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TESTIMONY

Water Resources Development Acts of 2020 Status of Essential Provisions

Before the

Subcommittee on Water Resources and Environment

House Transportation and Infrastructure Committee

By

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Introduction

The Association of State Floodplain Managers (ASFPM) greatly appreciates the opportunity to share our views on the programs of the U.S. Army Corps of Engineers (Corps), and especially the implementation of new WRDA 2020 provisions as part of this Committee's oversight process

The 20,000 members of ASFPM are partners of the Corps, Federal Emergency Management Agency (FEMA) and other federal agencies at the state and local levels in reducing loss of life and property due to flooding. Our 37 state chapters are active within their states and often nationally as well. State and local floodplain managers and their private sector engineering and floodplain management colleagues interact regularly with the Corps at the Headquarters and District levels in developing and implementing solutions to flooding challenges. All ASFPM members are concerned with reducing loss of lives from flooding and our nation's growing flood-related losses. For more information on the association, its 14 policy committees and 37 state chapters, visit www.floods.org.

Floods continue to be the nation's most frequent and impactful disasters every year and the costs to taxpayers continue to increase. While the Corps has often successfully engineered structural means of controlling flood waters, it is becoming increasingly apparent that 1) operation and maintenance costs of many projects are exceeding the ability of communities to pay those costs, which is their obligation; 2) structural projects, while necessary in some instances, are expensive: 3) traditional projects can inadvertently increase flood hazards upstream, downstream, and across the river; and 4) nonstructural projects and natural and nature-based feature design approaches can often offer a less expensive, more sustainable and affordable means of reducing flood hazards. We greatly appreciate WRDA 2020's provisions aimed at increasing community resiliency, especially for smaller, economically-disadvantaged, rural and communities that often have not been able to.

To meet today's challenges of riverine and coastal flooding in an era of more frequent and increasingly severe storms, sea level rise, shore-land subsidence, and skyrocketing disaster costs, it is important that the Corps take a broad, more comprehensive and watershed-based view of overall flood risk management. The Water Resource Development Act of 2020 was a good step in that

direction. The balance of our testimony will focus on where the nation goes from here, post WRDA 2020, and delves into specific areas where a particular focus on either implementation or transformation needs to occur to ensure that both WRDA 2020 and the USACE generally are positioned to successfully the nation's flood problems:

- Strategic Direction post WRDA 2020
- Flood Risk Management
- Levee and Dam Risk Management
- Implementing Principles, Requirements, and Guidelines

Strategic Direction post WRDA 2020

"The current trajectory of funding water resources projects is not sustainable."

This was the take-home message at the 2012 USACE Strategic Leadership Conference attended by ASFPM leadership as well as several other Corps partners. In remarks made by senior Corps leadership – with which ASFPM is in agreement – when you look long term, the Corps must change how it is doing business. An increased focus on collaboration, coordination, and problem solving with partners is necessary as is making smarter, strategic investments in infrastructure. While some of the highest Corps levels have recognized this, too often prior WRDA bills relied heavily on traditional approaches for flood risk management. For these reasons, ASFPM has not generally endorsed past WRDA bills, as the preponderance of the positive changes did not outweigh the detriments of primarily relying on large, structural approaches for flood risk reduction, while virtually ignoring the more holistic and long-term benefits of non-structural, natural and nature-based solutions and not adequately supporting the needs of smaller communities and underserved populations. In the 2020 WRDA bill, Congress took substantial steps in the right direction through a number of measures that move the Corps in a more positive direction to address the pervasive and increasing flood risk in the country, therefore, ASFPM was pleased to be able to endorse the bill

The areas of WRDA 2020 which, in ASFPM's opinion, show the greatest promise include:

- A substantial agenda of "resiliency" policy improvements and expanded nonstructural, natural, and nature-based features as working tools in Corps for flood risk management through the clear addition of natural and nature-based alternatives to nonstructural alternatives, with the same cost-sharing arrangements as nonstructural projects, incentives to recognize non-monetary benefits and estimates of long-term costs and benefits of such alternatives, and the requirement to include consideration of natural and nature-based features to the maximum extent practical among alternatives for permanent measures to reduce emergency flood fighting needs for communities subject to repetitive flooding;

- An increased emphasis on technical support for states, communities, tribes, and territories, especially rural and economically disadvantaged communities to assess and manage flood risk. The provisions modify the authorization for the Floodplain Management Services program (FPMS) with direction to provide Corps assistance to help communities "avoid repetitive flooding impacts, to anticipate, prepare for, and adapt to changing climate conditions and extreme weather events, and to withstand, respond to, and recover rapidly from disruption due to the flood hazards" and directs the Secretary to prioritize assistance for economically-disadvantaged communities. It gives the Corps license to modernize and update the FPMS services to communities;

- Authorization of Lower and Upper Missouri River Comprehensive Flood protection studies to be completed in three years. The Lower Missouri Basin study expansion requires consideration of "structural and nonstructural measures, including the setting back of levees and removing structures from areas of recurring flood vulnerability" and "where such features are locally acceptable, natural features and nature-based features" and to consult with agencies, tribes and stakeholders and solicit public comments on recommendations. The Upper Missouri River Basin Comprehensive study includes "examination of the use of structural and nonstructural

flood control and floodplain management strategies, including the consideration of natural features or nature-based features" and to address "the potential for the transfer of flood risk between and within the Upper and Lower Missouri River basins with respect to any changes recommended." These studies have considerable potential to advance efforts to expand use of nonstructural and natural and nature-based features, including levee setbacks in the Missouri Basin states; and

- A directive to implement the Water Resources Principles and Requirements and to review and revise the Planning Guidance and Regulations to include an assessment of the effects of sea level rise and inland flooding on future water resources development projects. The Secretary must, no later than 180 days after enactment "issue final agency-specific procedures necessary to implement the principles and requirements and the interagency guidelines." Updates to the PR&G must include the best available, peer-reviewed science and data on the current and future effects of sea-level rise and inland flooding on "relevant" communities and also allow a non-Federal interest to request consideration of these issues in a feasibility study. Combined, the two directives will update woefully out-of-date planning guidance and assure that the PR&G requires federal agencies to fully account for environmental costs and benefits as well as the analysis of future conditions in water resource planning.

As promising as the 2020 WRDA measures are, the nation and taxpayers will only see the benefits if the provisions are fully implemented. Progress will require considerable work and attention by the Corps and other agencies, communities, and other partners in the flood risk management community. We urge Congressional oversight to ensure these key changes in the flood risk management arena are fully implemented and that the entities responsible for action are held accountable. Given the increasing cost of operations and maintenance, funding for new starts and other projects is being proportionately reduced. Simply put, as a nation, we cannot afford to keep doing business as we have in the past.

Flood Risk Management

The Corps' Flood Risk Management Program was established in 2006. The program's mission is to increase capabilities across all aspects of the agency to improve decisions made internally and externally that affect the nation's flood risk. It implements this mission through several activities, including technical assistance (and related programs such as FPMS, PAS and Silver Jackets), project planning and construction, promotion of nonstructural flood risk reduction, flood fighting, post flood disaster support, inter-agency coordination and assessing potential climate change impacts and consideration of adaptation measures.

Technical Assistance

ASFPM believes there is strong potential to build on the excellent WRDA 2020 provisions and expand the Corps' capabilities to provide a greater range of solutions for communities' water resources needs through technical assistance. Many communities realize they cannot afford the operation and maintenance costs of large structural projects, yet there are many flood reduction approaches they can use if they had technical assistance to plan, evaluate, and implement them. Technical assistance should be seen as a cornerstone of Corps operations and activities. A significantly enhanced role of technical assistance and broad-based problem solving/planning for watershed wide and nonstructural solutions could happen with more effectively delivered federal expertise at the local level.

It is still nearly impossible, however, to leverage the Corps' expertise on more than an ad-hoc basis, when the issue is not associated with a particular Corps project. While the existing technical assistance programs like Silver Jackets have increasingly helped coordinate some assistance, it remains a reality that the Corps' expertise is rarely available unless there is an active, specific federal, Corps-funded project. Other federal agencies dealing with flooding issues such as FEMA,

From *Answers to Questions about the Flood Risk Management Program on the USACE website*:

Q: What is the basic difference between USACE and other agencies?

A: There are very few instances where funds can be used that are not tied to specific projects. Other Federal agencies and most state and local agencies are funded more on a programmatic level, which allows for discretionary use funds. The way USACE is funded makes it difficult to provide funding for non-project-specific work. Specific programs are described on this and other frequently asked questions pages.

NRCS, and the USGS have staff available through their disaster cadres, capacity building programs at the state level, national call centers, or distributed staff throughout the U.S. Each has a different model for providing federal resources at the local level. Given that the Corps has 38 domestic districts throughout the United States, the basic infrastructure exists to provide a much better technical-assistance role than it currently provides. By having a more robust technical-assistance role at every district, which is not project related, the research, expertise and knowledge of the Corps could be made much more widely available to help 20,000+ communities, states and territories.

- **To achieve the ability to deliver robust technical assistance for flood risk reduction nationwide, the USACE must fundamentally reorganize to provide intentional, discretionary use programmatic funding for non-project related technical assistance in every district.**

This transformational change would not only allow the WRDA 2020 Section 111 pilot to be successful, but would result in the USACE being able to provide such assistance nationwide in addition to allowing existing technical assistance programs to be more focused on projects and needs identified by states and communities where demand already exceeds availability.

ASFPM believes that overall the Silver Jackets program has proven to be successful and should continue with maximum flexibility to address individual state's needs and issues. There have been many benefits to the Corps, and states, tribes, and local governments from the Silver Jackets program including better coordination and understanding of the various programs and agencies involved in comprehensive flood-risk management, identification and coordination of resources, and development and undertaking of collaborative projects. It is important; however, that all Silver Jackets POCs from the Corps embrace the role and vision of the program.

The Floodplain Management Services (FPMS) program (authorized as a continuing authority under Section 206 of the 1960 Flood Control Act) can help address this need, and has provided valuable and timely services in identification of flood risks and flood damage. The FPMS program enables the Corps to support state, regional, and local priorities, as well as provide assistance to other federal agencies

for greater resiliency planning and alternatives selection in addressing flood risks through collaboration and cooperation by developing location-specific flood data, which can be used to reduce overall flood risks. WRDA 2020 (especially Sec. 111), includes critically important new provisions that enhance this authority by specifying as key purposes **"to avoid repetitive flooding impacts, to anticipate, prepare, and adapt to changing climatic conditions and extreme weather events, and to withstand, respond to, and recover rapidly from disruption due to the flood hazards,"** and to place priority on helping economically-disadvantaged communities and communities with repetitive flooding. We would hope the Corps will grow this program to a universal service through all Corps Districts nationwide, and fully utilize the full annual authorization provided in WRDA 2014 of $50 million.

Like FPMS, the Planning Assistance to States (PAS) program (Sec. 22 of WRDA 1974) was also authorized to provide valuable and timely services to states in identification of flood risks and flood damage. This program also allows for any effort or service pertaining to the planning for water and related resources of a drainage basin or larger region of a state, for which the Corps of Engineers has expertise. These programs have been shown to provide significant benefits for a relatively small investment. By providing Corps expertise, these programs assist states and communities to make better informed decisions and to engage in more comprehensive consideration of their flood risk and the various options for reducing the hazard. These can be structural, nonstructural, nature-based, or a combination, that can often lead to less expensive and more sustainable solutions.

ASFPM is concerned that PAS and FPMS are neither evenly nor consistently administered throughout the country. Certain Corps Districts have high expertise and capability with these programs and others do not. We know through our work with the Corps that there do not seem to be mechanisms or processes to comprehensively identify, collect, review and prioritize requests for FPMS/PAS services, review projects completed, and adjust program metrics in any consistent manner. ASFPM believes the demand for these programs far exceeds available resources. A few Corps Districts have staff dedicated to providing this FPMS and PAS technical assistance, but all Corps Districts should have the level of capability to provide these services. Another issue is that the Corps tend to "projectize" these services,

versus making the technical assistance more broadly and widely available. If the District had more dedicated staffing for these programs, delivery could be easier.

ASFPM also notes that technical assistance is especially important after flood disasters. Given the current structure and focus of the Corps – most post-disaster work has been focused on immediate response missions related to infrastructure and public works and flood response activities (flood fighting) and repair/rehabilitation work. However, given the Corps expertise and assets, they can also be brought to bear in providing technical assistance and problem-solving expertise. Again, however, delivery of this technical assistance has historically been hampered by the structural deficiencies within the Corps we noted earlier limiting the ability of the Corps to deliver technical assistance without an associated project.

Research & Development

The Research and Development function of the Corps underpins the ability to provide high quality technical assistance through data, tools and expertise. The USACE has several promising initiatives and programs, but as we have seen with other R&D initiatives across the federal government, the difficulty lies in widespread implementation of these initiatives into an agency's operations.

The first of these is the Engineering with Nature (EWN) initiative that is the intentional alignment of natural and engineering processes to efficiently and sustainably deliver economic, environmental and social benefits through collaboration. It incorporates the use of natural processes to maximize project benefits. ASFPM is very supportive of this initiative and is encouraged by its results and implementation strategy and notes that it is consistent with the broader focus in WRDA 2020 on nature-based solutions. The 2018-2022 EWN strategic plan properly focuses on expanding implementation. However, given the traction we have seen with other initiatives such as the nonstructural flood mitigation, we are concerned about its ultimate success.

- **Congress focus oversight to ensure that where nature-based solutions or alternatives have been established in law through WRDA 2020 and past WRDAs, that they are being operationalized by the USACE nationwide.**

- **The Corps should commit to fully supporting the operationalization of the EWN initiative throughout the agency.**

The second of these is the National Flood Barrier Testing and Certification Program (NFBTCP). A partnership among ASFPM, FM Approvals and the Corps (through the Engineer Research and Development Center (ERDC), the NFBTC Program is a unique public-private partnership, which resulted in the development of the ANSI 2510 standard and where commercial flood abatement products (i.e., perimeter flood barriers and flood mitigation pumps) are tested against that standard. The purpose of this program is to provide an unbiased process of evaluating products in terms of resistance to water forces, material properties and consistency of product manufacturing. Having an unbiased evaluation of flood protection products is a valuable research, flood fighting and technical assistance service for federal, state and local entities who use these products for flood fighting and flood loss reduction. This program and the Corps' participation in it aligns with Section 3022 of the 2014 WRRDA encouraging the Corps to use durable and sustainable materials and resistant construction techniques to resist hazards due to a major disaster and while there is no specific guidance in WRDA 2020 related to these products – technical assistance to communities is definitely enhanced by the Corps participation.

However, there are currently two barriers to optimal Corps involvement. First, the ERDC water testing laboratory must be upgraded or replaced, and be made capable of testing products being demanded by the marketplace. Currently, the facility is only capable of testing perimeter barriers to a height of 4 feet, yet manufacturers are making products that would protect to heights of 8-10 feet or more. We understand that the Corps is doing some preliminary design work on this and are very supportive of that effort. Second, as one of the largest users/purchasers of flood fighting material, it would show leadership as well as cooperation if Corps recognized and adopted the ANSI 2510 standard would be for the Flood Risk Management Program – through the National Flood Fight Material Center – and require the standard in future contracts when purchasing flood fighting materials (there are several manufacturers that now have certified products). We note that there are situations where communities that are subject to repetitive flooding events and receive emergency flood fighting

assistance. In previous conversations with Corps leadership on this issue, one concern expressed is that the ANSI 2510 standard was out of date and another was whether manufacturers could produce at the scale needed by the Corps. In fact, the ANSI 2510 standard was updated in the fall of 2020 and includes new classes of flood abatement products.

- **The Corps should commit to adopting the use of the ANSI 2510 for flood abatement products including working with manufacturers to scale up production as needed and incorporate guidance on the use of these new technologies in the studies performed under Section 119 of WRDA 2020.**
- **ASFPM supports Corps efforts to upgrade/replace the ERDC water testing laboratory which would support provisions in both the 2014 and 2020 WRDAs.**

Planning and the Use of Nonstructural Flood Risk Reduction Measures

Overall, ASFPM remains concerned about the lack of nonstructural, flood-risk reduction measures as part of the projects that the Corps is implementing. While the agency has the authority to implement a full array of nonstructural measures, and WRDA 2020 has added consideration of natural features and nature-based features in most project planning, thus far we are seeing too few of these measures actually being implemented. Yet these measures have been identified in many community hazard mitigation plans and other planning documents. It seems that if a project has not gone through a formal Corps planning process, then it does not formally exist. Better coordination is needed between the Corps and existing plans, which have proliferated in communities across the nation over the past 20 years (largely as a result of the Disaster Mitigation Act of 2000). We urge the Committee to monitor whether nonstructural and natural or nature-based flood-risk reduction measures continue to have an inherent disadvantage in most Corps programs or if the WRDA 2020 provisions result in meaningful changes. ASFPM encourages the Corps to identify and remove systemic biases against nonstructural, flood-risk reduction measures, especially for economically-disadvantaged communities, and elevate the status of such measures strategically. This should be a key element of updating and implementing the Principles, Requirements and Guidelines directed in WRDA 2020, Sec. 110.

ASFPM also applauds the inclusion of Sec. 216 of WRDA 2020 "Authorization of Lower and Upper Missouri River Comprehensive Flood Protection," which includes FPMS and PAS authority to supplement these studies of Missouri River levees as part of a system-wide study. The study will look at reservoir operations and all levees to evaluate how the systems should be managed, (especially whether levees should be rebuilt, moved back (e.g. "levee setbacks") to reduce erosion and provide conveyance, or removed, and to consider if other mitigation options could be employed, such as buyouts or elevation of buildings, which would be more effective and less costly). One emerging trend that we have observed nationally, which might have applicability on a Missouri River system study, is concern over flood control – including large reservoir releases - and how we might make changes in the USACE water control manuals for flood operations to reflect new and emerging conditions, such as more frequent and intense storms.

ASFPM also views the leadership role of the Army Corps of Engineers in the Federal Interagency Floodplain Management Task Force as a critical cooperation and coordination linkage with other federal agencies in addressing and managing the nation's flood risks. Federal agency coordination has deteriorated in the past decades. As federal agency budgets get reduced, interagency coordination is one of the first activities agencies cut or reduced. Yet as we experience increasing storm intensity and sea level rise, the need for federal agencies to collaborate with each other and the states is even more important. An example of an area where coordinated federal effort is critical is the development, collection, and public dissemination of better data and improved current and future conditions modelling with regard to: precipitation, storms and drought, flood risk mapping, stream and tidal gages, and topography (LiDAR). Two key mechanisms, the Federal Interagency Floodplain Management Task Force (FIFM_TF) and the Mitigation Federal Leadership Group (Mit-FLG) have an appropriate structure, but need more emphasis and more collaboration with states and need more dedicated resources for these efforts.

Finally, ASPFM notes that the center of expertise for the Corps for nonstructural flood-risk reduction rests with the National Nonstructural Committee within the Planning Community of Practice. While we

are encouraged —after a brief dissolution and reconstitution of the NNC the past couple of years — that there is at least some interest in maintaining this function within the Corps, we continue to be alarmed about its significant lack of human resources, the stove-piping of the committee (within the Planning Division) and agency headquarters support/champion and whether this will be a barrier to the meaningful implementation of the non-structural and nature based approaches supported in WRDA 2020.

Executive Order 13690 Implementation

A cornerstone for all agencies implementation of flood risk reduction under the current administration is the reinstatement of EO 13690. ASFPM believes that concurrent with and perhaps prior to implementation of many of the provisions of WRDA 2020, the Corps should undertake the necessary steps to develop agency policies, guidelines and procedures to comply with the EO's requirements for a more robust floodplain management standard.

Project Backlog

Congress took steps in WRDA 2020 to help address the large number of unfunded projects by including provisions to help USACE address the large project backlog. This backlog of projects extends from decades ago, so many of the projects on that backlog were not evaluated for economic, environmental or social impacts that are now required. WRDA established processes of certain projects and projects that have not been funded for 10 years. Also, USACE is required to provide Congress with a post authorization change report that reflects updated economic and environmental analyses before carrying out projects 20 years or more old. ASFPM strongly supports such analyses, especially in light of the many new WRDA 2020 requirements USACE must make in planning, analyzing and developing project alternatives.

Levee & Dam Risk Management

Despite enormous public investment in flood "control" structures, that spending has been outpaced by development in risky areas and development in the watershed that increases runoff and flooding,

and by the gradual deterioration of the protection provided by those structures. As the public grows to recognize the risks associated with levees, communities are working to evaluate the various actions they can take in response to those risks: levees can be repaired and improved or set back from the river to relieve pressure and erosion on the levee; homes, businesses and infrastructure at risk can be relocated to reduce risk and restore floodplain function. Waters can be detained upstream or adjacent to the stream by re-opening areas closed to flood storage and conveyance, such as Napa, California did; and measures can be combined to achieve the most effective results with scarce public dollars, with a particular eye to reducing the long-term operations and maintenance (O&M) costs for communities and taxpayers. WRDA 2020 has made substantial progress in this direction, particularly in the area of planning new projects, and it will be important to help the Corps with vigorous implementation of these new authorities going forward.

- **In implementing Sections 114, 115, 116, 119 and 123 of WRDA 2020, the Corps should adopt specific policies and guidelines for new or reconstruction of levees that encourage increased use of levee setbacks from the water's edge to preserve riparian areas, reduce erosion and scour, reduce flood levels and flooding risks, and to allow natural floodplain ecosystems to better serve their natural functions.**

ASFPM would like to note some positive developments in recent years regarding levee and dam risk management and how they positively impact some of the new planning provisions of WRDA 2020, including Sections on Resiliency Planning Assistance (Sec 111) and directing the Corps to update its policies on environmental justice (Sec 112). The first of those has been the development of and public access to the National Levee Database (NLD) and National Inventory of Dams (NID). ASFPM was pleased to see the opening of the NLD for public access in 2018 (this follows the public access to NID, which occurred in 2015). This is an important evolution in levee and dam risk management to ensure the public has access to essential information regarding these flood-risk management structures. According to NLD, there are nearly 26,000 miles of levees with nearly 45,000 levee structures having an average age of 57 years. Second, was the Corps' new policy on Emergency Action Plans (EAPs) and required inundation mapping (EC 1110-2-6074). This policy standardizes inundation mapping and

establishes inundation mapping requirements for dams and levees. Third, the Corps and FEMA's more recent decision to publicly publish information on levee and dam failure inundation mapping in the national databases, with limited exclusions is essential. Information including levee risk descriptions and inundation mapping is already available in the NLD, where available. Similar information for Corps dams is in the process of being developed or formatting with a target of having it public "facing" in the NID later this year. The public availability of this data will help property owners and communities make better informed flood risk decisions, and plan for and respond to adverse flooding incidents. It will also help FEMA meet one of the mapping requirements in the 2012 Biggert-Waters National Flood Insurance Program reauthorization, which required mapping of all residual risk, including failure inundation areas associated with dams, levees, and other water control structures. Public availability is especially critical in economically disadvantaged communities that often do not have the means to hire consultants or experts to develop or find these important data. In addition, flood risk resiliency planning simply cannot happen when critical inundation information is unavailable.

Unfortunately, most other federal agencies that own, operate, or regulate these structures cling to the post 9/11 policy artifact that heavily restricts access to failure and other key information for "critical infrastructure." We commend the Corps for their leadership in making this critical flood risk information publicly available and suggest that Congress urge other federal agencies to follow the example and groundwork forged by the Corps and begin to publish this critical data for their flood control infrastructure.

- **Congress should mandate that inundation mapping developed by all federal government agencies and/or associated with federal programs for dams and levees and other flood control infrastructure be made publicly available.**

It has come to light in recent years that many levees on the Mississippi River have been raised above their authorized height. This will result in more flooding across the river or upstream and downstream of that higher levee because the water has to go somewhere. This can lead to "leapfrog levee," where

levee owners on the other side of the river then raise their levee higher, and the cycle continues. We were quite pleased to see that Congress in WRDA 2020 – particularly in Title II provisions considering Great Lakes basin and in the Lower Mississippi River and Lower Missouri River basins has encouraged development of more comprehensive Corps basin-level reviews and studies that should shed light on levee systems overall effects on flood hazards and the values of nonstructural approaches and natural and nature-based features as management measures in addressing these basins' flood risks. We urge close attention to these studies and how they are utilized to inform decisions regarding levee repairs and rehabilitations in specific instances so as not to exacerbate risk in other areas. Such basin-wide planning and updating is needed in many basins across the country.

- **ASFPM urges strong continued federal oversight to maintain levees at authorized levels. This should be done by the Corps or FEMA, and it must be adequately enforced.**

Finally, the National Dam Safety Program Act authorized the High Hazard Potential Dam Rehabilitation Program (HHPD) which provides grants to states to help rehabilitate the highest risk dams in their states. After first implementation in 2019, it was apparent that improvements to the authorizing language were needed. ASFPM, in coordination with the American Society of Civil Engineers (ASCE) and the Association of State Dam Safety Officials (ASDSO), worked with FEMA and Sen. Feinstein's office to propose changes which clarify grant eligibility requirements and better define technical terms. ASFPM supported the inclusion of a floodplain management planning requirement for communities impacted by a dam in the HHDP. WRDA 2020, Sec. 132 WRDA 2020 legislation also improved the language for the floodplain management planning requirement. ASFPM believes that such plans must be practical and implementable so that those impacted can better understand flood risk and take steps to mitigate against the residual risk. These changes improve the implementation of this critical program that will help address safety issues for state regulated, high risk dams in the nation. Unfortunately, the demand and need for this program is currently far greater than the appropriated funding,

- **ASFPM urges the Committee to pay special attention to assuring these provisions are timely and adequately implemented. Additionally, the committee should monitor demand for this program and make adjustments to the authorization level as appropriate.**

Adjustments to P.L. 84-99

ASFPM particularly would like to highlight WRDA 2020, Sec. 119. "Permanent measures to reduce emergency flood fighting needs for communities subject to repetitive flooding." This provision is potentially an important bridge and piloting effort to help with a seriously needed updating and improvement in the Corps' P. L. 84-99 Emergency Assistance and Rehabilitation program. Where an enrolled community has a history of repetitive flooding and has received Corps' emergency flood fighting assistance (including temporary barriers), and the Corps and the community has a properly studied and documented solution for reducing flood risks, which would have a federal cost of less than $17.5 million, this new provision allows the Corps to proceed to construction or implementation, without the standard project-specific congressional authorization (more like a continuing authorities-type project). We are especially encouraged at the inclusion of the requirements in this new process that, in planning, substantive consideration will be made "to the maximum extent practicable" for utilizing nonstructural and/or natural or nature-based features, including levee realignments.

Currently, the P.L. 84-99, the Corps' disaster assistance authority, is legislatively built on language that was first adopted in 1941. In recent WRDAs we have generally seen only incremental changes, while costs of flood disasters are increasing dramatically, and simultaneously we are recognizing our overall approaches to flood-risk management require substantial new direction. As an example, P.L. 84-99 provides by far the most generous cost-sharing formula of all the Corps' activities, to assist in repair and rehabilitation of disaster-damaged levees and hurricane and storm damage reduction projects. In many cases, the repairs are coming at high federal taxpayer expense and are being repeated over and over without serious review because current policy constrains or bars the Corps from studying and recommending changes (and makes even the consideration of nonstructural approaches subject to a non-federal sponsor's consent).

Under P.L. 84-99, the Chief of Engineers, acting for the Secretary of the Army, is authorized to undertake activities including disaster preparedness, advance measures, emergency operations (flood response and post flood response), rehabilitation of flood control works threatened or destroyed by flood, protection or repair of federally authorized shore protective works threatened or damaged by coastal storms, and provisions of emergency water due to drought or contaminated source. P.L. 84-99, which is the principle Corps program to repair and rehabilitate, incorporates a significant bias against nonstructural and integrated approaches combining structural and nonstructural approaches) to rehabilitation and repair of flood control works (FCWs).

We look forward to seeing how the new Section 119 provision of WRDA 2020 works in practice, and urge the Committee to look toward additional efforts to modernize and update the Corps emergency and rehabilitation programs in the future.

Implementing Principles, Requirements and Guidelines (PR&G)

ASFPM applauds the inclusion of Section 110 of WRDA 2020, "Implementation of the Water Resources Principles and Requirements," which directs the Secretary to issue final agency-specific procedures to implement the Principles, Requirements and Guidelines (PR&G) for planning Corps projects. We recommend that this be a top priority for WRDA 2020 implementation, and that any new guidance be updated to include responsiveness to additional principles reflecting resiliency provisions articulated in several of WRDA 2020's provisions, including environmental and social equity considerations, climate change, sea-level rise and other anticipated future conditions, best available science-based planning, and long-term public safety concerns. ASFPM would expect that implementing Section 110 will include a process to update the 2013/2014 Principles & Requirements, as well as new requirements in WRDA 2020 and elements of other WRDA's since 2014, including new opportunities for public review and comment. This implementation must be coordinated with other federal water resources development and management agencies' PR&G implementation, as well.

Federal activities and Corps investments in water resources and flood-control projects have been guided by a process that has remained largely unchanged for 30 years, despite a growing record of

disastrous floods. The first set of "Principles and Standards" was issued in September 1973 to guide the preparation of river basin plans and to evaluate federal water projects. Following a few attempts to revise those initial standards, the current principles and guidelines went into effect in March 1983. Since then, the national experience with flood disasters has identified the need to update federal policy and practice to reflect the many lessons learned and advancements in data, information and practice.

Section 2031 of the Water Resources Development Act of 2007 (WRDA 2007) called for revision to the 1983 Principles and Guidelines (P&G) for use in the formulation, evaluation, and implementation of water resources and flood control projects. WRDA 2007 further required that revised principles and guidelines consider and address the following:

1. The use of best available economic principles and analytical techniques, including techniques in risk and uncertainty analysis.
2. The assessment and incorporation of public safety in the formulation of alternatives and recommended plans.
3. Assessment methods that reflect the value of projects for low-income communities and projects that use nonstructural approaches to water resources development and management.
4. The assessment and evaluation of the interaction of a project with other water resources projects and programs within a region or watershed.
5. The use of contemporary water resources paradigms, including integrated water resources management and adaptive management.
6. Evaluation methods that ensure that water resources projects are justified by public benefits.

In general, these requirements represented important goals for updating the P&G to respond to changes in the nation’s values and increasingly looming concerns for our water resources nationally. In December 2014, the Obama Administration published an updated set of guidelines called the

Principles, Requirements and Guidelines, which some federal agencies have implemented, but since the FY 2015 Consolidated Appropriations legislation, the Corps was barred from implementing the revised P&G, or to make much in the way of needed changes in approaches or technical aspects of project planning. While Congress had some questions about the specific proposed revisions, we believe that an updating of project planning and evaluation procedures continues to be a strong current and future need to respond to present and changing priorities.

As an example, a major weakness of past benefit-cost analysis for water resources projects has been the failure of project planners to realistically account for the full life-cycle project costs over project lifetimes. This results in a bias for structural projects that require significant long-term O&M and rehabilitation costs, whereas nonstructural designs often have little or no maintenance, masking the true costs of alternatives.

- **ASFPM recommends that in developing the implementation guidance for the Principles and Requirements, agencies must require a full accounting of long-term operations, maintenance, repair, rehabilitation and replacement costs be included in benefit-cost analyses for all structural and nonstructural projects, and identify which costs are a federal responsibility or the responsibility of non-federal sponsors or other interests.**

Additionally, another weakness of past benefit-cost analysis for water resources projects is the failure to recognize or give significant weight to the inherent societal benefits of non-structural projects that remove people from high risk areas, thereby saving lives.

The 1983 P&G requires selection of water resources projects that maximize net National Economic Development (NED), regardless of total costs to taxpayers or the social or environmental impacts.

- **ASFPM recommends that the Corps and other agencies develop and transition federal planning principles to a National Economic Resilience and Sustainability standard instead of the current National Economic Development standard to explicitly incorporate the**

values of multiple ecosystem services, including the non-market public values provided by the nation's floodplains and ecosystems.

Floodplain management, public safety and long-term environmental quality and sustainability would, in many instances, improve by expanding to a resilience/sustainability standard approach.

Another major concern with water resources projects is that they should be designed and analyzed on conditions that will exist at the end of their design life. For example, if a levee is designed for a 50-year life, the level of protection it will provide must be calculated using the hydrology (rainfall and runoff) and sea level rise that can be projected for the end of that design life. As extreme rainfalls increase and sea level rises, it is foolhardy to not use these future conditions in design and BCA analysis. We are currently seeing levees that no longer provide the design level of protection because design rainfalls have increased from 25-45%, thus the design flood height is much higher. In those cases, levee overtopping and failure result in excessive damage because development in the "protected area" now experiences flooding at great depths and damages. Nonstructural options like elevation of buildings or relocation would not experience that catastrophic damage. All such information needs to be factored in the BCA analysis.

Conclusion

The Corps is uniquely positioned, with Congressional support, to help transform itself and take a different, much more inclusive, holistic and collaborative approach. WRDA 2020 is a step in that direction. Rare among agencies, the Corps allocates significant resources for research and development through entities like the Institute for Water Resources and ERDC, and has a long history of expertise in all aspects of flood-loss reduction — both structural and nonstructural. Centers of expertise such as the USACE National Nonstructural Floodproofing Committee focus on measures to reduce the consequences of flooding versus reducing the probability of flooding. The successful Silver Jackets program is putting the Corps into a new "convener" role, bringing other federal agencies together with state, local, and tribal governments and other entities to find flood risk management solutions. Initiatives like Engineering with Nature and the USACE partnership with ASFPM in the

National Flood Barrier Testing and Certification Program continue to forge new paths; leveraging new technologies and approaches to tackle long-standing flood problems. We are encouraged by the direction set by WRDA 2020 and its provisions focusing on resiliency, non-structural and nature-based approaches to flood risk management and at the same time are concerned that these approaches will not be implemented in a way to realize their full potential. We urge careful and continued oversight.

Thank you for the opportunity to share our observations with you. We hope you find them helpful in your continued oversight of the U.S. Army Corps of Engineers and the implementation of WRDA 2020. If you have any questions, please contact ASFPM Executive Director Chad Berginnis at (608) 828-3000 or cberginnis@floods.org.