



An exclusive publication for ASFPM members

Reducing Flood Risk: Lessons from the Midwest

Successful strategies and common barriers for implementing flood mitigation projects

By Kristin K. Smith, PhD, and Amanda Savitt, PhD

Flooding is the most common and expensive natural disaster in the United States. In 2019, historic flooding along the Missouri, Mississippi, and Arkansas rivers resulted in more than \$20 billion in damages. Floodwaters overtopped levees and stayed above flood stage for months — impacting more than 14 million people.

Living with and adapting to flooding is possible, but few models exist to guide communities. In early 2020, researchers from Headwaters Economics interviewed more than 60 experts on flood risk and mitigation strategies. Interviewees identified communities that were doing innovative work to decrease flood risk.

From these conversations, five communities were selected for in-depth case studies. The result is a new report titled [Building for the Future: Five Midwestern Communities Reduce Flood Risk](#).



Flood mitigation projects in Lincoln, NE were part of a larger community redevelopment project, which included Union Plaza Park. (Photo courtesy of the Nebraska Tourism Commission)

The report highlights five success stories from across the Midwest that showcase strategies that local and regional leaders have taken to strengthen their communities and reduce their flood risk. Each case study explores a mitigation project, including funding strategies and practical lessons learned.

Flood mitigation work is challenging. Planning and constructing projects can take years or even decades, forcing communities to work hard to maintain community support. Because projects tend to be expensive and infrastructure funding is piecemeal, projects are often built incrementally as money becomes available. Local leaders must also navigate complex federal and state programs and coordinate engineers, consultants, and other stakeholders. Projects that cross jurisdictional boundaries, such as county or state lines, require additional organization, time, and money.

These challenges underscore the hard work and creativity needed to complete mitigation work. The five

(Continued on page 3)

The Insider

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Editorial

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Inside this issue:

Reducing Flood Risk: Lessons from the Midwest	1
Interagency Work, Community Efforts Mitigate Wicked Flood	4
Building Flood Resilience in a Changing Climate	6
Washington Legislative Report	7
WRDA Slides into Enactment	11
Coastal Flooding Threatens Affordable Housing	13
ASFPM Conference Registration Opens in February	14
State Resilience and Assessment Planning Tool	14
Floodplain Manager's Notebook	15
Floodplain Manager's Notebook—Market Value Supplement	16
GivingTuesday Update from ASFPM Foundation	18
News from FEMA	19
Grading the Mississippi River Watershed	20
Mapping the Unmapped	21
Order Erased by Trump Could Help Biden Address Rising Seas	21
Flood Insurance Committee Corner	22
Elevation Certificate Training Videos from CRS	22
News Briefs	23
Welcome New Members	25
Member News	28
ASFPM Awards Deadline is Feb. 10	28

(Continued from page 1)

communities in this report have each successfully implemented projects to decrease their flood risk:

- In **Austin, Minnesota**, residents rallied around a downtown flood project and approved a local option sales tax to make the project financially feasible.
- **Fargo, North Dakota's** diversion channel crossed state lines and FEMA regions, creating logistical challenges for project organizers. The project's leadership team creatively resolved funding and political challenges to get the project off the ground.
- A watershed district worked closely with community stakeholders to implement a large regional project in **Grand Island, Nebraska**, to increase floodwater storage and protect downstream communities
- The project team in **Lincoln, Nebraska** used a redevelopment project to restore the watershed in a racially diverse neighborhood, conducting more than 1,000 community meetings throughout the process to address community needs and build support.
- In **Tulsa, Oklahoma**, the city incorporated its master drainage plan goals into its planning processes, helping to ensure stormwater management is always front of mind in the city's decision-making.

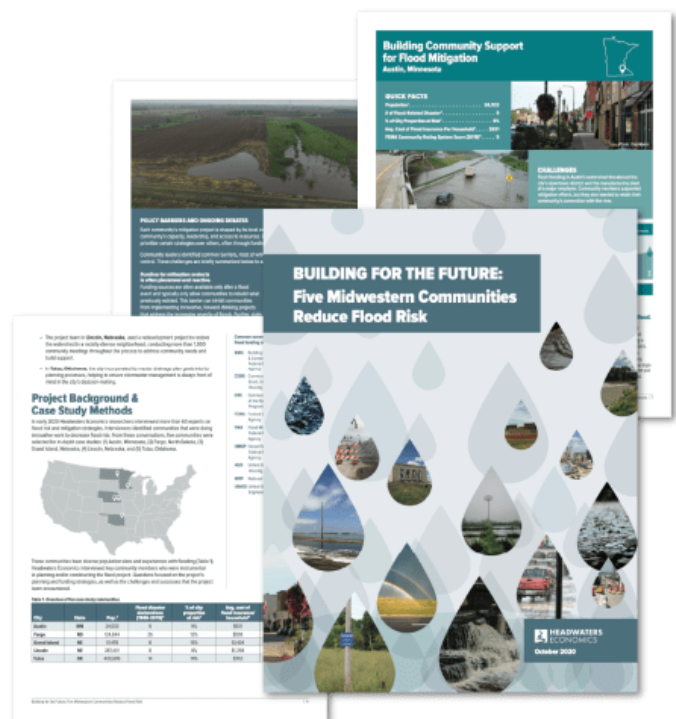
The case studies illustrate a wide variety of approaches to addressing flood risk, and although each case study offers its own set of lessons, several common themes emerged that can help other communities that face similar risks. These themes are explored in the report, but in brief the lessons are:

- It is easier to fund and build support for mitigation projects when they create social and economic opportunities beyond reducing flood risk. Common co-benefits of mitigation projects include (but are not limited to) improving transportation infrastructure, increasing water quality, and creating new recreation opportunities such as parks, trails, sports fields, and hunting opportunities.
- A project's funding strategy should identify potential funding sources and also include projections of how the project will impact municipal budgets in the long term. Projects often require a mix of funding from local, state, federal, and private grants and loans.
- Regional projects are typically more effective at addressing flood risk but are also more expensive and time-consuming to coordinate. Regional organizations such as watershed districts that cross jurisdictional boundaries can play critical roles.
- Mitigation projects are political and thus demand meaningful community engagement. Often those living in the most at-risk parts of a community are the most vulnerable.
- Mitigation projects are an investment in the future. While these projects are longterm work and require ongoing maintenance, proactive strategizing and planning can save communities millions in avoided costs.

The case studies are presented as stand-alone documents that can be read either together or separately. Collectively, they present a range of mitigation projects, funding strategies, and governance arrangements that communities and regions have used to successfully decrease flood risk.

[Download Building for the Future: Five Midwestern Communities Reduce Flood Risk.](#)

Kristin Smith leads research and community engagement related to flood mitigation for [Headwaters Economics](#). Amanda Savitt is a co-founder and the executive director of the [Center for Climate Adaptation Research](#).



Interagency Work, Community Efforts Mitigate Wicked Flood Risk in Rossville, Kansas

By Brian Rast, USACE Kansas City District

Flooding on Cross Creek in Rossville, Kansas, has become an increasingly worrisome problem. A new Silver Jacket effort seeks to mitigate the flood hazard before Rossville suffers a permanent setback. A team of planners, hydraulic engineers, geospatial analysts, and economists from the U.S. Army Corps of Engineers (USACE) Kansas City District is working to connect the community to the agencies with the most appropriate resources.

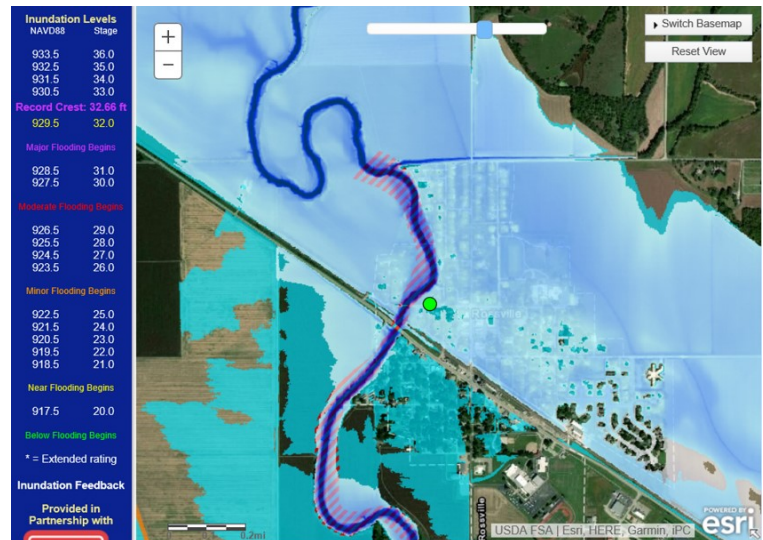
Rossville is a small town of about 1,100 residents outside of Topeka, classified by FEMA as a disadvantaged community. Flooding in June 1982 prompted town officials to ask USACE for help. USACE conducted studies, but those didn't lead to construction at the time. Another major flood struck in 2005. A Silver Jackets effort set up a flood warning tool in 2012. And then another flood in 2015 impacted the town's school and businesses.

The USACE team built on past work and listened to its state and federal partners. The prior engineering analysis showed that bridge and channel widening would not mitigate flood hazards. Additional analysis showed that upstream detention by the Cross Creek Joint Watershed District helps but doesn't completely resolve the flood risk. A diversion around the north side might help, but then could simply pass the flood impacts on to Silver Lake, Kansas, just downstream. In short, the problem is too complex to solve by building a single feature. The team concluded that an interagency solution is needed when flooding is a wicked problem.

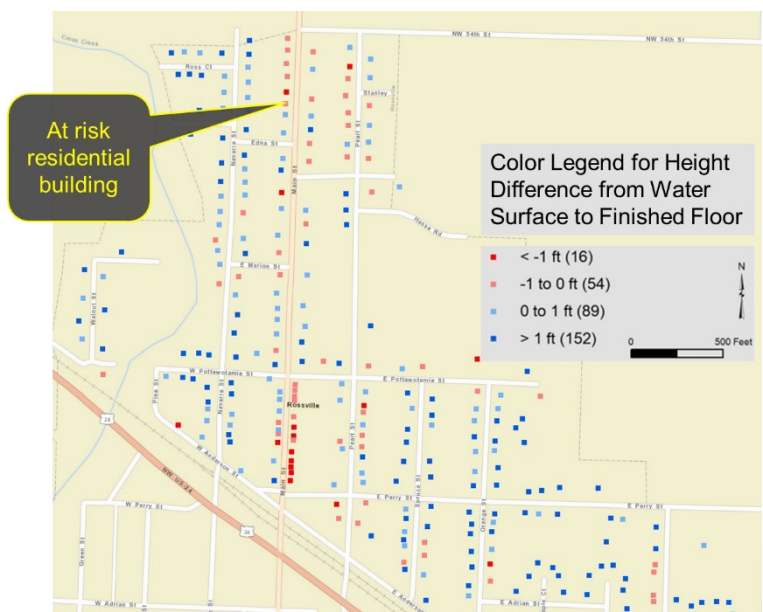
The team created a map to assist in plan formulation for more solutions that looks similar to the FloodFactor, a not-for-profit (First Street Foundation) flood identification tool for potential homebuyers that has recently garnered significant media attention. The map showed that a significant flood risk exists for buildings in Rossville.

The team focused analysis on the consequences of flooding, rather than the probability, which means figuring out the best measures to avoid damage within the floodplains rather than changing the floodwaters' behavior. The team developed alternatives that would use buyouts, building elevations, or relocations as solutions.

While at-risk buildings are both residential and



The NWS Advanced Hydrologic Prediction Service provided an interagency tool in partnership with KDA DWR, USACE, and USGS in Rossville.



The USACE team made a map of buildings colored depending on finished floor elevation compared to the base flood elevations.

(Continued on page 5)

(Continued from page 4)

commercial, many business owners have realized the risks. Steve Samuelson, the NFIP Coordinator with the Kansas Division of Water Resources, wrote about these in the [June 2020 Kansas Floodplain Management Tips, "Rossville Knows How to Flood"](#).

Samuelson points out that many buildings in Rossville demonstrate adaptive flood protection measures. In Figure 4, photo number 1 shows a floodwall around the building. This floodwall has grooves in the cement to install barriers at door openings. Building 2 is a community center with no carpet or sheet rock, built so that floodwater that gets inside can be easily cleaned up. Furniture is simple and flood resistant. Building 3 has a raised floor keeping all contents above potential floodwaters. Building 4 is the city library with impervious brick walls. Only the front and back doors need sandbags, and the building also has an 8-inch raised floor with access. The project team observed these and other proactive measures that had already been implemented. Because these measures offered a learning moment, Lead Silver Jackets Coordinator Brian Rast organized a building flood resilience training workshop with Samuelson in October 2019.



Fig. 4. Businesses along Main Street in Rossville Kansas, have adapted to repetitive shallow flooding and may be more resilient to more severe floods as well. (Photos courtesy of Steve Samuelson)

(Continued on page 6)

(Continued from page 5)

As the project analysis unfolded, planners discovered a residential building that used a mini-floodwall like Building 1. Unfortunately, residential construction cannot get reduced flood insurance premiums like nonresidential construction. While such measures diversify and improve the Rossville risk reduction portfolio, in terms of preventing economic loss, arguably none of the measures is as cost-effective as a FEMA flood insurance policy.

The team completed economic analysis for 73 properties in October. Evaluated measures include residential building elevations and buyouts. Building elevations proved difficult, and the team found only two would be feasible. A reformulated alternative for buying out a subset of 17 properties found a benefit/cost ratio over 1.0, and the cost is estimated at roughly \$3.1 million. By comparison, the cost of the bridge widening and channel project from the earlier studies was about \$13.4 million. The city hopes to use the analysis to apply for [FEMA's fiscal 2020](#) Hazard Mitigation Assistance (HMA) grants under the [Flood Mitigation Assistance](#) (FMA) and new [Building Resilient Infrastructure and Communities](#) (BRIC) programs, which are now open. (All applications must be submitted no later than Jan. 29, 2021, through the [FEMA Grants Outcomes system](#).)

The National Mitigation Investment Strategy is pushing federal partners to do more projects like this, in which they coordinate and connect relatively resource-poor communities like Rossville with the agency that has the most suitable flood solution. The Rossville situation shows that various measures may help, but individual measures cannot solve the flood risk problem alone. Collaboration among several federal partners may be necessary. [Silver Jackets](#) is tailor-made for facilitating such collaboration.

Article provided courtesy of the U.S. Army Corps of Engineers. Reprinted with permission from [The FRM Buzz Newsletter](#), Dec. 2020.

Building Flood Resilience in a Changing Climate

A series of reports on flood risk management in mature economies around the globe provides an international perspective at how different countries are approaching the various challenges they face.

Developed by the Geneva Association, the findings are at least partly encouraging. Governments recognize that floods are a critical issue. They are taking action to protect those most exposed to flood risk and assisting populations that may not be able to protect themselves. They are also increasingly prioritizing building resilience to floods.

But there is still more to do. The studies reveal disproportionate investment in response over sustainable recovery and measures to effectively reduce the risk. Governments need to be better coordinated, particularly across federal/national and local levels, and at the same time embrace and define shared responsibilities with other stakeholders.

The collection of flood risk management reports includes reports on the United States, Canada, England, Germany, and Australia. The reports can be downloaded [here](#).



Washington Legislative Report

By Meredith R. Inderfurth, ASFPM Washington Liaison

2020 and the 116th Congress Are Done



After a flurry of activity during the lame duck Congressional session following the November elections, the 116th Congress finally ended the morning of January 3 after passing a huge omnibus appropriations bill covering the rest of Fiscal Year 2021 and including a major coronavirus stimulus package.

Although that was a Sunday, the Constitution requires that the new Congress convene by January 3 — so January 3 it was!

At this writing, the two special elections for Georgia's Senate seats will take place on January 5. The outcome will determine whether the Senate Majority is in the hands of Republicans or Democrats. Whichever party holds the majority will determine not only Senate leadership, but committee and subcommittee chairs and allocation of committee membership, as well.

With the new Congress sworn in, important agenda items for the Senate will be considering and voting on President-Elect Biden's nominees for key administration positions. This is an important step to enable the new administration to "hit the ground running."

Appropriations, Future Budget and Another Stimulus Package

The Omnibus "Comprehensive" Appropriations bill (H.R. 133) provides funding for the entire federal government for the remainder of Fiscal Year 2021 until September 30, 2021. It is a huge, \$1.4 trillion bill combined with the \$900 billion in stimulus and assistance due to the coronavirus pandemic, running some 5,600 pages in length. The legislative agreement took months to negotiate and when the final version was released shortly before the voting took place, most members of the House and Senate had very little time to read and digest all of the measure's contents. Links to the various elements of the appropriations section and links to elements of the stimulus section can be easily accessed in a December 21 press release from the House Appropriations Committee. That can be found by going to: <https://appropriations.house.gov/>.

With a new administration taking office on January 20, it is likely that the proposed federal budget for FY 2022 will be delayed. Usually the budget request comes out in February, except in the years when a new administration is taking over.

While many nominees for the Cabinet-level and White House staff positions have been announced, many of those will require Senate confirmation. Transition "landing teams" are finally at work on taking over the reins after a delay in approval for access to current officials and documents. According to the press, there is still resistance to cooperating from some Trump administration officials, further delaying the effective and efficient transfer of responsibilities.

The anticipated delay in release of the next budget request will also delay the usual process of Congressional appropriations hearings on individual federal department and agency budget requests. That process, which would usually begin in late February/early March may well not begin until late March or even April.

The incoming Biden administration and Congressional Democrats have committed to early consideration of an additional stimulus package. Presumably, such legislation can be expected early in 2021. Passage of

(Continued on page 8)

(Continued from page 7)

another major COVID-19 assistance bill appears uncertain at present and will be significantly affected by which party controls the Senate following the special election in Georgia.

Lots of Activity During the Lame Duck Session

Any lame duck session at the close of a Congressional session usually involves a flurry of last-minute legislative actions, but this one included an unusual number of bills of interest to ASFPM members.

Several bills were passed and sent to the President and one almost made it, but fell just short.

Water Resources Development Act (WRDA 2020)

At the last minute during House/Senate negotiations over the Omnibus/Stimulus legislation, WRDA was included in the bill. So, it was signed into law by the President on December 27.

The House had passed its version earlier in the year. The Senate Environment and Public Works Committee had released its draft bill. During intensive negotiations over several months among House and Senate committee members and staff, a bipartisan, bicameral final product emerged in December (S. 1811). The Chairmen of both the House and Senate committees had committed to continuing the tradition of passing a WRDA every two years. There was a long hiatus between 2007 and 2014, but the Congress has succeeded in adhering to the biennial schedule since then.

An article on page 11 provides more information about the contents of this WRDA, which includes important provisions promoting consideration of nature-based alternatives by the Army Corps of Engineers, increased help for repetitive loss and economically disadvantaged communities, and promoting enhanced use of technical assistance mechanisms.

Digital Coast Act

After many years of near misses, the Digital Coast Act (S. 1069) has finally passed both Houses of Congress and has been signed into law by the President.

The bill authorizes the Digital Coast project at NOAA as a full-fledged program with annual funding of \$4 million. Digital Coast has been in operation for more than a decade and has proven its great value in providing “more than data” for coastal risk management – providing enhanced tools, training, and support for coastal communities’ planning and decision making. ASFPM is an active participant in the Digital Coast Partnership along with a number of other organizations. Key sponsors of the legislation have been Senator Tammy Baldwin (D-WI), Senator Lisa Murkowski (R-AK), Rep. Dutch Ruppersberger (D-MD) and Rep. Don Young (R-AK).

National Landslide Protection Act

This bill (S. 529 and H.R. 1261) was originally passed by the House in June 2019, but was finally passed by the Senate as H.R. 8810 during the lame duck session.

The bill officially authorizes a Landslide Hazards Program at the U.S. Geological Survey. This broadens the existing program and requires coordination with other federal agencies. It directs identification of landslide risks, strategies to reduce losses, protection for at-risk communities and improvement of communication and emergency preparedness. It requires the program to map and assess landslide hazards and coordinate with states, local governments, tribes and territories. The bill authorizes \$37 million annually for four years for the various aspects of the program.

Section 5 of the bill authorizes \$40 million annually for four years (FY 2021 – 2024) for the 3DEP (3-dimensional elevation program). The bill notes that the high resolution data is obtained via LiDAR, IfSAR or other topographic methods. Three main goals are to: 1) provide 3D high resolution elevation data coverage for the U.S., 2) coordinate and facilitate the collection, dissemination, and use of 3D elevation data among federal departments, agencies, and non-federal entities, and 3) produce standard, publicly-accessible 3D elevation products. This 3DEP data is very important for the accuracy of FEMA’s flood risk maps.

(Continued on page 9)

(Continued from page 8)

STORM Act

The STORM Act or the Safeguarding Tomorrow through Ongoing Risk Mitigation Act passed both the House and Senate during the lame duck session and was signed by the President on January 1st.

The bill (S. 3418 and H.R. 3779) allows FEMA to provide capitalization grants to states to set up revolving loan funds for hazard mitigation assistance to reduce risks from natural disasters, including floods. The bill authorizes appropriations for the grants up to \$100 million annually for two years - FY 2021 and FY 2022. Key sponsors were Senator Gary Peters (D-MI), Senator Ron Johnson (R-WI), Rep. Angie Craig (D-MN) and Rep. Rodney Davis (R-IL).

NOAA Commissioned Officer Corps Amendments Act

This bill (S. 2981) extends and boosts the authorization for a team of professionals including "Hurricane Hunters," researchers, deep sea divers, and others. The measure increases the size of existing such teams by 55 percent. The primary sponsor of the legislation was Senator Dan Sullivan (R-AK).

The bill passed both the Senate and House during the lame duck session and has been signed by the President.

Bills Expected to be Re-introduced in the 117th Congress

FLOODS Act

This is the bill that almost made it to final passage, but just not quite. The FLOODS Act or the Flood Level Observation, Operations and Decisions Support Act (S. 4462 and H.R. 8882) was passed by the Senate during the lame duck session and sent to the House where it was "held at the desk", without being immediately referred to relevant Committees in order to possibly get expedited Floor consideration. The House companion bill was considered and approved for House floor action by the two committees to which the bill was referred. The plan was to bring the Senate bill to the House floor on the "Suspension Calendar." Bills considered in this manner are generally considered non-controversial and must pass by a two-thirds vote. Although many bills were considered in this way during the lame duck session, this one did not make it onto the Floor for final action.

Section 12 of the FLOODS Act would authorize federal funding support (\$3.5 million annually for 10 years) for updating the nation's precipitation data maintained as Atlas 14 by NOAA.

The bill would establish a national integrated flood information system at NOAA to improve flood early warning, and improve interagency coordination and collaboration on collection and use of data relating to water. During the Trump administration, an informal "Water Sub-Cabinet" had been created. This bill would formally authorize that structure.

Especially important to ASFPM was Section 12 of the bill which would authorize federal funding support (\$3.5 million annually for 10 years) for updating the nation's precipitation data maintained as Atlas 14 by NOAA. For many years, funding for collection of precipitation data was left to states, localities, and other interested parties. Difficulties in raising funds and assigning priorities has led to a patchwork of increasingly out-of-date extreme precipitation frequency data, some of which is 50-years-old. This leads to underestimates of the expected frequency of the size and volume of major rainfall events. With state revenues diminished and with extreme rainfall events increasing, it is important to utilize the effectiveness and efficiency of a federal effort to update the nation's precipitation information.

Very unfortunately, the legislation did not make it past the last hurdle during this Congress. It is very likely to be re-introduced in the next Congress. Committees in both the House and Senate have committed to working on this as well as updating Probable Maximum Precipitation (PMP) information. ASFPM will be urging early action in the 117th Congress.

(Continued on page 10)

Disaster Learning and Life Saving Act

This bill would establish a National Disaster Safety Board modeled after the National Transportation Safety board. It was introduced in the Senate (S. 4815) by Senators Brian Schatz (D-HI) and Bill Cassidy (R-LA). In the House, it was introduced (H.R. 8569) by Reps. Katie Porter (D-CA) and Garret Graves (R-LA). ASFPM has expressed support for the bill. It is expected to be reintroduced in the next Congress.

NFIP RISC Act

This bill, also titled the National Flood Insurance Program Reporting on Impact to Seaboards and Counties Act (H.R. 8311), was introduced by Rep. Max Rose (D-NY). The bill would require a study of the impacts of changes in risk rating methodology (Risk Rating 2.0) to be reported to Congress not later than six months before implementation of any rate changes based on changed methodology.

Although Rep. Rose lost his bid for re-election, his colleague, Rep. Kathleen Rice (D-NY) has indicated her intent to re-introduce the bill in the next Congress.

Flood Resiliency and Taxpayer Savings Act

This bill (H.R. 8462) would require building design and siting, when using federal funds, to take into account resiliency of the structure for the foreseeable future.

In cases where sufficient data is not available, it requires that non-critical structures be built 2 feet above the Base Flood Elevation (BFE) and that critical structures be built 3 feet above the BFE. Critical structures would be those that house services essential to community safety, recovery and resilience.

The bill's sponsors are Rep. David Price (D-NC) and Rep. Lee Zeldin (R-NY). They have indicated their intent to re-introduce the measure in the next Congress.

Federal Flood Risk Management Act

This legislation (S. 5022) would establish a federal standard "in order to improve the Nation's resilience to current and future flood risk". It was introduced in December 2020 by Senators Chris Van Hollen (D-MD), Brian Schatz (D-HI) and Cory Booker (D-NJ) and would effectively reinstate the Federal Flood Risk Management Standard (FFRMS) established in an Executive Order (EO 13690) by President Obama. The EO was overturned by President Trump.

Preliminary Damage Assessment Improvement Act

The measure (H.R. 4358) was introduced by Rep. John Katko (R-NY). It would require a report to Congress on the post-disaster damage assessment process. Additionally, it would establish damage assessment teams within FEMA "to conduct preliminary damage assessments with state and local governments and appropriate relief or disaster assistance organizations." The bill is likely to be re-introduced.

Built to Last Act

Companion bills were introduced in both the House and Senate. The Senate bill (S. 3349) was introduced by Senator Tammy Baldwin (D-WI) with two Republican cosponsors. The House bill (H.R. 5994) was introduced by Rep. Matt Cartwright (D-PA) with nine bipartisan cosponsors.

The legislation directs NOAA to support research to develop consistent federal long-term meteorological information to model future extreme weather events and environmental trends. The information should be suitable for use in developing and adopting federal and nonfederal standards, building codes, and voluntary certifications. It provides for collaboration with the National Institute of Standards and Technology (NIST).

All legislation referenced can be accessed by going to www.Congress.gov and entering the bill number or title. It will be important to reference the 116th Congress, since the current Congress as of January 3, 2021 is the 117th Congress.

WRDA Slides into Enactment

By David Conrad

It may say something about the broader predicament of our national legislation that one of the largest and most costly Water Resources Development Acts ("WRDA's") in history — with more than \$10 billion of new Corps of Engineers water resources projects, billions more for modifying projects, authorization of an additional \$10 billion in harbor dredging, and a teeing-up for "deauthorization" of another \$10 billion of previously authorized but unconstructed projects — would wind up as a mostly unnoticed add-on to the giant year-end Consolidated ("Omnibus") Appropriations bill for FY 2021 and COVID stimulus package. While the amount of funding in the bill is notable, the WRDA 2020 also includes a raft of substantial Corps' program policy changes, and ASFPM is pleased with numerous flood policy changes aimed at increasing the focus on floodplain management, consideration of nonstructural, natural, and nature-based feature approaches, levee and dam safety improvements, and planning for future-conditions flooding scenarios.

Many of the most positive flood policy changes and additions were included in a package of resiliency provisions championed by House Transportation and Infrastructure ("T&I") Committee Chairman Peter DeFazio (D-OR) in the House WRDA (H.R. 7575), which was reported by voice vote from Committee on July 24th, then passed – unanimously – five days later on the House Floor "under suspension of the rules," without amendment, just prior to the August 2020 Congressional recess.

The Senate WRDA (S. 3591), developed mainly by Senate Environment and Public Works ("EPW") Committee Chair John Barrasso (R-WY) and Ranking Member Thomas Carper (D-DE), was somewhat smaller and less ambitious, and was reported from Committee May 11. Recognizing it would be highly unlikely to get floor time in the slow-walking Senate, in September EPW leaders — rather unconventionally — started to negotiate directly with the House T&I Committee behind closed doors to meld the two bills into a single WRDA that could possibly be passed in both Houses. That came December 8, when the House T&I again unanimously passed through the full House the negotiated WRDA (S. 1811), which ultimately was added to the final giant appropriations bill and enacted on December 27. ASFPM was actively involved with the legislation through most of the 116th Congress, providing testimony and commentary all along the way.

Key provisions regarding Corps flood-related programs and policies in the WRDA 2020 are:

- **Floodplain Management Services program (FPMS)** – Expands the range of Corps technical assistance available to states and communities to include avoiding repetitive flooding, anticipating and preparing for changing climate and extreme weather effects, and withstanding and recovering from flood hazard disruptions; also prioritizes economically disadvantaged and repeat-flooding communities (Sec. 111).
- **Water Resources Principles and Requirements** – Directs the Secretary of Army to finalize the agency Principles, Requirements, & Guidelines ("P, R, and G") for planning and benefit/cost evaluation procedures authorized in WRDA 2007 and issued by the Council on Environmental Quality in Dec. 2014 to continue modernization of project planning, and to conduct revisions every five years (Sec. 110).
- **Sea-level rise and inland flooding** – Requires revising and updating of Corps planning guidance regarding assessment of the effects of sea-level rise and inland flooding on future water resources development to ensure application of best available science and data and close coordination with federal and state agencies. It also requires the Secretary in project feasibility studies to document the potential effects on projects and to document expected benefits of projects relating to sea-level rise or inland flooding over a 50-year horizon after the project's completion (Sec. 113).
- **Nonstructural, natural, and nature-based features in flood planning** – Requires consideration of these approaches for all flood risk management and hurricane and storm damage reduction project planning, along with their long-term costs and benefits, and if not included in the recommended plan, requires an explanation of why not; makes the cost-sharing for natural and nature-based projects the same as for nonstructural projects (Secs. 114, 115, 116).
- **Full federal-cost for "federal interest determination" for economically disadvantaged communities** – In effect, for economically disadvantaged communities, restores an up to

(Continued on page 12)

- \$200,000, 120-day, 100-percent federal-cost, reconnaissance-type pre-feasibility study, including recommendations for modifications if a “federal interest” is not found. Also, allows the Corps to apply this to up to three other studies each year (Sec. 117).
- **Rural and economically disadvantaged communities** – Establishes a pilot program of 100% federal-cost for flood risk management and hurricane and storm damage reduction feasibility studies for rural and economically disadvantaged communities, with 10 project studies in each category. Requires natural, nature-based, and/or nonstructural features or a combination to be considered and evaluated for all economically disadvantaged community flood studies.
 - **Permanent measures to reduce emergency flood fighting needs in communities with repetitive flooding** – Creates a new program authorizing study, design, and construction for communities with repetitive flood losses that have received emergency flood fighting assistance under P.L. 84-99, for projects for flood or coastal storm risk management. For new works or modifying existing flood control works, and/or solutions utilizing natural or nature-based features and/or nonstructural features or a combination for at least 50% of risk reduction. The Secretary shall review and, where appropriate, incorporate such natural, nature-based, and/or nonstructural features in the final alternatives evaluated. Standard cost-sharing, but if negative B/C, the community may pay the difference. An approved project can proceed to construction without added Congressional authorization when federal costs do not exceed \$17,500,000 (Sec. 119).
 - **Engineering and maintenance deficiencies of levees** – Adds a requirement that the Secretary identify the specific engineering and maintenance deficiencies, if any, of levees inventoried or reviewed in the National Levee Safety program, and to describe the recommended remedies to correct each deficiency, and, if the owner of a non-federal levee requests, the associated costs of the remedies. ASFPM is concerned that such a requirement may be extremely difficult to accomplish within current budgets (Sec.133).
 - **National Dam Safety Program and rehabilitation of high hazard dams** – Provides, among other matters, that the FEMA Administrator shall provide criteria, and may provide technical support, for the development of local floodplain management plans, that are a condition for rehabilitation grants, and extends from one to two years the period in which the floodplain management plans must be finalized (sec. 132). The language also clarifies that to be eligible for a grant, the community in which the dam is located needs to be in good standing with the NFIP, clarifies state approval requirements for Emergency Action Plans, and requires the FEMA Administrator to establish criteria for incorporating high hazard potential dams in state and local hazard mitigation plans and to define what constitutes unacceptable risk for grant eligible dams.
 - **Pilot program for Continuing Authorities for economically disadvantaged communities at full (100%) federal cost** – As additional assistance to small or economically disadvantaged communities, establishes a pilot program for 10 projects at full federal cost, with geographic diversity, to be commenced within 10 years, to be applied for by non-federal interests and reviewed and selected by Secretary. To provide additional appropriations cost-ceiling authority, eight continuing authorities’ appropriations ceilings are each increased annually by \$500,000 in FY 2021-2024 – Secs. 14, 3(c), 107(a), 204(g), 205, 206, 2, and 1135 (Sec. 165).
 - **Lower and Upper Missouri River comprehensive flood protection** – In the wake of the devastating 2019 Missouri River floods, Congress has provided additional study and technical assistance to further flood risk management and resiliency, with notable direction for the Secretary to again consider structural and nonstructural and natural and nature-based features, including levee setbacks and removal of structures subject to repeated flooding. Congress has given considerably broader authority and direction to enhance opportunities for floodplain management improvements, especially in the Missouri River recovery (Sec. 216).

Moving forward

Besides the prospect of scores of new and to-be-modified projects and studies, the 2020 WRDA now will set into motion considerable administrative work for the Army Corps of Engineers, including development of important new guidance, regulations, and the standing up of new programs that will be of high interest to ASFPM. We will continue to follow these with much interest and report as the processes get underway. In addition, both the House T&I and Senate EPW Committees have made clear their intents to develop another biennial WRDA and major infrastructure legislation in the new 117th Congress, so there will be much more to report on as these processes get underway in 2021.

Coastal Flooding Threatens Affordable Housing

As coastal flooding continues to accelerate, among those hardest hit are residents of affordable-housing who often lack the financial resources to repair, rebuild, or retreat from their housing after it is damaged by flood waters.

By 2050, virtually every coastal state is expected to have at least some affordable housing exposed to more than one “coastal flood risk event” per year, on average—up from about half of coastal states in the year 2000, according to analysis conducted by scientists at Climate Central and published in [Environmental Research Letters](#).

“Flooding can wreak havoc on buildings and the residents who live in them,” researchers Maya K. Buchanan and Benjamin Strauss wrote. “Even low levels of flooding can damage belongings, disrupt electrical equipment, contaminate water sources and septic systems, generate mold, and block roads. These impacts may increase maintenance costs, threaten public health, and cause profound disruptions to families already struggling to make ends meet. Because affordable housing units are frequently in poor repair to begin with, additional damage from flooding may be particularly challenging—and expensive—to remedy.”



Virginia Beach waterfront (Photo by Aileen Devlin | Virginia Sea Grant on [Flickr](#))

Scientists aimed to quantify the current and future coastal flood risk to the nation’s affordable housing inventory so that local, state, and federal stakeholders could understand the overall exposure of this already scarce resource and step up plans for resiliency, especially in those areas where coastal flood risk is most likely to occur.

According to the study, New Jersey, New York, and Massachusetts have the largest share of affordable housing and lead the nation in the number of units at risk. Many fewer units are at risk in California, but these units face a high risk of repetitive flooding, similar to affordable housing in Maine, Maryland, Alabama, and Texas.

By 2050, the aggregate number of affordable housing units exposed annually could more than triple to 24,519 units. New Jersey could see nearly 7,000 units exposed, a four-fold increase; and New York and Massachusetts would continue to rank among the top three states for absolute and relative number of units exposed. Pennsylvania (792%), Florida (774%), and South Carolina (669%) face the largest percentage increase over the 2000 baseline in units exposed.

The researchers also ranked the top 20 cities in terms of annual numbers of units exposed by 2050. These 20 cities account for three-quarters of all the affordable housing units at risk of coastal flooding across the United States, showing that coastal flood risk is highly concentrated.

As part of the research, Climate Central introduced a new interactive online mapping tool showing the vulnerability of affordable housing to coastal flood risk now and in the future. [Access the tool.](#)

Registration Opens in February for the 2021 ASFPM Conference

We've been busy reviewing abstracts, selecting speakers, and finalizing the program, which will be posted soon. Next month, we will open registration for ASFPM's 45th Annual National Conference, to be held **May 9-13**. We hope you can join flood-risk professionals from all over the world at the premier flood management conference.

We are continuing to monitor CDC and local city/state guidelines with regards to COVID-19, and expect to provide an important update regarding the conference location soon. We will communicate any changes via the conference website, email, and social media. Stay tuned!



[Learn more about the 2021 conference.](#)



There's still time to register for **Coastal GeoTools**, Feb. 8-11. This online event will let you experience everything the conference is known for – top notch sessions, training opportunities, tools showcase, plenaries, and the exhibit hall. Prices increase on Feb. 1. [Register today to save.](#)

State Resilience Assessment and Planning Tool (SRAP Tool)

The National Governors Association Center for Best Practices' (NGA Center) released a tool to help governors and their staff assess state resilience, identify gaps, and plan for natural and human-made disasters. The tool and related efforts build upon the experiences of states and community leaders around the U.S. and globally.



The SRAP Tool is a self-assessment questionnaire designed to help states begin to understand their resilience. It is designed to start conversations around resilience, mitigating the impacts of disasters, and response to disasters. Answering the questionnaire will not in itself yield a complete roadmap to resilience. However, it will be a significant first step for states in resilience planning and help Governors identify gaps.

Focusing on state operations, energy, and other infrastructure systems, the SRAP Tool is designed to help state officials prepare for a wide range of natural and human-made hazards. State officials, under the leadership of the governor's office, can complete it on their own terms or with direct NGA Center assistance upon request. [Download the tool](#)



Taking a Look at Floodproofing for Machinery and Equipment

By Rebecca Quinn, CFM

Over the past several months there's been a lot of talk, and considerable consternation, about "machinery and equipment" and utility meters. The discussion was prompted by the prerequisites established by FEMA for the NFIP Community Rating System that, starting with CRS communities that have their cycle visits in 2021, requires communities to adopt at least one foot of freeboard above the base flood elevation to obtain or retain a Class 8 rating or better. Check out the [Class 8 Freeboard FAQs](#). Applying freeboard to the lowest floor is easy; it's even in the 2015 and later editions of the International Residential Code (although a few states remove the freeboard). But what about machinery and equipment?

Among other minimum requirements, NFIP communities must require new construction and substantial improvements to "be constructed by methods and practices that minimize flood damages, and (iv) be constructed with electrical, heating, ventilation, plumbing, and air conditioning equipment and other service facilities that are *designed and/or located* so as to prevent water from entering or accumulating within the components during conditions of flooding" [44 CFR § 60.3(a)(3)(iv)]. I added the italics to emphasize the rule doesn't explicitly say "elevated to or above the BFE." This rule was adopted in August 1986.

In the very early days, when the NFIP was administered by the U.S. Department of Housing and Urban Development, the requirements were even squishier, with the expectation that applicable state and local building codes and health regulations would "provide for the protection of the heating system and other critical mechanical or electrical installation from damage by flooding" [24 CFR § 1910.58(c)]. That changed in September 1971 to require use of "construction materials and utility equipment that are resistant to flood damage" and language similar to the current requirement appeared in the section for subdivisions, requiring a list of public facilities and utilities to be "located, elevated, and constructed to minimize or eliminate flood damage."

Let's take a look at what "designed" and "located" mean. "Located" is readily interpreted to mean elevated. But the design part? That's what we call a "performance statement" or expectation – it describes the expected performance without saying explicitly how to achieve it. "Designed ... so as to prevent water from entering or accumulating within the components" is fairly well understood to mean the equipment, by its very nature, can be submerged and subsequently restored to function with "minimal" cleaning and repair (similar to what is expected of flood damage-resistant materials). That means typical, off-the-shelf equipment does not meet that expectation. Here's where common lingo can get in the way – equipment that meets that expectation is not "floodproofed" in the same sense that buildings are designed to be dry floodproofed.

When you take a look at the CRS Class 8 FAQs, look for Question 16, The answer explicitly says the freeboard requirement "includes machinery and equipment placed within attached garages and/or within enclosures below elevated buildings, with the exception of utility meters and equipment specifically designed to withstand inundation." The answer goes on to say a community that "allows floodproofing around machinery and equipment in lieu of elevation to the freeboard level does not meet the prerequisite." Remove the word freeboard, and that's a good answer for minimum NFIP requirements and reinforces that the equipment itself must meet the performance expectation.

Now, what about utility meters? This has been a question for a long time. I wrote about electric meters in the [November 2009 Insider](#). Most electric, gas, and water meters are owned by the utility companies, and most utilities are regulated by a public service commission or similar state agency. For the most part, this means regulating installation of meters is not within the jurisdiction of communities. I think there's been a vague expectation that state floodplain folks would somehow be able to get public service commissions to impose

(Continued on page 16)

(Continued from page 15)

requirements to minimize flood damage. When I was Maryland's NFIP State Coordinator many years ago I was not so gently "waved away" from starting that conversation with the public service commission. I am aware, however, that some electric companies have guidelines for meters in SFHAs. My guess is they elevate meters because it speeds up their own recovery and service to customers, not because a state entity imposes rules.

Let me tie together two things by telling you about an email exchange I had recently with someone who reads my Notebook columns. He explained he'd been "gigged" by the ISO CRS specialist because an Elevation Certificate showed the gas meter for a building below the BFE. The Elevation Certificate originated as a data collection tool to help the NFIP properly rate flood insurance policies. Over the past decade or more, the EC has changed to be more useful as a compliance tool because information about buildings is collected along with surveyed elevations. But keep in mind, surveyors only survey what they see. They cannot determine compliance, and they certainly cannot tell if equipment is specially designed to meet the performance expectation to be below the BFE.

The floodplain administrator who got in touch said he checked [FEMA P-348 Protecting Utility Systems from Flood Damage](#) (2017), and found little about utility meters. I mentioned this while chatting with a colleague about the dual uses for Elevation Certificates. She pointed out the EC instructions for Item C2.e tell the surveyor to enter the elevation of specific "machinery and equipment items: elevators and their associated equipment, furnaces, hot water heaters, heat pumps, and air conditioners." The instructions go on to say local officials may require elevation for other equipment, given the requirement to ensure "all machinery and equipment servicing the building are protected from flooding." But notice what's missing from the list to determine which equipment is the lowest for the purposes of completing Item C2.e? Utility meters.

So, perhaps the answer in terms of the "gigged" EC is to remove the surveyed elevation of the gas meter and re-shoot the lowest of the specifically listed machinery and equipment. I certainly don't mean to downplay the value of protecting utility meters from flood damage. But communities should not be penalized for something that is beyond their regulatory scope.

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](#).



Condos, Cooperatives, and Coach Houses

By Ray Carroll, MAI, SRA, CFM

This month I'll talk about condominiums, cooperatives, and strange things called "coach houses." As before, I'll use either *structure value* or *building value* to mean the market value that should be used in SI/SD determinations. I'll use *whole-property value* when I mean the market value of a parcel of land including improvements.

Condominiums

Sometimes floodplain administrators receive appraisal reports in connection with permits for work on buildings "owned in condominium." Condominium is a type of real property ownership in which each owner holds title to his or her individual unit (usually a portion of the interior of a building), and shares ownership jointly of common property such as the land, the common-use portions of the building, recreation facilities,

(Continued on page 17)

(Continued from page 16)

and other site improvements. Even if the condominium unit is legally defined as an entire building, as it sometimes is, there will be joint ownership of land and other improvements. It is incorrect to talk about a condominium in terms of being a building.

Appraisal reports identified as Fannie Mae form 1073 or Freddie Mac form 465 are commonly used for underwriting mortgage loans on individual condominium units. Alternatively, the report could be any of a variety of general-purpose condominium unit reports used to support tax code basis-value determinations, buy/sell decisions, or other related uses. None of these reports should be used to support SI/SD determinations because they are all designed and intended to report the *whole-property value* of an individual condominium unit.

Individual condominium unit appraisal reports rely almost exclusively on the sales comparison approach. There's no cost-depreciation approach. Occasionally, a community will receive a condominium unit report supplemented by a land sales analysis, maybe with some discussion of the contribution of joint-owned improvements. Usually, this is the work of a well-meaning appraiser who doesn't understand that for an SI/SD determination, it's the market value of the entire physical building that must be appraised, not the individual unit.

Appraisals to support SI/SD determinations must always be appraisals of the building. An appraisal of an individual condominium unit is never appropriate, even when a permit application is submitted for work on just one unit. The only appropriate valuation method for buildings owned in condominium is Actual Cash Value (ACV).

Cooperatives

A cooperative unit is fractional ownership (evidenced by corporate shares) in a company that owns the real property. The unit of corporate ownership entitles a shareholder to exclusively occupy a defined space in the building, and to jointly use common areas including land, the common-use portions of the building, recreation facilities, and other site improvements. The rights to occupy and use are evidenced by a lease, or an assignment of lease. Just like condominiums, when a cooperative unit occupant proposes improvements, it's the market value of entire building that must be appraised and used in the SI/SD determination, not an individual co-op unit. And again, ACV is the only appropriate method.

Coach house conundrum

This is a real-world example of how regulations don't anticipate every scenario, and how the results of a properly-developed ACV appraisal might seem ridiculous.

About 20 years ago, an excellent quality RV park catering to the owners of Class A motorhomes was developed in a Florida floodplain. RV parks are considered reasonable floodplain development because motorhomes are not structures, and in Florida they tend to disappear from the parks in late Spring before the beginning of hurricane season, and reappear at the end of the season. The RV park in question is a planned community with an engineered drainage system, an elevated clubhouse/storm shelter, security gates,

Actual Cash Value (ACV)

FEMA P-758 [SI/SD Desk Reference](#), Section 4.5.3, describes actual cash value (ACV) as "the cost to replace a building on the same parcel with a new building of like-kind and quality, minus depreciation due to age, use, and neglect. ACV does not consider loss in value simply due to outmoded design or location."



(Continued on page 18)

(Continued from page 17)

landscaping, and very nice site amenities including concrete aprons and pads, and public utility hookups for water, sewer, electricity, telephone, and TV cable. The park developer provided each site with a 10' × 10' kit-built frame storage shed (asphalt shingle roof, vinyl siding, no interior finish).

Motorhome people are generally very social folk. They like to entertain and most RV sites get furnished with lounge chairs, covered tables, and sometimes fire pits. In this Florida RV park, it wasn't long before someone decided that the regular card game would be better played out of the bugs and weather and remodeled a storage shed, which became the first "coach house." The idea caught on and soon there were upgraded coach houses with metal shingle roofs, stucco siding, ceramic tile floors, painted drywall interiors, lofts to accommodate water heaters, full bathrooms, efficiency kitchens, air conditioning, art glass windows, and ... well, you get the picture. Keeping up with the Jones' applies throughout society. The demand for embellishments was so strong that more than one local contractor specialized in coach house remodeling. Permits weren't pulled for the original developer-provided kit-built sheds, so they weren't shown in tax assessment records, and subsequent work was done without permits.

Ignorance was bliss until Hurricane Irma came along. Some of the coach houses sustained damage. Subsequently, community officials noticed the coach house owners and permits were required, making the repairs subject to the 50 Percent Rule. Since they weren't assessed, the adjusted tax assessment method wasn't available. Coach houses never sell separate from an RV pad site, so there's no way to make a *whole-property value* appraisal. ACV is the only appraisal method.

What do you suppose it costs, per square foot, to build a structure with all the amenities of a good quality single-family residence and yet the building is only 100 sq. ft. in area? The answer might make your head spin.

GivingTuesday is a Resounding Success: A Heartfelt 'Thank You' to our Donors!

ASFPM Foundation would like to take this opportunity to thank our donors, ASFPM Chapters, and GivingTuesday ambassadors for making this year's GivingTuesday a huge success! This year ASFPM Foundation set an ambitious goal of \$20,000 with all proceeds going to the [Future Leaders Scholarship Fund](#). To help us reach our goal, Dewberry graciously provided a matching gift for the first \$3,000 donated. This was followed by an anonymous donor, who selflessly provided a second matching gift for the next \$5,000 in donations. With everyone's help, hard work, and generosity, the Foundation exceeded its goal, raising over \$22,000 in donations and tripling the number of individual donors from last year.

ASFPM Foundation gives special thanks to ASFPM Chapter Directors and ASFPM Chapters for helping us spread the word and participating in a 'Chapter Challenge' for GivingTuesday. Chapters were awarded prizes for having the most participants, expressed as a percentage of their overall membership. The Chapter Challenge resulted in almost \$9,000 in donations and half of the individual donors!

- Twenty-one chapters participated, which is almost 60 percent of the total number of chapters.
- The top five chapters in the Challenge were FMA, Georgia, Michigan, Ohio, and Wisconsin.
- Other participating chapters included Arizona, Colorado, Florida, Illinois, Iowa, Kansas, Kentucky, Louisiana, Maryland, Nebraska, New York, NORFMA, North Carolina, South Carolina, Tennessee, and Virginia.

The \$22,000 raised on GivingTuesday funds one Future Leaders Scholarship for an entire year. Because of your generosity, more students like Jesus Mulgado and Elizabeth Lacey will be able to pursue their dreams of become a flood risk management professional.

Thank you again and best wishes for a safe and restful holiday season!

FEMA Proposes Revision to Disaster Declaration Factor

FEMA is proposing to revise the “estimated cost of the assistance” disaster declaration factor that it uses to evaluate a Governor’s request for a major disaster under the Public Assistance Program.

The [proposed revisions](#) would more accurately assess states’ disaster response capabilities and would comply with the direction of Congress in the Disaster Recovery Reform Act of 2018, which requires FEMA to review and update its disaster declaration factors.

FEMA says the current per capita indicator and minimum threshold do not provide an accurate measure of states’ capabilities to respond to disasters. As a result, FEMA may recommend that the President declare major disaster declarations for incidents that, with more accurate assessment, would be found to be well within a state’s financial capabilities to respond to on its own. FEMA proposes to adjust these factors so that it may more closely adhere to the law which authorizes federal disaster assistance only when an event “is beyond the capabilities” of the state and affected local governments.

This current proposal builds on previous attempts to correct these same problems. For the last several years, in response to concern from Congress, the Government Accountability Office, and elsewhere, FEMA has been assessing how to incentivize more proactive fiscal planning and risk management at the state level and improve effective stewardship of taxpayers’ dollars.

FEMA is seeking public comment on the rule until February 12, 2021. Comments may be submitted through www.Regulations.gov under docket ID FEMA-2020-0038.

FEMA Announces an Additional \$40 Million for Flood Mitigation Assistance Program Grants

FEMA announced an additional \$40 million in funding is available for the Hazard Mitigation Assistance [Flood Mitigation Assistance](#) grant program. This increases FMA funding amount for Fiscal Year 2020 from \$160 million to \$200 million. The increase in funding is a result of recovered funds – available funds for projects from previous grant cycles that were completed under budget or were not implemented.

This competitive grant program assists state, tribal and territorial governments as applicants in building a culture of preparedness by strengthening our nation’s ability to reduce disaster losses and protect life and property from future disaster damage.

All applications must be submitted in the [FEMA Go Portal](#) no later than 3 p.m. ET on Jan. 29, 2021. Applications for the Building Resilient Infrastructure and Communities (BRIC) are due on the same day. BRIC funding is currently \$500 million. [Learn more about BRIC.](#)

Myths and Facts About Flood Insurance

MYTH: Only residents of high-risk flood zones need to insure their property.

FACT: Even if you live in an area that is not flood-prone, it’s advisable to have flood insurance. About 40 percent of NFIP claims come from moderate-to-low risk flood areas. The NFIP’s preferred-risk policies are designed for residential properties located in moderate-to-low-risk flood zones and are very affordable.

In a new factsheet from FEMA, the agency works to dispel the common myths around flood insurance. Who can buy it. When you buy it. What it covers. And much more. [Download the factsheet.](#)

Grading the Mississippi River Watershed

The 2020 Mississippi River Watershed Report Card shows minor but disappointing progress toward restoring the health of the Mississippi River Watershed and its basins.

The American Watershed Initiative assessed the watershed with an overall score of C-. This grade — a modest improvement over the D+ earned in AWI's 2015 report card — represents the productivity of the watershed with regards to economic activity and environmental resilience. However, as Kimberly Lutz, executive director of the American Watershed Initiative notes in the report, "some grades tell us that the Mississippi River Watershed faces difficult challenges with implications for the health and safety of Americans, the security that comes with reliable availability of clean and abundant water (called "water security"), and the American economy. These challenges are national issues, impacting all of us."

The report card measures the health of the Mississippi River watershed across six goal areas — water quality and ecosystems, flood control and flood risk management, recreation, transportation, economy, and water supply. The report card also grades the five major sub-basins — the Upper Mississippi River, Lower Mississippi River, the Ohio and Tennessee Rivers, the Arkansas and Red Rivers, the Missouri River — and then calculates watershed-wide impacts.

In terms of flood control and flood risk management, the Mississippi River watershed, which encompasses two-fifths of the continental U.S. and 31 states, remains threatened by increasingly frequent and extreme flooding as well as aging infrastructure, the report said. The grade of D+ remained unchanged since the 2015 report.

Key takeaways from the report

- The 2020 report card saw modest improvements in the following indices: hunting and fishing licenses, floodplain population, and infrastructure maintenance and condition.
- The watershed remains threatened by more frequent and extreme flooding, aging infrastructure, chemical pollution, nutrient runoff, and continued urbanization and agricultural intensification.
- The river's water quality is rated as very poor, with concerns for the nation's drinking water supply, resulting in the grade for water supply and ecosystems dropping to a D compared to 2015

[Download the Mississippi River Watershed report card](#)



Membership Renewal Reminder

Don't forget, you can renew your membership for 2021 through the membership portal. It's quick, easy, and convenient. **In order to participate in the Board of Directors elections, as a nominator, nominee, voter or candidate, dues have to be paid in full by Jan. 31, 2021.** When you renew, please be sure to 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.

Mapping the Unmapped: Where the Streams Have No Name

By Eric Simmons, CFM

U2 fans may recognize these adapted lyrics from *Where the Streets Have No Name*.

The country's a flood
And a home turns to rust
We're still building, then burning down
Where the streams have no name

I wanna reach out and study the plain
I wanna give fish shelter from the rain
I see flood risk disappear without a trace
Where streams now have a name

And when I go there, I go there with you
It's what we need to do

I'm no Bono and was in high school when *The Joshua Tree* album was released. However, a quarter century in floodplain management has taught me that if the U.S. is going to reduce flood losses (conservatively [estimated](#) at \$20 billion per year and rising) we need to avoid and manage new development in all floodplains, not just the 33 percent that have been mapped by FEMA. Flood risk isn't managed unless the hazard is studied and included on a map either at the local, state, or federal level. The most beneficial flood studies I've worked on have a name like 'Tributary D to Unnamed River' because the study has gotten ahead of planned development. The [recommendation](#) to map flood hazards for the 2 million miles of the nation's streams that haven't been mapped makes sense.

Eric Simmons, CFM, is an engineer in the mitigation division of FEMA's Region IX.

Order Erased by Trump Could Help Biden Address Rising Seas

President-elect Joe Biden could move immediately to strengthen the nation's resilience to climate change by reinstating an Obama-era policy that would require new federally funded buildings, infrastructure and homes to be flood-proofed, experts say.

As reported in [ClimateWire](#), advocates are urging Biden to quickly revive the Federal Flood Risk Management Standard that President Obama adopted by executive order in early 2015. The policy never took effect because President Trump rescinded it in 2017 before any federal agency could adopt rules implementing the standard.

"This is a low-hanging fruit for the incoming Biden administration to reinstate that order," said Chad Berginnis, executive director of the Association of State Floodplain Managers, which has urged Biden to adopt the standard. "I would think this could be a day one type of thing."

The standard sought to impose flood protection requirements on all federally financed projects being built in flood-prone areas to protect them from rising seas and intensifying riverine flooding.

The standard would have applied to a wide range of construction, including new military facilities, EPA-funded projects, public buildings that are paid for with federal disaster aid and new homes backed by the Federal Housing Administration. The buildings and facilities would have needed to be elevated by 2 to 3 feet or have equivalent flood protection.

Biden has indicated support for the policy. Recommendations released by a "unity" task force created last summer between Biden and Sen. Bernie Sanders (I-VT) say a Democratic administration should "reinstate federal flood protection standards."

Flood Insurance Committee Corner

2020...what a year...to forget. And what will 2021 bring us, besides more Zoom meetings? In the world of flood insurance, it cleans Congress's legislative slate (though the Senate flood insurance slate really never got used) and bills have to be re-introduced. With the NFIP expiring September 30, word has it that Rep. Waters (CA; yes, of Biggert-Waters fame) wants to get something up in the House soon after the new session starts.

Meanwhile, issues still are pivoting around Pivot (FEMA's replacement of its old NFIP legacy system) and ASFPM will continue to work with FEMA to try and improve access to NFIP data by state and local officials (see DHS's Office of Inspector General [Report](#) for other Pivot issues).

And FEMA is still planning on releasing Risk Rating 2.0 (RR2.0) rates on April 1, which go effective October 1. That means policyholders will be receiving RR2.0 premiums via renewal notices starting in August, if not before for some companies (a tough schedule for WYOs to create a totally new rating system!). FEMA's RR2.0 [webpage](#) provides some detail on how it might change, including reducing the complexity and simplifying the quoting and underwriting process. RR2.0 will also provide credits for certain mitigation actions, including elevating machinery and equipment above the lowest floor!

Finally, 2020 brought us an unprecedented hurricane season, made all the worse by Covid-19. Louisiana was hit particularly hard. We hope 2021 will not be another record year...or even close. But FEMA, and their insurance partners, demonstrated it was prepared to handle the claims and adapt to the conditions, including remote adjusting. If we do have an active flood season in 2021, FEMA (and partners) will be ready.

So, in 2021 be safe, be smart, and BYAP (Buy Yourself A Policy)!

Humbly yours,
Your Insurance Committee Co-Chairs

Steve Samuelson, CFM
Kansas NFIP State Coordinator

Bruce A. Bender, CFM
Bender Consulting Services, Inc.

Elevation Certificate Training Videos from CRS

The CRS Program has just released eight videos that cover training on the FEMA Elevation Certificate (EC). The videos describe each Section of the EC and explain which fields on the form are required for CRS purposes and why. Each video explains the most common errors made on the forms and how to avoid them. There are also two videos covering general issues associated with ECs such as form date rules, page rules, how to handle annexations, how to handle Flood Insurance Rate Map (FIRM) changes after a building is permitted, and how to document different kinds of buildings. And lastly, there is a video on how to correct an EC once you find one with errors.



The videos should be watched beginning with Section A of the form, and ending with "How to Correct an Elevation Certificate." They are intended to serve community officials, but please feel free to share these videos with the surveyors, engineers, and architects in your community who fill out these forms. They will benefit greatly from them as well. [View the playlist.](#)

NEWS BRIEFS

The latest curated news for flood management professionals

[How Climate Change Could Spark the Next Home Mortgage Disaster](#)

Many current and former federal housing officials acknowledge we're in a peculiar kind of stasis — a crisis that everyone sees coming but no one feels empowered to prevent, even as banks and investors grow far savvier about assessing climate risk.

[A Record-Breaking Year of Storms Calls for Big Investments on Our Coasts](#)

2020 has demonstrated, with deadly consequence, the costs of failing to address climate change along our coasts. This year's record-breaking hurricane season has repeatedly battered Gulf Coast communities, and rising sea levels are causing more routine nuisance flooding in Florida and other coastal states, increasing road closures and affecting property values.

[Beating Back the Tides](#)

Between 2000 and 2015, high-tide flooding in the U.S. doubled from an average of three days per year to six along the Northeast Atlantic, according to a 2018 NOAA report. It is especially common along the East Coast and Gulf Coast, where the frequency is up by roughly 200 percent over the last two decades. Future projections are gloomier. Without additional flood management efforts, the frequency of this kind of flooding is projected to double or triple by 2030, and could be as much as 15-fold higher by 2050.

[Speeding Up Post-Disaster Housing Buyouts](#)

Floodplain buyouts are a flood mitigation strategy of acquiring frequently flooded properties and returning them to open space. A primary source of federal funding for post-flood buyouts is the Hazard Mitigation Grant Program (HMGP) administered by FEMA. Unfortunately, these funds can take months or years to make it into the hands of property owners.

State News

CONNECTICUT

[Norwich Makes Changes to Flood Zone Regulations](#)

Norwich had to go through a detailed, tedious application process, documenting efforts to mitigate flooding of properties along the Yantic River and other low-lying areas. One change set elevation standards at a minimum of 1 foot above floodplain level for all new residential buildings and those undergoing significant renovations — improvements totaling at least 50% of the value of the building.

FLORIDA

[EPA Announces Historic Approval of Request to Administer the Clean Water Act Section 404](#)

Florida is the first state in more than 25 years to apply for and receive approval to implement a Clean Water Act (CWA) Section 404 program, joining Michigan and New Jersey as the only states in the country with such authority. The action formally transfers permitting authority under CWA Section 404 from the U.S. Army Corps of Engineers to the state of Florida for a broad range of water resources within the state.

(Continued on page 24)

NEWS BRIEFS

The latest curated news for flood management professionals

(Continued from page 23)

INDIANA

[Basin Development Commission Reflects on First Full Year with Eye on Future](#)

A long-term plan to control flooding and sediment erosion within the Kankakee River Basin recently received the Outstanding Floodplain Project Award for 2020 from the Indiana Association for Floodplain and Stormwater Management. Among the priorities were reconstructing the sediment-laden banks of the Yellow River; strengthening the banks of the Kankakee River; minimizing obstructions; and reconnecting channels to parts of the floodplain that can manageably hold water.

MASSACHUSETTS

[Plans for a Resilient Boston Harbor Unveiled](#)

Boston has rolled out a comprehensive and transformative plan to invest in the city's waterfront to protect residents, homes, jobs, and infrastructure against the impacts of rising sea level and climate change. The plan, "Resilient Boston Harbor," lays out strategies along Boston's 47-mile shoreline that will increase access and open space along the waterfront while better protecting the city during a major flooding event.

MONTANA

[Map Updates Indicate Higher Flood Risk in Three Forks; Could Impact Development](#)

An ongoing update to Gallatin County's floodplain maps indicates a 100-year flood would impact more of Three Forks than previously thought, which has local officials working on how better to protect the city. One possible solution involves building a channel and culvert crossing to divert flood waters away from the city.

NEW JERSEY

[To Prepare for Flooding, New Jersey Town Helps Residents Relocate Out of Harm's Way](#)

A voluntary relocation program in Woodbridge Township, New Jersey buys high-flood-risk properties from owners willing to sell, and helps them relocate to lower-risk areas. Woodbridge turns the purchased land into water-absorbent greenspace.

NEW YORK

[Floods Drive Binghamton Toward Sea Change of Resiliency](#)

To achieve flood resiliency, more than 170 far-ranging flood-mitigation projects have been put in place. Among them: building an elementary school on stilts, enlarging culverts to channel more stormwater, creating wetlands at a highway interchange, raising bridges, and building concrete floodwalls around sewage treatment plants, a hospital, town hall, and police station.

PENNSYLVANIA

[Gov. Wolf Announces Plan to Address Flooding Caused by Climate Change](#)

Pennsylvania Gov. Tom Wolf announced a plan that will address flood hazard mitigation by requiring the State Planning Board to develop a series of recommendations and best practices relative to land use, planning, zoning, and stormwater management, with the emphasis on reducing the incidence of flash flooding that impacts citizens and businesses.

Welcome New Members !

Tracey Ledder, Delaware Engineering DPC

Kyle O. Olejniczak, Jacobs

Rahlys N. Ruff, P.E., Water Resource Associates, LLC

Brett French, P.E., Water Resource Associates, LLC

Christopher D. Briglia, P.E., CME, Carroll Engineering

Joshua I. Bayona, San Diego Cnty., CA

Lorrie Ann Pahl, Idaho Office of Emerg. Mgmt.

Nathan Clements, HDR, Inc.

Troy M. Tinch, City of Temple Terrace, FL

Christine M. Gaynes, CFM, FEMA, Region VIII

Joey Alford, Marion Cnty., MS

Jessica A. Spurlock, P.E., CFM, Columbia Engineering

Scott A. Hazelton, Powell Cnty., MT

Holly E. Strand, Utah Div. of Emergency Mgmt.

Stephen M. Gomba, P. E., CFM, Maser Consulting

Randy Pasquarelli, Orange Cnty., FL

John Ryan Singletary, York Cnty., SC

Kevin D. Grim, P.E., Ramboll

Daniel J. Anderson, Pinellas Cnty., FL

Molly Ann Cord, Pinellas Cnty., FL

Kadi S. Villeme,, FEMA

Aaron R. McKelvey, CFM, La Plata Cnty., CO

William W. Johnson, York Cnty., SC

Cheyenne C. Sun Eagle, Kansas Dept. Agriculture

Mark A. Stanton, Borough of Verona, PA

Kevin Cricchio, Oregon State University

Adele D. Phillips, CFM, Nebraska Dept. Natural Res.

Elijah D. Kaufman, Nebraska Dept. Natural Res.

Cody L. Galloway, P.E., CFM, Interstate Engineering

Edward Atchity, University of Oklahoma

Ryan M. Handy, Univ. of Colorado - Denver

Edward C. Thompson, City & Cnty. of Broomfield, CO



MEMBER NEWS

The latest news about ASFPM members

The Minnesota Association of Floodplain Managers recently named **Jessica Wilson, CFM** the 2020 Lisa Buchli Floodplain Manager of the Year. Wilson is the City of Edina Water Resources Coordinator and was selected for her accomplishments in working on the city's Flood Risk Reduction Strategy, developing public education materials to help reduce residents' exposure and vulnerability to flooding, and engaging with the public for a neighborhood-wide project to help mitigate flood risk. Wilson has also shared the work Edina is doing and what she has learned at several conferences attended by her peers.

Kate Naughton, PE, CFM has been appointed principal engineer at Hazen and Sawyer. Naughton most recently worked at a consulting engineering firm for more than seven years, where her duties included performing hydrologic, hydraulic, and safe yield studies for water resources infrastructure projects, as well as facilitating emergency action plans and exercises for high hazard dams.

David Ford, PhD October 1, 1950 - December 13, 2020

David Ford — engineer, scientist, teacher, and friend — passed away peacefully on December 13 following 16 months of treatment for acute myeloid leukemia. He began his illustrious career in 1978 as a hydrologic engineer at the US Army Corps of Engineers, Hydrologic Engineering Center (HEC) in Davis, California. In 1990, he founded David Ford Consulting Engineers, Inc (DFCE) which specialized in a variety of water resources and flood forecasting projects with state and local agencies, and various districts of the USACE. Most recently, he served on the recovery team following the spillway failure at Oroville Dam in California. In addition to serving as adjunct professor at UC Davis and lecturer at California State University, Sacramento, Ford trained more than 2000 civil engineers and scientists in professional development classes.



"David was always a good friend of the Foundation as a speaker for the Forums and providing input on the design, to being one of our panelists for the Big Data symposia we co-hosted with FMA," Doug Plasencia, ASFPM Foundation president wrote in an email. "He was both a gifted engineer and scientist, but more importantly he was a skilled communicator with the ability to simplify the complexity of hydrology and hydraulics so it was understandable by the lay person. He also was no stranger to advance modeling and statistical approaches but leaned towards practical applications that would get the job done."

Deadline
Feb. 10, 2021

Call for Nominations: 2021 ASFPM Awards

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 announced at the 2021 ASFPM Annual Conference in Raleigh, NC.

To learn more about the award categories and see the list of past winners, [visit the ASFPM website](#).

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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