in Civil Engineering from Texas A&M University.

In addition to his distinguished military career, Temple received the Outstanding Projects and Leaders Lifetime Achievement Award for Government from the American Society of Civil Engineers in 2013.

In an email, LTG Scott A. Spellmon, Commanding General with USACE, wrote about some of Temple’s achievements and contributions to the profession: “As many of you know, MG(R) Temple’s service to the USACE Headquarters is nothing short of remarkable! Beginning in 2005, MG(R) Temple served as the Director of Military Programs, moving next to be the Deputy Commanding General for Civil Works and Emergency Operations, then as Deputy Chief of Engineers and Deputy Commanding General, USACE. Although he earned his nickname ‘Bone Crusher’ during his Airborne days, he used to say he really earned the title during his acting Chief/USACE Commander days.

“Bo was a gifted leader whose legacy lives on in every future engineer in the Army Regiment and the Corps. We all stand on the shoulders of this giant – a true patriot by any definition. Please join me in honoring the life and accomplishments of Major General(R) Merdith Wyndham Bolling ‘Bo’ Temple, an Engineer Soldier, Combat Veteran, inspiring leader, devoted husband and loving father.”
It’s Time to Renew Your ASFPM Membership!

Membership renewal season is upon us! By now you’ve already received notification that you can renew your membership for 2021 online through the member portal. When you renew, please be sure to also check that your contact information and email preferences are up-to-date so that you can continue receiving our emails with important association and committee information! If you have any questions or concerns, our membership engagement coordinator is only an email away. You can reach Cate Secora at memberhelp@floods.org

Welcome New Members

Karla A. Resendiz-Dominguez, City of Sioux Falls, SD
Mike Sasarak, P.E., City & Cnty. of Denver, CO
Meaghan M. Owens, HIT, CFM, EnSafe Inc, TN
Holly G. Hamilton, City of Waldport, OR
Mariah L. South, City of Sioux Falls, SD
Neville R. Pereira, P.E., CBO, Santa Clara Cnty., CA
Jess Tanciangco, Santa Clara Cnty., CA
Ed Duazo, Santa Clara Cnty., CA
Yi Chan, CFM, Texas Water Dev. Board
Rifka Wine, P.E., CFM, Bohannan Huston, CO
Karen M. Menne-Jacobsen, P.E., CFM, Ayres Assoc., Inc., WI
Ellen R. Herbert, Ducks Unlimited, TN
Steven Tatlow, Missouri Emerg. Mgmt. Agency
Robert G. Seleen, City of Milwaukee, WI
Erol A. Gudul, AECOM, MN
Patrick J. Sejkora, City of Eden Prairie, MN
Alexander L. Bauch, CDM Smith, CO

Robert L. Lemley, CFM, Floodproofing.com, NJ
Mary E. Carlson, P.E., JVA, Inc., CO
Daniel E. Korf, P.E., Houston Engineering, Inc., ND
Jackie P. Arntson, EIT, SRF Consulting Group, Inc., MN
Andrew K. Smith, Moore Engineering, Inc, ND
Jennifer A. Goldman, Souder, Miller & Assoc., CO
Michelle Rioux, Tencate, MI
Danielle Quick, City of Poquoson, VA
Brandon K. Wagner, P.E., Quick Compliance LLC, SC
Kathryn Adele Galinaitis, City of Madison, AL
Dawna J. Carlson, CFM, Yavapai Cnty., AZ
Andrea L. Long, City of Aurora, CO
Kamron S. Yates, Carroll County Area Planning, IN
Mitigation Planning Policy Update Summary of Feedback

FEMA is updating the state and local mitigation planning policies for the National Mitigation Planning Program. These policies guide the review and approval of state and local hazard mitigation plans. The policies are also known as the Mitigation Plan Review Guides, and are FEMA’s official interpretation of the hazard mitigation planning requirements in the Code of Federal Regulations (44 CFR Part 201).

The National Mitigation Planning Program provided several opportunities for engagement around the policy updates in July and August 2020. This engagement included a broad call for ideas and feedback. More than 550 federal, state, local, academic, and non-governmental partners shared nearly 440 comments over the course of the engagement period. Topics ranged from general comments on mitigation planning and training to specific feedback on plan requirements.

The National Mitigation Planning Program has summarized these comments in a report available online.

Next steps
The stakeholder engagement process provides FEMA with many good ideas and considerations for the updates to the State and Local Mitigation Plan Review Guides. Moving forward, the general update process is to review and incorporate applicable comments from the public engagement process as well as comments from within the agency as the policies are revised. Dedicated teams will be working on preparing the updated state and local policies.

FEMA estimates release in early 2021. The policies will become effective one year from the release date, allowing ample time for FEMA to provide training and technical assistance to state, local, and territorial partners regarding the changes. States, territories, and local governments will also have time to make any adjustments needed to ensure that plans will continue to meet FEMA’s requirements for approval.

FEMA Revises Publication Requirements for Community Eligibility Status Information Under the NFIP

FEMA has issued a final rule regarding publication requirements of community eligibility status information under the National Flood Insurance Program (NFIP). FEMA is replacing outdated regulations that require publication of community loss of eligibility notices in the Federal Register with a requirement that FEMA publish this information on the Internet or by another comparable method. FEMA is also replacing its requirement that the agency maintain a list of communities eligible for flood insurance in the Code of Federal Regulations with a requirement that FEMA publish this list on the web or by another comparable method.

ASFPM expressed support for the changes during the public comment period, as did the Massachusetts Department of Conservation and Recreation. ASFPM also provided feedback on the use of the Community Status Book (CSB), and requested the FEMA develop a second tool to compare the CSB to determine which communities are eligible, providing a mechanism for users to find communities not otherwise found in the CSB.

(Continued on page 19)
FEMA Study Highlights Benefits on Higher Building Code Standards

Using big data, FEMA’s modeling of the 18.1M buildings constructed in the United States since 2000 has found that the nation has benefited to the tune of $1.6 billion in savings each year. These savings represent the cumulative losses avoided from property damage associated with using the International Codes or similar building codes during floods, hurricanes, and earthquakes. FEMA projects that, by the year 2040, the nation will save around $3.2 billion in savings per year. This adds up to almost $133 billion in total losses avoided from 2000 to 2040.

Those dollar values represent considerable financial reasons for why communities should be proactive in adopting and enforcing hazard-resistant building codes. The study’s results fully support FEMA’s mission to help people prepare for, mitigate, respond to, and recover from natural hazards, specifically through programs and efforts that promote using hazard-resistant building codes.

FEMA is developing outreach materials that will help programs across the agency convey the study’s results to our state, local, tribal and territorial partners. The Building Codes Saves Study, which details the methodology, results, and conclusions is available on FEMA’s website.

Deadline Approaching for FEMA Hazard Mitigation Grants

As we noted in the article on page 7, the application period for FEMA’s fiscal year 2020 Hazard Mitigation Assistance (HMA) grants under the Flood Mitigation Assistance (FMA) and new Building Resilient Infrastructure and Communities (BRIC) programs is now open. All applications must be submitted no later than 3:00 p.m. EST on January 29, 2021.
USGS Unveils Mobile Flood Tool for the Nation
The U.S. Geological Survey released a mobile tool that provides real-time information on water levels, weather, and flood forecasts all in one place. The new USGS National Water Dashboard will help inform forecasting, response, and recovery efforts for agencies such as the National Weather Service, FEMA, U.S. Army Corps of Engineers, and other federal, state and local agencies.

Presto Chango: How Flood Map Revisions Allow Building in Risky Areas
Developers regularly use flood map changes to build in areas vulnerable to flooding after getting FEMA to approve measures such as elevating homes, building retention ponds and raising the land with fill. FEMA requires such changes if development will raise the flood level in the floodplain by more than a foot. From Oct. 2019 through Sept. 2020, FEMA considered 3,128 map change requests that involved developers using fill, an agency spokesperson told FairWarning. About 90 percent were approved.

4 Opportunities to Shore Up Coastal Ecosystems and Communities
There are affordable, feasible solutions to the threats that coastal communities face that will enhance the resilience of coastal ecosystems, restore coastal integrity, and empower a just economic recovery. Achieving this will require all elements of society to actively promote and implement these solutions.

Managing Heavy Rainfall with Green Infrastructure: An Evaluation
Pittsburgh’s Negley Run watershed is a prime example of stormwater management challenges facing so many urban communities. Underinvestment coupled with heavy rainfall leads to regular flooding of a key road corridor. In this project, RAND researchers use simulation modeling to evaluate present and future risks in Negley Run from sewer overflows and flooding given future rainfall uncertainty. The authors then evaluate proposals for a phased series of green stormwater infrastructure (GSI) investments.

Why Mispricing the Risks of Sea Level Rise Could Prove Costly
The fact that home prices are slow to reflect new information about sea level rise suggests that continuing polarization around climate science and the federal programs that insulate lenders from flood risk, could lead to distorted investment into more risky coastal regions.

Lessons Learned From A Levee Victory
Stopping a levee proposal was a big win for the Great Rivers Habitat Alliance. Here the author talks about the importance of routinely following the agendas of local governments in the regions your organization may cover. By learning about and objecting to the Elm Point levee early on, it was easier for the city to listen to the alliance’s arguments and end the project before expending taxpayer money.

Parametric Insurance and Climate-Related Risks
When climate-related natural disasters — like wildfires and hurricanes — strike in the United States, state and local governments need to consider new tools to raise cash. International experience with parametric insurance products offers some innovative options. But parametric insurance has yet to gain significant uptake in the U.S. public sector. This article explains why and what can be done about it.

Rethinking Minimum NFIP Requirements to Sustain Cooperative Federalism
Enforcement of minimum NFIP regulations is a real challenge, with non-compliant communities costing the program tens of millions every year. By adopting better land use planning, using technology to identify multiple flood hazards and allowing communities flexibility in how they reduce flood risk, we can sustain cooperation across all levels of government to fulfill FEMA’s mission to protect lives and property.

(Continued on page 21)
House Raising on the Coast
A homeowner on the coast of Massachusetts shares her experiences and challenges of raising her house, including advice for others and lessons learned. The article includes lots of photos of the process as well as how the house looks now that it’s complete.

STATE NEWS

CALIFORNIA

SF estuary flows into restored marsh for first time since 1800s
The first phase of a highly touted tidal marsh recovery plan was recently completed when a levee was breached and the restored marsh area was reconnected to the San Francisco Bay estuary for the first time since the late 1800s. The restored area includes 566 acres of tidal marsh and subtidal habitat, 45 acres of seasonal wetlands and 19 acres of high tide refuge and bird nesting habitat.

NORTH CAROLINA

State invites applications for N.C. Resilient Coastal Communities Program
The North Carolina Division of Coastal Management will select up to 20 municipal and county governments throughout the 20 coastal counties of North Carolina to receive no-cost direct technical assistance services to complete Phases 1 and 2 of the N.C. Resilient Coastal Communities Program. The submission deadline is January 15, 2021.

Is your home in a flood zone? Program to buyout flood-prone homes
Heavy rain that led to historic flooding in Charlotte also caused flooding along the Catawba River Friday. A voluntary evacuation order was issued Friday morning as the river swelled and threatened homes and property. Now, some residents are selling their homes to Charlotte-Mecklenburg Storm Water Services.

OHIO

H2Ohio making progress with new wetland
The Ohio Department of Natural Resources (ODNR), in partnership with Black Swamp Conservancy, is transforming 54 acres of frequently flooded farmland located along the Sandusky River into a public nature preserve. The site will become a natural, functioning floodplain with wetlands, meadows, and woodlands that naturally filter nutrient pollution from water flowing into the river, Sandusky Bay, and ultimately, Lake Erie.

SOUTH CAROLINA

All Hazards Vulnerability & Risk Assessment
This new assessment report found that almost 90% of all residential properties in the City of Charleston and at least 70% of all other property types are vulnerable to storm surge. The report is expected to assist in setting budget priorities, long-term resilience planning, comprehensive planning, and capital expenditures.

VIRGINIA

Virginia offers $1 million in grants for floodplain and dam safety projects
Dam owners and local governments may now apply for $1 million in matching grants from the Virginia Dam Safety, Flood Prevention and Protection Assistance Fund. All grants are reimbursements and require a 50 percent match.
Record-Breaking Atlantic Hurricane Season Comes to a Close

The extremely active 2020 Atlantic hurricane season came to an official close on Nov. 30 with a record-breaking 30 named storms and 12 landfalling storms in the continental United States. This is the most storms on record, surpassing the 28 from 2005, and the second-highest number of hurricanes on record.

The 2020 season got off to an early and rapid pace with a record nine named storms from May through July, and then quickly exhausted the 21-name Atlantic list when Tropical Storm Wilfred formed on September 18. For only the second time in history, the Greek alphabet was used for the remainder of the season, extending through the 9th name in the list, Iota.

### 2020 Atlantic Hurricane Season by the numbers

<table>
<thead>
<tr>
<th>Category</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hurricanes</td>
<td>13 (Average season has six)</td>
</tr>
<tr>
<td>Named storms</td>
<td>30 (Record)</td>
</tr>
<tr>
<td>Major hurricanes</td>
<td>6 (Average season has three)</td>
</tr>
<tr>
<td>Storms that hit the U.S. coastline, (5 of which came ashore in Louisiana)</td>
<td>Previous record 9 in 1996</td>
</tr>
<tr>
<td>Named storms that formed in September</td>
<td>Most for any month on record</td>
</tr>
<tr>
<td>Rapidly intensifying storms sampled by NOAA and the U.S. Air Force</td>
<td>12</td>
</tr>
<tr>
<td>NOAA Hurricane Hunters</td>
<td>86 Missions conducted</td>
</tr>
<tr>
<td>NOAA underwater hurricane gliders</td>
<td>47 Glider deployments</td>
</tr>
<tr>
<td>Hurricane eyewall passages</td>
<td>102</td>
</tr>
<tr>
<td>Gathered observations</td>
<td>13,272</td>
</tr>
<tr>
<td>Flight hours</td>
<td>678</td>
</tr>
<tr>
<td>Temperature and salinity profiles</td>
<td>179,401</td>
</tr>
<tr>
<td>These help improve forecasts for current storms</td>
<td></td>
</tr>
<tr>
<td>Dropsondes deployed to gather vital atmospheric data</td>
<td>1,772</td>
</tr>
<tr>
<td>NOAA weather satellites in operation</td>
<td>16</td>
</tr>
<tr>
<td>5th consecutive above-normal season</td>
<td>Previous record: 4 from 1995 to 2001</td>
</tr>
<tr>
<td>Facebook Live broadcasts</td>
<td>86</td>
</tr>
</tbody>
</table>

This is the fifth consecutive year with an above-normal Atlantic hurricane season, with 18 above-normal seasons out of the past 26. This increased hurricane activity is attributed to the warm phase of the Atlantic Multi-Decadal Oscillation (AMO) — which began in 1995 — and has favored more, stronger, and longer-lasting storms since that time. Such active eras for Atlantic hurricanes have historically lasted about 25 to 40 years. An average season has 12 named storms, six hurricanes, and three major hurricanes.

The 2021 hurricane season will officially begin on June 1 and NOAA’s Climate Prediction Center will issue its initial seasonal outlook in May.

Do you have a story or important news announcement you’d like to share with ASFPM newsletter readers?
Email us at editor@floods.org
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