

**THE WATER RESOURCES DEVELOPMENT ACT OF
2020: STATUS OF ESSENTIAL PROVISIONS**

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REMOTE HEARING
BEFORE THE
SUBCOMMITTEE ON
WATER RESOURCES AND ENVIRONMENT
OF THE
COMMITTEE ON
TRANSPORTATION AND
INFRASTRUCTURE
HOUSE OF REPRESENTATIVES
ONE HUNDRED SEVENTEENTH CONGRESS

FIRST SESSION

MARCH 23, 2021

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U.S. House of Representatives
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MARCH 19, 2021

SUMMARY OF SUBJECT MATTER

TO: Members, Subcommittee on Water Resources and Environment
FROM: Staff, Subcommittee on Water Resources and Environment
RE: Subcommittee Hearing on “The Water Resources Development Act of 2020: Status of Essential Provisions”

PURPOSE

The Subcommittee on Water Resources and Environment will meet in open session on Tuesday, March 23, 2021, at 11:00 a.m. in the Rayburn House Office Building, Room 2167, and via Cisco Webex, to receive testimony related to the implementation of the Water Resources Development Act (WRDA) of 2020. The purpose of this hearing is to provide Members with an opportunity to review the implementation of U.S. Army Corps of Engineers (Corps) projects and policies included in WRDA 2020, and discuss those that will have the greatest impact on clearing maintenance backlogs, modernizing our water resources infrastructure, and getting critical assistance to communities.

BACKGROUND

The Corps is the federal government’s largest water resources development and management agency and is comprised of 38 district offices within eight divisions.¹ The Corps operates more than 700 dams; has constructed 14,500 miles of levees; and maintains more than 1,000 coastal, Great Lakes, and inland harbors, as well as 12,000 miles of inland waterways.²

Navigation was the earliest civil works mission, such as when Congress authorized the Corps to improve safety on the Ohio and Mississippi Rivers in 1824. Since then, the Corps’ primary missions have evolved and expanded to include flood damage reduction along rivers, lakes, and the coastlines, and projects to restore and protect the environment. Along with these missions, the Corps is the largest generator of hydropower in the nation, provides water storage opportunities to cities and industry, regulates development in navigable waters, assists in national emergencies, and manages a recreation program.³

To achieve its mission in planning, designing, and constructing water resources development projects, the Corps utilizes a planning process that seeks to balance economic development and environmental considerations as it addresses water resources challenges.⁴

The first step in a Corps project is to study the feasibility of the project. This can be done in two ways.⁵ One, if the Corps has previously conducted a study in the area of the proposed project, the new study can be authorized by a resolution of either the House Committee on Transportation and Infrastructure or the Senate Committee on Environment and Public Works (pursuant to 33 U.S.C. 542); however, the

¹ See <https://www.usace.army.mil/locations.aspx>.

² See <https://www.crs.gov/Reports/R45185#fn1>.

³ See generally, <https://www.usace.army.mil/Missions/Civil-Works/Hydropower/>; <https://www.gao.gov/products/GAO-17-500>; and <https://www.usace.army.mil/missions/civil-works/recreation/>.

⁴ See Summary of Subject Matter Subject, Hearing of the Subcommittee on Water Resources and Environment, entitled “Proposals for a Water Resources Development Act of 2020”, Jan. 9, 2020.

⁵ See *id.*

Committee on Transportation and Infrastructure has not adopted a new study resolution since 2010. Two, if the area has not been previously studied by the Corps, then an Act of Congress is necessary to authorize the study—usually through a WRDA bill.

During the feasibility study phase, the corresponding Corps' district office prepares a draft study report containing a detailed analysis on the economic costs and benefits of carrying out the project and identifies any associated environmental, social, or cultural impacts.⁶ After a full feasibility study is completed, the results and recommendations of the study are submitted to Congress in the form of a report approved by the Chief of Engineers (referred to as a Chief's Report). If the results and recommendations are favorable, then the subsequent step is Congressional authorization for construction of the project through a WRDA bill.

The Corps can also utilize Director's reports to further water resources projects, which are signed by the Director of Civil Works, when such projects are determined to be within the scope of an existing authorization.⁷

STATUS OF WRDA 2020 IMPLEMENTATION

WRDA 2020 was signed into law as Division AA of the Consolidated Appropriations Act, 2021 (P.L. 116–260) on December 27, 2020.⁸ Traditionally enacted biennially, water resources development bills are the principal legislative vehicles to authorize studies, projects, and policies carried out by the Corps.

WRDA 2020 authorized 46 Chief's Reports, eight Director's Reports, 27 new feasibility studies, and six comprehensive river basin studies. The bill also included several modifications to existing Corps policy provisions, program updates, and expanded authority for operations.

As part of implementing WRDA 2020, the Corps must consider whether new agency guidance is necessary to execute specific provisions created or amended within the bill; not all changes to Corps' statutes and policies require additional implementation guidance.

INVESTING IN OUR PORTS, HARBORS, AND INLAND WATERWAYS

Marine transportation is essential to supporting the U.S. economy through the movement of imported and domestic goods. According to the Congressional Research Service (CRS), oceangoing vessels carry more cargo to and from the United States than all other modes combined (air, trucks, rail, and pipeline).⁹ This accounts for 80 percent of the total merchandise trade volume for the country.¹⁰ Simultaneously, our inland waterways annually move about 600 million tons of cargo, valued at approximately \$250 billion.¹¹ Barging via the inland waterways represents the lowest carbon footprint and highest fuel-efficiency among other modes of surface transportation.¹²

WRDA 2020 included several key provisions to improve the operation, maintenance, and construction of Corps' navigation projects, including:

- Section 101 authorizes the full utilization of funds from the Harbor Maintenance Trust Fund (HMTF) by allowing increasing appropriations from both prior collections and the balance of the HMTF outside a discretionary budget cap for the dredging and maintenance needs at ports and harbors across the country.
- Section 102 directs the Corps to expend designated percentages of HMTF resources towards emerging harbors, donor and energy transfer ports; Great Lakes ports; and commercial strategic seaports, as well as modifies the “expanded use” definitions for donor and energy transfer ports and emerging harbors.
- Section 104 modifies the authority created by section 2106 of the Water Resources Reform and Development Act of 2014 (P.L. 113–121) for additional measures at donor and energy transfer ports.

⁶ See *id.*

⁷ See U.S. Army Corps of Engineers, “Planning Community Toolbox”, <https://planning.ercd.dren.mil/toolbox/library.cfm?Option=Direct&Group=Main&Item=Director%20Report&Sub=None&Sort=Default>

⁸ A section-by-section of WRDA 2020 can be found at <https://transportation.house.gov/download/wrda-section-by-section>.

⁹ <https://www.crs.gov/Reports/R43222?source=search&guid=dc51bbd2aa55499184e5ad610aa4e590&index=0>.

¹⁰ See *id.*

¹¹ <https://www.iwr.usace.army.mil/Portals/70/IWUB%20Annual%20Report%2033rd%20for%202020%20Dec20%20Final.pdf>.

¹² See *id.*

- Section 109 provides a 10-year modification to the cost share for construction of projects on the inland waterways, increasing the federal resources available for the construction and major rehabilitation of inland waterways projects and ensuring the continued reliability of locks and dams throughout the system.

BUILDING RESILIENT COMMUNITIES

Many existing Corps' facilities and infrastructure projects were constructed in the early to mid-1900s. As a result, approximately 95 percent of the dams managed by the Corps are more than 30 years old, and half have reached or exceeded their 50-year project lives.¹³ The Corps' ability to manage its aging infrastructure is coupled with the need to balance multiple authorized purposes. In addition, the Corps continues to respond to the challenges of extreme weather events, strengthening storms, and sea level rise—each of which create unique strains on water infrastructure, and require diverse approaches to meet the complex needs of communities relying on it.

WRDA 2020 includes several provisions intended to modernize the Corps' approach to evaluating and executing water resources development projects, as well as to increase the overall resiliency of water resources development projects, including:

- Section 110 requires the Corps to issue final agency-specific procedures to implement the water resources principles and requirements which will help ensure comprehensive analysis of the benefits and costs for future water resources development projects.
- Sections 111 and 113 direct the Corps to evaluate the potential impacts of changing climatic conditions, extreme weather events, and sea-level rise in future water resources development projects, and to provide technical assistance to non-federal interests for greater resiliency planning.
- Sections 114, 115, and 116 emphasize the incorporation of nonstructural or natural or nature-based features in water infrastructure, while ensuring their affordability and effectiveness at meeting a community's need.
- Section 125 provides additional direction to the Corps for the beneficial use of suitable dredged material associated with Corps' projects.
- Section 221 directs the Corps to analyze and report to Congress on the benefits and consequences of including water supply and water conservation as a primary mission of the Corps.

ENSURING ACCESS AND AFFORDABILITY NATIONWIDE

Typically, both the feasibility study and construction phases of a Corps' project require the non-federal project sponsor to contribute to the cost of the project. The cost of a study is typically shared 50 percent by the federal government (subject to appropriations) and 50 percent by the non-federal project sponsor.¹⁴ The cost share split for the construction phase varies slightly depending on the project purpose.¹⁵ The Committee has received testimony that meeting cost-share levels can be difficult for communities with affordability concerns.¹⁶ Additionally, rigid reliance on requiring that a Corps project be justified on a "national economic development" basis can preclude smaller, rural, and economically disadvantaged communities from partnering with the Corps to address local water resources development challenges.¹⁷

WRDA 2020 makes important strides to better enable communities of all affordability levels and economic status to participate in the Corps process and access the expertise or water infrastructure they need. It also helps ensure that the Corps provides wider community engagement and consultation with such communities in the Corps process. Examples of provisions in WRDA 2020 that address access and affordability concerns, include:

- Section 112 requires the Corps to update its environmental justice policies and ensures that the Corps provide meaningful consultation with minority commu-

¹³The National Academies Press, Corps of Engineers Water Resources Infrastructure, <https://www.nap.edu/read/13508/chapter/3>, at 62.

¹⁴See section 105 of the Water Resources Development Act of 1986 (33 U.S.C. 2215).

¹⁵See sections 101, 102, and 103 of the Water Resources Development Act of 1986 (33 U.S.C. 2211, 2212, and 2213).

¹⁶See e.g. Hearing of the Subcommittee on Water Resources and Environment, entitled "Concepts for the Next Water Resources Development Act: Promoting Resiliency of our Nation's Water Resources Infrastructure (November 19, 2019)".

¹⁷See *id.* For a more detailed description on the issues related to benefit/cost analyses, see also, The National Academies Press, Analytical Methods and Approaches for Water Resources Project Planning, <https://www.nap.edu/read/10973/chapter/5>.

nities, low-income communities, and tribal communities affected by water resources development projects.

- Sections 117, 118, and 165 provide the Corps with additional flexibility in addressing the water resources needs of rural, small, or economically disadvantaged communities.
- Section 119 authorizes the Corps to work with communities facing repetitive flooding in developing and implementing permanent measures to reduce emergency flood fighting needs.

CONCLUSION

On March 8, 2021, the Corps published in the Federal Register its framework for soliciting public comment and conducting stakeholder listening sessions for implementation of WRDA 2020.¹⁸ The Corps has stated that the public comment period for implementation of WRDA 2020 provisions will end on May 7, 2021.¹⁹

The Committee on Transportation and Infrastructure will continue to oversee the Corps' implementation of all of the provisions enacted in WRDA 2020, and ensure these provisions are applied consistent with Congressional intent.

WITNESSES

- Matthew J. Strickler, Secretary of Natural Resources, Commonwealth of Virginia
- Gene Seroka, Executive Director, Port of Los Angeles
- Mary Ann Bucci, Executive Director, Port of Pittsburgh Commission
- Michael F. Piehler, Ph.D., Director, UNC Institute for the Environment
- Chad Berginnis, Executive Director, Association of State Floodplain Managers

¹⁸ See 86 Fed. Reg. 13346 (March 8, 2021)

¹⁹ See *id.*

THE WATER RESOURCES DEVELOPMENT ACT OF 2020: STATUS OF ESSENTIAL PROVISIONS

TUESDAY, MARCH 23, 2021

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON WATER RESOURCES AND
ENVIRONMENT,
COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE,
Washington, DC.

The subcommittee met, pursuant to call, at 10:59 a.m. in room 2167 Rayburn House Office Building and via Cisco Webex, Hon. Grace F. Napolitano (Chair of the subcommittee) presiding.

Present in person: Mr. DeFazio, Mr. Rouzer, and Dr. Babin.

Present remotely: Mrs. Napolitano, Mr. Huffman, Ms. Johnson of Texas, Mr. Garamendi, Mr. Lowenthal, Mr. Delgado, Mr. Pappas, Ms. Bourdeaux, Mr. Carbajal, Mr. Stanton, Ms. Norton, Mr. Katko, Mr. Graves of Louisiana, Mr. Weber, Mr. LaMalfa, Mr. Westerman, Mr. Mast, and Ms. Mace.

Mrs. NAPOLITANO. Good morning. I call this hearing to order.

Today's hearing will focus on the Water Resources Development Act of 2020, and the policies we enacted in that legislation late last Congress. Let me begin by asking unanimous consent that the chair be authorized to declare recess at any time during the hearing.

Without objection, so ordered.

As the chair of today's hearing, I will make a good-faith effort to provide every Member experiencing connectivity issues an opportunity to fully participate in the proceedings. Please let the committee staff know as soon as possible if you are experiencing connectivity issues or have technical problems. It is the responsibility of each Member seeking recognition to unmute their microphone to speak. To avoid any inadvertent background noise, I request that every Member keep their microphone muted when not seeking recognition to speak. Should I hear any inadvertent background noise, I will stop and request the Member to please mute their microphone.

And finally, to insert a document into the record, please have your staff email it to DocumentsT&I@mail.house.gov.

Now, to the topic of the hearing. Today, we will begin this subcommittee's oversight of the U.S. Army Corps of Engineers by discussing steps to implement the Water Resources Development Act of 2020. The Corps is, simply put, the Nation's premier water resources agency. Congress has vested the Corps with significant responsibility to carry out vital projects for navigation, flood damage

reduction, ecosystem restoration, water supply, and a host of other very critical project purposes.

It is critical that the Corps prioritize immediate implementation of the critical policies enacted in WRDA to address the protection and well-being of our communities and environment, as well as to meet the maintenance needs of our water resources infrastructure, both of which are so critical to our national, regional, and local economies. This committee, on a bipartisan basis, has successfully enacted four consecutive Water Resources Development Acts since 2014. Regular enactment of WRDAs is critical because of the predictability it provides to local sponsors, who partner with the Corps for the development of feasibility studies for future water resources development projects.

At the same time, regular enactment of WRDAs also gives Congress the opportunity to provide regular oversight and direction to the Corps on how it should develop and implement these projects.

The subcommittee has a very unique interest in how the Corps implements WRDA laws. We want to know that the Corps implements the law expeditiously as Congress intended, and ensure the Corps remains responsive to national, regional, and local priorities and to a changing climate with the proper budget to address these issues.

WRDA 2020 demonstrated the strong bipartisan support for increasing the resiliency of our infrastructure, and finally providing the Corps with the tools outlined over a decade ago to address new and increasing challenges to our water infrastructure in a way that improves our environment, addresses social inequities, and stimulates economic opportunity.

I am specifically interested in WRDA provisions we included that improve the National Dam Safety Program, the inclusion of nature-based alternatives, and the consideration of a community's water supply needs as a primary mission for the Corps. My district includes Corps dams built many years ago, over 50 years ago, that need both safety improvements and revisions of their outdated water control manuals to more effectively help communities with their water supply.

I am also proud of policies in WRDA 2020 that will engage more communities, especially minority and Tribal communities, in the Corps process and provide them with better access to those beneficial projects.

I hope those provisions addressing environmental justice concerns, repetitive flooding, and affordability will be among the top priorities for the Corps' implementation.

I would also like to emphasize the importance of changes made in WRDA 2020 that unlock additional funds for harbor maintenance needed around the country. My region includes the largest ports in the Nation, the Port of Los Angeles, and the Port of Long Beach. I am glad to have Gene Seroka—hello, Gene—from the Port of Los Angeles here today to discuss the backlog of maintenance needs at our ports and harbors, and how WRDA 2020 will provide critical support in ensuring the viability and efficiency of our ports for decades to come.

The committee leadership sent a letter to President Biden on February 12th urging the administration to move quickly to unlock

the trust fund and spend the harbor maintenance dollars authorized in the bill.

I would like to thank the entire panel of stakeholders who are here today who will help us to understand the impacts and the importance of these policies once they are fully implemented. As the Corps develops implementation guidance for the policy provisions included in WRDA 2020, your perspectives and insight will be critical to prioritizing issues that will have the greatest benefit to our Nation.

[Mrs. Napolitano's prepared statement follows:]

Prepared Statement of Hon. Grace F. Napolitano, a Representative in Congress from the State of California, and Chair, Subcommittee on Water Resources and Environment

Good morning.

Today, we will begin the Subcommittee's oversight of the U.S. Army Corps of Engineers by discussing steps to implement the Water Resources Development Act of 2020.

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As the Corps develops implementation guidance for the policy provisions included in WRDA 2020, your perspectives and insight will be critical to prioritizing issues that will have the greatest benefit to our nation.

Mrs. NAPOLITANO. And at this time, I am very pleased to yield to my colleague, the ranking member of our subcommittee, Mr. Rouzer, for any thoughts he may have.

Mr. ROUZER. Thank you, Chair Napolitano, for holding this hearing, and thank you to our witnesses for being here today to discuss the important work of the Army Corps of Engineers. In particular, I would like to thank Dr. Michael Piehler, director of the Institute for the Environment at the University of North Carolina at Chapel Hill, for taking the time to appear with us today and provide his expert testimony.

Welcome, Dr. Piehler.

I am proud to serve on this committee, which has passed four major, transformational WRDA laws during the last four Congresses to improve our Nation's water resources infrastructure. Given this tremendous accomplishment, I would like to see the Corps expeditiously implement the significant reforms made by these laws. As we look forward to future water resources legislation, one issue that cannot be overlooked is the inland and coastal flooding that has occurred across the Nation. All areas in North Carolina, from coastal and surrounding counties to the mountains, have experienced significant flooding events on numerous occasions. Most recently in November, Tropical Storm Eta hit North Carolina hard, resulting in flooding that caused 12 deaths, required dozens of people to be rescued, and caused more than \$20 million in damages.

In addition, there has been Hurricane Florence in 2018, Matthew in 2016, Floyd in 1999, and Fran in 1996, to name just a few of these devastating flood events.

Historic flooding, such as this should spur us to reexamine infrastructure, to ensure it is updated and capable of protecting life and property. These disasters pose an important question to Congress: What can we do to help prevent future flooding? Equally important, how can we improve infrastructure within our States to reduce the risk of dam and levee breaches, flooded homes and businesses, and to better protect our coast?

In addition to storm events, we have seen significant economic loss in places throughout the country where barges and boats can no longer navigate our inland waterways. Much of this waterborne commerce is dependent on infrastructure that was initially constructed in the 1970s, 1960s, or earlier, and it is quickly approaching the end of its design life.

So, as we reflect on this flooding—the hardship and devastation it brings—and the other issues our Nation faces with aging water infrastructure, it is important for this committee to continue its bipartisan commitment to work and pass critical water resources legislation. Our citizens cannot afford the devastating effects of floods

to their homes, farms, businesses, and communities. We owe the American people our absolute best efforts to help with this.

I look forward to hearing about the implementation of WRDA 2020 from our witnesses and the previous but more recent WRDAs, as well as hearing constructive ideas from the experts that we have before us today.

[Mr. Rouzer's prepared statement follows:]

Prepared Statement of Hon. David Rouzer, a Representative in Congress from the State of North Carolina, and Ranking Member, Subcommittee on Water Resources and Environment

Thank you, Chair Napolitano, for holding this hearing, and thank you to our witnesses for being here today to discuss the important work of the Army Corps of Engineers. In particular, I'd like to thank Dr. Michael F. Piehler, Director of the Institute for the Environment at the University of North Carolina at Chapel Hill, for taking the time to appear here and provide his expertise today.

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These disasters pose an important question to Congress: what can we do to help prevent future flooding? And equally importantly, how can we improve infrastructure within our states to reduce the risk of dam and levee breaches, flooded homes and businesses, and to better protect our coasts?

In addition to storm events, we've seen significant economic loss in places throughout the country where barges and boats can no longer navigate our inland waterways. Much of this waterborne commerce is dependent on infrastructure that was initially constructed in the 1970s, 1960s, or earlier, and is quickly approaching the end of its design life.

So, as we reflect on these floods—the hardship and devastation they bring—and the other issues our Nation faces with aging water infrastructure, it is important for this committee to continue its bipartisan commitment to work and pass critical water resources legislation. Our citizens can't afford the devastating effects of floods to their homes, farms, businesses, and communities. We owe the American people our absolute best efforts to help them on this.

I look forward to hearing about implementation of WRDA 2020 and the previous but more recent WRDAs as well as hearing constructive ideas from our witnesses on addressing future water resources infrastructure needs.

Mr. ROUZER. Madam Chair, I yield back.

Mrs. NAPOLITANO. Thank you, Mr. Rouzer.

At this time, I am pleased to yield to the chairman of the full committee, Mr. DeFazio, for any thoughts he may have.

Mr. DEFazio. Thank you, Madam Chair. We are kicking off now what will be the fifth consecutive 2-year reauthorization of the Water Resources Development Act. This was initiated by my predecessor and friend, Bill Shuster, after many years of erratic reauthorizations and long lapses many times. And I want to thank those who were key in this legislation last year, my ranking member, Sam Graves; the chair, Grace Napolitano; and former sub-

committee ranking member Bruce Westerman; and I know now that Dave Rouzer is going to be a great partner, and we are going to get the fifth one in a row done.

The last year authorized the construction of all 46 pending reports. Of course, the Corps does have a substantial backlog, and needs additional funding, and that is something to be discussed as we move forward. But regular enactment of WRDA sends a signal of predictability, both to the Corps and to non-Federal sponsors that we can and will, even in a bitterly divided Congress, on a bipartisan basis, authorize water resources development projects in a transparent and efficient manner, and, hopefully, address local challenges, a number of which the ranking member mentioned regarding his State.

It also was a finalization of something that I started working on not with Bill Shuster, but with Bud Shuster, his dad, who chaired this committee in the 1990s, and that was unlocking the Harbor Maintenance Trust Fund. This was a long struggle. Twice in the minority, when Bill was moving the bill, I got this committee to unanimously support unlocking the Harbor Maintenance Trust Fund, but twice, Speaker Ryan had the Rules Committee pull it out of the bill. Luckily last year, Speaker Pelosi was totally in concert with unlocking the Harbor Maintenance Trust Fund, and we finally got it done.

And this year, I expect the Corps—the Corps has told us that they have the capacity to fully obligate \$2 billion. That will be the largest 1-year expenditure that I can remember for the backlog of needed harbor maintenance around the country.

And, then, I want to thank, again, my ranking member, Sam Graves, for joining me in a letter earlier this year to the Biden administration to say, please, in your budget, fully utilize these funds. And I am hopeful that we will see that reflected in the near future. It also gave some recognition to the inland waterways, which were also mentioned by the ranking member.

I visited some that were in Conor Lamb's district that actually were built in the 19th century, the end of the 19th century. We had some great engineers back then, but these things have a life limit, and we are losing and have potential to lose critical inland navigation of the most efficient way to move freight, which is on water. We have got to maintain this fabulous system that we inherited from the very early days, actually, of the Republic.

Also, we gave the Corps some new direction that they build and rebuild a resilience to climate-change effects. That will be sea level rise, severe weather events, and other issues that we know are going to arise with more frequency over the coming years, and also that the needs of economically disadvantaged, minority, rural, and Tribal communities are better addressed.

There are times where the Corps has not recognized Tribes as sovereign nations with whom they have to have meaningful dialogue before moving forward with projects which impact them.

It also directs the Corps, finally, to implement changes to planning guidance that Congress established in 2007—that's 14 years. I think we can get that done. The changes in principles we put in will maximize sustainable development, protect and restore the functions of natural systems, and affordably address the needs of

economically disadvantaged, rural, small, and Tribal communities, and it fully integrates resiliency into the Corps' planning and design process to help our communities meet the future challenges of changing hydrologic conditions, and repetitive and more frequent flooding events.

The 2020 bill also assured that all communities, especially communities with socioeconomic challenges, have a path forward in getting the tools they need for flood protection and ecosystem restoration. And it finally directs the Corps to update its policies related to environmental justice and ensure water resources development projects can help to ameliorate disproportionate and adverse health and environmental impacts on low-income and minority communities and Indian Tribes.

So Madam Chair, I thank you for holding this hearing today, and kicking off what I fully expect to be the fifth consecutive successful bipartisan reauthorization of water resources, and who knows, maybe even the Senate will be able to pass it this time without having to put it into a yearend budget deal.

And I also, if you would just give me license, I just want to say that it is good to see our first witness here today, Matt Strickler. Matt was a key member of my staff when I was the ranking member on the Natural Resources Committee a number of years ago, and I congratulate him on the position he has adopted, and look forward to his testimony.

[Mr. DeFazio's prepared statement follows:]

Prepared Statement of Hon. Peter A. DeFazio, a Representative in Congress from the State of Oregon, and Chair, Committee on Transportation and Infrastructure

Thank you, Madam Chair.

In many ways, the Water Resources Development Act (WRDA) for 2020 was ground-breaking in providing direction to the U.S. Army Corps of Engineers for carrying out critical navigation, flood damage reduction, and environmental restoration projects.

First, the bill continued the tradition restarted by former Chair Bill Shuster of moving a new, bipartisan WRDA each Congress—representing the fourth consecutive WRDA since 2014.

That would not have been possible without the partnership of Ranking Member Sam Graves, Subcommittee Chair Grace Napolitano, and former Subcommittee Ranking Member Bruce Westerman, who worked hard in developing this critical legislation—and knowing the new Subcommittee Ranking Member, David Rouzer, I feel confident that this Congress we will enact the fifth WRDA in a row.

WRDA 2020 also successfully authorized the construction of all 46 pending Reports of the Chief of Engineers that were studied and transmitted to Congress since the last WRDA was signed into law. This was a record number of Chief's Reports, almost matching the number of authorized projects in WRDA 2016 and 2018 combined.

Regular enactment of WRDAs send a signal of predictability to the Corps and to non-federal sponsors that Congress can and will, on a bipartisan basis, authorize water resources development projects in a transparent and efficient manner—and hopefully address local water resources challenges.

But what sets WRDA 2020 apart from other recently enacted WRDAs is the significant policy reforms that were included in the bill—and in my mind, none was more important than one I have worked to enact for nearly two decades on the Harbor Maintenance Trust Fund.

WRDA 2020 finally ensures the full utilization of the Harbor Maintenance Trust Fund by unlocking critical funds collected from shippers for harbor maintenance that have sat idle in the Trust Fund for decades.

The Corps has already informed the Committee that it has the capability to obligate the \$2 billion in critical maintenance dredging funds authorized in WRDA for the coming fiscal year.

In addition, over the next decade, WRDA 2020 authorizes continually increasing amounts of annual maintenance funding to a point where we should not only spend down the estimated accrued \$10 billion balance currently in the Trust Fund, but also address the complete backlog of maintenance dredging projects, for all sizes of ports, within the next few years.

Ensuring that the funds collected for harbor maintenance are used to maintain the safety and reliability of our nation's ports is just common sense. And, again, I want to thank Ranking Member Graves for joining me in a letter earlier this year urging the Biden administration to make sure these funds are utilized.

WRDA 2020 also recognizes the important role that the inland waterways play in our nation and provides a cost share shift to help in completing construction of much needed inland projects for 10 years.

The bill will also be remembered as providing the strongest direction yet to the Corps on ensuring that future water resources development projects are both resilient to the challenges posed by climate change, as well as reflect the needs of economically-disadvantaged, minority, rural, and tribal communities.

For example, this legislation directs the Corps to finally implement changes to its planning guidance that Congress established in 2007.

These critical revisions to the Water Resources Principles, Requirements, and Standards will ensure that future Corps' projects will maximize sustainable development, will protect and restore the functions of natural systems, and affordably address the needs of economically-disadvantaged, rural, small, and tribal communities.

In addition, WRDA 2020 further integrates resiliency into the Corps planning and design process, helping communities meet the current and future challenges of changing hydrologic conditions and repetitive and more frequent flooding events.

Thanks to WRDA 2020, taxpayer dollars will be focused on robust infrastructure that will contribute to the resiliency of communities across the country, and where appropriate, utilize natural and nature-based features for providing long term, flooding and storm damage risk reduction.

WRDA 2020 also ensures that all communities, especially communities with socio-economic challenges, have a path forward in getting the tools they need for flood protection and ecosystem restoration.

And this legislation, finally, directs the Corps to update its policies related to environmental justice to ensure that water resources development projects help to ameliorate disproportionate and adverse health and environmental impacts on low-income and minority communities and Indian tribes.

Madam Chair, the Water Resources Development Act is essential to communities throughout the country that depend on the efficient, safe, and affordable use of ports, harbors and inland waterways.

Our economy, our safety, and our environment will benefit from quick and thorough implementation of the policy reforms in WRDA 2020.

I am proud of our work on this bill, and I urge the Biden administration and the Corps to quickly implement the critical reforms included in this transformational WRDA.

Mr. DEFAZIO. With that, I yield back the balance of my time.

Mrs. NAPOLITANO. Thank you, Mr. DeFazio, and I couldn't agree with you more.

We will proceed to hear from our witnesses who will testify with us today. Thank you for being here and welcome.

On today's panel we have Matthew Strickler; the chair of the full committee just introduced him. Mr. Strickler is secretary of natural resources for the Commonwealth of Virginia.

Gene Seroka, executive director of the Port of Los Angeles, California.

Mary Ann Bucci, executive director, Port of Pittsburgh Commission.

Michael Piehler, director, UNC Institute for the Environment.

Chad Berginnis, executive director, Association of State Floodplain Managers.

Without objection, your prepared statements will be entered into the record, and all witnesses are asked to limit their remarks to 5 minutes.

Secretary Strickler, it is good to see you, again, and I truly appreciate the work you did previously for Chairman Grijalva, and working with me and my staff when you were on the House Natural Resources Committee. I am glad you are here today in your current role with the State of Virginia, and you may proceed.

TESTIMONY OF MATTHEW J. STRICKLER, SECRETARY OF NATURAL RESOURCES AND CHIEF RESILIENCE OFFICER, COMMONWEALTH OF VIRGINIA; EUGENE D. SEROKA, EXECUTIVE DIRECTOR, PORT OF LOS ANGELES; MARY ANN BUCCI, EXECUTIVE DIRECTOR, PORT OF PITTSBURGH COMMISSION; MICHAEL F. PIEHLER, Ph.D., DIRECTOR, UNC INSTITUTE FOR THE ENVIRONMENT; AND CHAD BERGINNIS, C.F.M., EXECUTIVE DIRECTOR, ASSOCIATION OF STATE FLOODPLAIN MANAGERS

Mr. STRICKLER. Well, thank you, Chairwoman Napolitano, and Chairman DeFazio, for your kind words and for having me here this morning, and Ranking Member Rouzer, as well, and all the members of the subcommittee. It is good to see you. I appreciate being here to talk today on the important topic of the Water Resources Development Act of 2020.

As was mentioned, my name is Matt Strickler. I serve as secretary of natural resources and the chief resilience officer to Virginia Governor Ralph Northam.

Virginia faces massive challenges in adapting to the new reality created by climate change and sea level rise. And as we tackle these challenges, the provisions of WRDA 2020 and increased Federal engagement will be crucial.

When our special assistant for coastal adaptation and protection, retired U.S. Navy Admiral Ann Phillips, testified before this subcommittee in November 2019, she detailed the specific threats to Virginia's coastal communities, and I refer you to her statement from that hearing, as well as my longer written testimony that I have submitted today for that background.

Admiral Phillips also outlined Governor Northam's executive actions to create a comprehensive framework for coastal planning in Virginia, and to institute the country's strongest flood risk management standard. Since then, we have developed and released the Virginia Coastal Resilience Master Planning Framework and are on track to complete our first project-driven master plan by this fall.

We have also joined RGGI, the Regional Greenhouse Gas Initiative, and are dedicating nearly half of the proceeds from carbon allowances to our Community Flood Preparedness Fund, for fighting both coastal and inland flooding. These are big steps, but even the most proactive States can't fight this battle on their own.

Virginia will need the assistance of the Federal Government and U.S. Army Corps of Engineers, specifically. Through the development of our Master Planning Framework, Virginia has advanced five key principles for adaptation and resilience. And while they are included in a coastal plan, these principles are largely applica-

ble to river and flood plains as well. They also align with many of the reforms this committee developed in WRDA 2020.

First, Virginia is committed to acknowledging climate change and its consequences and basing decisionmaking on the best available science. Steps in WRDA 2020 to ensure the Corps quantifies efforts to address sea level rise or inland flooding in cost-benefit analyses will help Virginia as it weighs which projects it should prioritize.

This will also help us understand the true effectiveness of different approaches, as well as the costs and risks associated with incompatible development.

As Virginia works to identify and address socioeconomic inequality and enhance equity through adaptation, several provisions of WRDA 2020 will be useful. Directing the Corps to prioritize planning assistance to economically disadvantaged communities, and to communities subject to repetitive flooding, will help those that have traditionally lacked adequate resources. Updates to the Corps environmental justice policies to ensure that future projects promote meaningful involvement with minority communities, low-income communities, and federally recognized Indian Tribes, also support Virginia's initiatives.

Virginia is committed to protecting and enhancing green infrastructure, like natural coastal barriers, and fish and wildlife habitat, by prioritizing natural and nature-based solutions. This, too, aligns with provisions of WRDA 2020. Supporting natural and nature-based projects by ensuring these alternatives are fully evaluated in any flood-risk reduction feasibility study carried out by the Corps is critically important.

Similarly, since Virginia will utilize community and regional scale planning to the maximum extent possible, authorizing the Corps to study, design, and construct water resources projects for communities that have been subjected to repetitive flooding events and those that are receiving emergency flood assistance, will be helpful in directing resources to areas of need and to providing community scale planning.

Finally, we need to understand the fiscal realities and focus on the most cost-effective solutions for protection and adaptation. Provisions of WRDA 2020 that require the Corps to assess and update the economic and environmental impacts of antiquated projects before they may be carried out is important, and will put Virginia on a more level playing field with other States as we all grapple with emerging climate risks.

The policy changes from WRDA 2020 will help Virginia's flood preparedness efforts. While these changes are in the early stages of implementation, they represent major shifts in the Corps' approach that are necessary as to begin the daunting task of adapting to a rapidly changing climate. While this hearing is focused on implementation, we hope the subcommittee will consider changes in future water resources bills that will allow for more than 10 Corps flood risk management studies per year, remove the \$3 million cap on such studies, and include Federal property in the studies. This would allow the Corps to play a larger and more effective role in State-level flood control and master planning efforts.

Further, we would urge the Corps and the subcommittee to reconsider the sea level rise projections being used to engineer and evaluate projects. The Corps' intermediate curve underestimates sea level rise in Norfolk, Virginia, for example, by more than 2 feet in 2060, when compared to the NOAA intermediate high curve adopted independently by both the Commonwealth and the Hampton Roads Planning District Commission.

I thank you for your consideration, and look forward to answering your questions today.

[Mr. Strickler's prepared statement follows:]

Prepared Statement of Matthew J. Strickler, Secretary of Natural Resources and Chief Resilience Officer, Commonwealth of Virginia

Chairman Napolitano, Ranking Member Rouzer and Members of the Subcommittee, thank you for inviting me to testify today.

My name is Matt Strickler, and I serve as Secretary of Natural Resources to Virginia Governor Ralph Northam. In that capacity I oversee five state agencies, each of which partners with the U.S. Army Corps of Engineers in various capacities to protect and preserve natural and cultural resources.

I also serve as the Commonwealth's designated Chief Resilience Officer (CRO), the primary coordinator of resilience and adaptation initiatives in Virginia, with a focus on addressing the consequences of climate change—including recurrent flooding.

In both roles, I advance Governor Northam's agenda, which includes fighting climate change and related impacts, ensuring that no community is left behind in our adaptation and protection efforts because of socioeconomic disparities, and letting sound science drive decision making.

As Virginia continues its proactive approach to these issues, the provisions of the Water Resources Development Act of 2020 (WRDA 2020) and increased federal engagement can provide significant assistance. I am glad to testify before you today on that topic.

Please accept this testimony on the challenges Virginia faces with regard to climate adaptation, recurrent flooding, potential impacts of extreme weather and protection of lives, private property, and public infrastructure—including critically important green infrastructure.

VIRGINIA'S CLIMATE RISK—COASTAL

Virginia's coastal region covers 8,950 square miles, or approximately one quarter of the state and has more than 10,000 miles of tidally influenced shoreline.^{1,2} The coastal plain extends from the Atlantic Ocean and Chesapeake Bay to the fall line, which runs approximately along Interstate 95 and marks the beginning of the Piedmont and the end of tidal influence in Virginia rivers.

Recent estimates show that 250,000 acres of land, 1,469 miles of roads, and property valued at \$17.4 billion lie less than five feet above the high tide line in Virginia. Within nine feet of high tide, these figures jump to 490,000 acres, 4,500 road miles, and \$54.8 billion.³ A changing climate puts all of this at tremendous risk.

Coastal Virginia has some of the highest relative sea level rise rates in the United States due to the combined effects of sea level rising and land subsiding.⁴ Using the National Oceanic and Atmospheric Administration's (NOAA) Sewell's Point tide

¹MR Berman et al., "Virginia—Shoreline Inventory Report: Methods and Guidelines, SRAMSOE No. 450." (Comprehensive Coastal Inventory Program, Virginia Institute of Marine Science, 2016).

²"State of the Coast: A Report for the Governor's Coastal Climate Resiliency Plan" (Center for Coastal Resources Management, June 2019).

³Ben Strauss, Claudia Tebaldi, and Scott Kulp, "Virginia and the Surging Sea: A Vulnerability Assessment with Projections for Sea Level Rise and Coastal Flood Risk" (Princeton, NJ: Climate Central, September 2014), <https://sealevel.climatecentral.org/uploads/ssrf/VA-Report.pdf>.

⁴Christopher G. Piecuch, "Origin of Spatial Variation in US East Coast Sea-Level Trends during 1900–2017," *Nature*, 2018.

gauge in Norfolk as the primary tidal data reference, Virginia has experienced more than 18 inches of relative sea level rise in the past 100 years.⁵

Multiple studies, including those from the United Nations Intergovernmental Panel on Climate Change (IPCC), the National Climate Assessment, and NOAA Technical Report: Global and Regional Sea Level Rise Scenarios for the United States, report that sea level will continue to rise at an accelerating rate. The NOAA 2017 Relative Sea Level Change Scenarios for Sewell's Point (Fig. 1) predict as much as 6.69 feet of relative sea level rise by 2100 based on the Intermediate High Scenario.

Recurrent flooding in the Hampton Roads region of Virginia increased from 1.7 days of flooding per year in 1960 to 7.3 days per year in 2014.⁶ Estimates project the influences of wind and coastal storms could increase this number to 200 per year by 2049.⁷ Coastal Virginia is also vulnerable to flooding due to higher water tables as the sea level rises.

The impacts of sea level rise and flooding are magnified by population density: Virginia's coastal region is home to more than 70 percent of our population.⁸ Coastal regions across the United States are seeing population increases, with the U.S. Department of Commerce estimating that 47 percent of the U.S. population lives along coastlines, putting a significant portion of the public at risk.⁹

VIRGINIA'S CLIMATE RISK—RIVERINE

Virginia also has tremendous riverine flooding risk outside of the coastal zone, home to an estimated 3.4 million Virginians. Inland flooding in the Commonwealth is characterized slightly differently than coastal flooding, although the hazard and threat to safety is equal in comparison. There are 52,232 miles of free-flowing streams and rivers within the Commonwealth. Riverine flooding occurs when rain events or rapid snowmelt add more water into a waterway than it can hold. Subsequently the water rises, overtopping the river bank, and flooding agricultural fields, roads, or populated areas.

Unchecked development, expanded impervious surfaces, poorly maintained run of river or agricultural dams and flood control infrastructure coupled with more intense rainfall events has contributed to increase inland flooding risk in Virginia, just as it has along our coast.

Virginia's non-coastal localities include 66 counties and 21 independent cities, all at risk from riverine flooding. Approximately 599,460 properties are at risk of flooding within 30 years, which is 27.3% of the total number of properties across the Commonwealth¹⁰. This part of the state also needs immediate attention to ensure long-term climate resilience.

In February 2020, southwest Virginia communities had severe flooding after experiencing heavy rain, requiring some residents to be rescued from their homes and resulting in damaged buildings and road closures.

Tides can also impact flood risk, and they're not only found along the coast. Tidal waters extend inland to places like Richmond and Fredericksburg, as well as north, like Alexandria and Arlington, just five miles from the US Capitol.

Hurricanes don't strike just coastal Virginia. In recent years, they hit much more of the state. In 2018, Hurricanes Florence and Michael tore through central and western areas of the state. During Hurricane Michael, the Dan River region alone suffered roughly \$12.9 million in damages. Floods aren't limited to mapped flood risk areas either. In fact, many of the 2,000 homes that were flooded in 2016 during Hurricane Matthew were outside the mapped floodplain. In 2018, Hurricanes Florence and Michael tore through central and western areas of the state. During Hurricane Michael, the Dan River region alone suffered roughly \$12.9 million in damages.

Flooding is a statewide issue that will require a variety of solutions as climate impacts become more severe. This is why Virginia has implemented the Virginia

⁵"Sea Level Trends—NOAA Tides & Currents. Sewell's Point VA Station.," 2019, https://tidesandcurrents.noaa.gov/sltrends/sltrends_station.shtml?id=8638610.

⁶W.V. Sweet and J Park, "From the Extreme to the Mean: Acceleration and Tipping Points of Coastal Inundation from Sea Level Rise.," *Earth's Future* 2, no. 12 (2014): 579–600, <https://doi.org/10.1002/2014EF000272>.

⁷A. G. Burgos et al., "Future Nuisance Flooding in Norfolk, VA, From Astronomical Tides and Annual to Decadal Internal Climate Variability," *Geophysical Research Letters* 45, no. 22 (November 28, 2018): 12,432–12,439, <https://doi.org/10.1029/2018GL079572>.

⁸Annual Estimates of the Resident Population for Counties in Virginia: April 1, 2010 to July 1, 2019 (CO-EST2019-ANNRES-51) Source: U.S. Census Bureau, Population Division. Release Date: March 2020

⁹"National Coastal Population Report: Population Trends from 1970 to 2020." (U.S. Department of Commerce, NOAA's Office of Coastal Management, 2018).

¹⁰(https://floodfactor.com/state/Virginia/51_fsid)

Flood Risk management Standard (The VFRMS). The VFRMS is the strongest flooding elevation standard in the nation, setting a minimum first floor elevation, or freeboard, above the projected base-flood height. In addition to the VFRMS, Governor Northam issued Executive Order 45 which says that, State-owned buildings are not allowed to be constructed within flood-prone areas without a variance. While the VFRMS sets a freeboard standard for these areas, the Commonwealth will avoid building in natural floodplains and flood-prone areas whenever possible.

Virginia faces a serious threat to public safety and economic viability from the various impacts of climate change. Storm surge from tropical storms and hurricanes, sea level rise, nuisance flooding, riverine flooding, altered hydrology, and their impacts on poorly planned development are just some of the issues we must address to ensure a resilient, thriving Virginia for generations to come. Virginia is taking immediate action to solve this problem. We are counting on the federal government and the U.S. Army Corps of Engineers to assist us.

TAKING ACTION

From its first cities to its fishing and farming communities, coastal Virginia faces massive challenges in adapting to the new reality created by climate change and sea level rise. We know this because of decades of observation and scientific research, and from modeling that shows what we can expect in the future. We also know the following:

- These challenges differ by region, locality, neighborhood, and individual, as does capacity to address them.
- Current federal, state, regional, and local efforts are insufficient to achieve a resilient coast, and are not aligned.
- In most cases, more work is necessary to identify the suite of possible solutions to specific problems posed by coastal hazards.
- There is not, nor will there ever be, enough funding to protect all homes, businesses, infrastructure, and other coastal assets where they currently exist.
- Low-income and minority communities are particularly vulnerable due to a number of factors.

Recognizing the adaptation challenges coastal Virginia faces, Governor Northam signed Executive Order Number Twenty-Four (EO-24), Increasing Virginia’s Resilience to Sea Level Rise and Natural Hazards, on November 2, 2018. Section 2A of EO-24 states that “The Commonwealth of Virginia has a responsibility to assist local governments in reducing flood risk through planning and implementing large scale flood protection and adaptation initiatives.” It also requires that “The Chief Resilience Officer, with the assistance of the Special Assistant to the Governor for Coastal Adaptation and Protection, shall create and implement a Coastal Resilience Master Plan for coastal Virginia to reduce the impacts of tidal and storm surge flooding.”

In October 2020, Governor Northam released the Virginia Coastal Master Planning Framework. This Framework is the result of a nearly two-year process initiated by the Governor in EO-24, involving state agencies, key stakeholders, and local and regional partners to develop mitigation strategies that will reduce the near-term and long-term impacts of natural hazards and extreme weather. This document is a roadmap that puts the full strength of the Commonwealth into creating a comprehensive Coastal Resilience Master Plan that will protect communities, commerce, and the coastal environment. The approach recognizes the scientific and fiscal realities—and challenges—that underserved communities in both urban and rural areas are facing, and emphasizes local and regional efforts to combat flooding and protect people and assets. The goal of the Master Planning exercise is to have a completed, project oriented Coastal Master Plan by the end of 2021.

To reduce climate pollution, the Commonwealth of Virginia became the first southern state to join the Regional Greenhouse Gas Initiative (RGGI), a market-based collaborative effort among Northeast and Mid-Atlantic states to combat climate change and reduce greenhouse gas emissions from the power sector, while driving economic growth.

Legislation passed during the 2020 General Assembly session will permit Virginia to use 45 percent of the proceeds generated from the auction for community flood preparedness and coastal resilience, while the remainder of funds will be directed towards energy efficiency programs¹¹.

The RGGI proceeds directed towards resilience will fund project implementation, planning, research, and monitoring via the Community Flood Preparedness Fund

¹¹[Editor’s note: the witness’ testimony did not list a footnote for reference 11.]

Administered by the Virginia Department of Conservation and Recreation (DCR). DCR is also responsible for dam safety and floodplain management in Virginia.

RESILIENCE PLANNING, FEDERAL ASSISTANCE AND THE ARMY CORPS

Virginia provides an interesting case study with regard to the state-federal partnership on disaster planning. Virginia has tremendous risk and is already being impacted by the effects of climate change and sea level rise, yet Virginia is far behind other states in disaster planning and federal aid to do so. This is due to several factors:

- Virginia has no designated federal funding source for flood preparedness or climate adaptation.
- Virginia has not had a major disaster in recent years, and therefore does not have significant post-disaster funding with which to prepare for future conditions.
- Virginia does not have a set of Army Corps flood control projects to provide the tentpoles for a coastal master plan.
- It is unclear how ongoing Army Corps feasibility studies for flood control projects in Virginia will inform our master planning effort or provide direction for proactive adaptation consonant with Virginia's goals of using natural and nature-based solutions at a community scale to benefit all communities regardless of socioeconomic standing.

As such, Virginia's experience is likely to be similar to many coastal states that are moving quickly to enhance their resilience efforts. Unlike states like Louisiana, Texas or New Jersey, Virginia has been given little support or direction from the federal government with regard to long term climate adaptation planning. In part due to lack of federal leadership under the prior administration, and in part because of the relative newness of the threat, Virginia is charting its own course and starting from scratch.

This has meant that in Virginia, localities and regions often are left to create their own plans. Some communities fare well, while others are left behind, and plans that do not take a broad view of impacts to neighboring jurisdictions and state and federal trust resources can have unintended negative consequences. This is why this type of planning must be done at the state and federal level, and the Corps must play a major role in helping to coordinate efforts and initiate feasibility studies and projects that protect our communities from flood hazards.

Nonetheless, we are hopeful those dynamics are changing. President Biden has taken bold and decisive action to reduce U.S. carbon emissions, and to reposition the United States as a global leader in the fight against climate change. These steps are welcome, necessary, and long overdue, and the impressive climate team the President is assembling inspires confidence that there is much more to come.

Recent actions by the U.S. Congress will continue to bolster our efforts. In the case of this committee, the reforms of WRDA 2020 align with our priorities for resilience planning and we are confident that full implementation of these reforms will help states like Virginia catch up in the race to adapt to a warming climate and rising seas.

VIRGINIA'S COASTAL RESILIENCE MASTER PLAN AND WRDA 2020

The purpose of the Coastal Resilience Master Plan (Master Plan) will be to reduce risk to people and property by anticipating and preparing for sea level rise and coastal flooding, while ensuring equitable treatment for all communities, and protecting the coastal environment.

Understanding that significant changes are inevitable, the Master Plan will identify coastal adaptation and protection strategies and projects that keep coastal Virginia's communities, economy, and environment vibrant. Achieving this will require strengthening relevant laws and policies, leveraging funding opportunities, and coordinating resilience activities across local, state and federal programs.

WRDA 2020 took steps to expand the ability of the Corps to provide local governments with direct resilience planning assistance (at no cost to the local government through the Corps' Flood Plain Management Services) to avoid repetitive flooding impacts, to prepare and adapt to climate change and extreme weather events, and to quickly recover from flooding events. Virginia hopes that this new program will help communities across the state create local resilience plans, as communities will be required to create plans before receiving project grants for the aforementioned Community Flood Preparedness Fund.

The Norfolk Division of the Corps is an active and valuable participant in the Master Plan Technical Advisory Committee (TAC) and through that venue we hope to connect them with communities in need of planning assistance.

Additional reforms from WRDA 2020 and ways their implementation will be of benefit are best understood through the lens of the five goals of Virginia's Coastal Master Plan:

Master Plan Goal 1: Acknowledge climate change and its consequences and base decision-making on the best available science.

Before Governor Northam took office, Virginia slowly advanced efforts to study and mitigate coastal flooding without stating unequivocally that climate change is the root cause of the problem. This approach, born of political necessity, hampered honest dialogue and broader understanding of the challenges we face.

Developing resilience in Virginia's coastal localities requires understanding that the challenges are long-term, continually evolving, and varied. In order to be comprehensive and effective, our coastal adaptation and protection efforts must incorporate climate science. Decision making with regard to state and regional approaches, as well as specific projects, must be based on the best available information and relevant science. Through the Master Plan, the Commonwealth will adopt this approach, and will require the same of localities.

Steps in WRDA 2020 to ensure the Corps will accurately assess and quantify efforts to address potential sea level rise or inland flooding when doing costs & benefit analyses for future water resources projects will provide helpful as Virginia weighs which projects it should prioritize for federal funding requests and in the Master Plan prioritization. It will also help elected officials better understand the true costs and risks associated with climate change adaptation. This includes understanding the potential negative impacts of traditional grey infrastructure and the additional benefits of nature-based infrastructure.

Master Plan Goal 2: Identify and address socioeconomic inequities and work to enhance equity through coastal adaptation and protection efforts.

Across the globe and throughout history, racial and ethnic minorities and economically disadvantaged groups have been forced to inhabit the most marginal lands. In coastal areas, this often means lands most susceptible to flooding. The United States saw the acute consequences of this inequity clearly during and after major coastal disasters like Hurricane Katrina in 2005, Superstorm Sandy in 2012, and Hurricane Harvey in 2017. Chronic flooding is also an increasing problem for Alaska Native villages and communities like Louisiana's Isle de Jean Charles Tribe, that are becoming some of the world's first climate refugees.^{12 13}

Similar issues exist in Virginia. We have coastal cities with significant African American populations, economically stressed rural coastal areas, and Native American communities with at-risk reservations and ancestral tribal lands. While discrete initiatives like the Ohio Creek Watershed Project in Norfolk are making headway in addressing inequity in coastal resilience, we must do more as we consider adaptation and protection strategies across the entire coastal zone. Governor Northam has created the Virginia Council on Environmental Justice, hired the nation's first state level Diversity, Equity and Inclusion Officer and taken additional steps to ensure that no Community is left behind when planning for rising waters and environmental protection.

The Master Plan will promote coastal resilience strategies and projects that specifically address racial and economic inequities. We have the information necessary to identify the location of affected communities and the risks they face. We will work with these communities to plan, implement, and support successful and lasting adaptation and protection strategies. We must begin now to develop these strategies, which in some cases will include relocation from places that are or will become uninhabitable.

There are several provisions of WRDA 2020 that could provide useful in this effort. Directing the Corps to prioritize planning assistance to economically disadvantaged communities and communities subject to repetitive flooding events will help those communities that have thus far lacked the resources to plan for this emerging threat. Virginia's Community Flood Preparedness Fund will also

¹²"Our Land and Water: A Regional Approach to Adaptation" (LA Safe: Louisiana's Strategic Adaptation for Future Environments, April 2019), <https://s3.amazonaws.com/lasafe/Final+Adaptation+Strategies/Regional+Adaptation+Strategy.pdf>.

¹³Josh Haner, "Carbon's Casualties: Resettling the First American 'Climate Refugees,'" *The New York Times*, October 26, 2016, sec. World, <https://www.nytimes.com/interactive/2020/admin/10000004731523.embedded.html?>

seek to assist these communities by ensuring that 25% of funds are directed to low income communities.

Requiring the Corps update its environmental justice policies, regulations, and guidance to ensure that future water resources development projects promote the meaningful involvement of minority communities, low-income communities, and federally-recognized Indian Tribes is also in concert with state initiatives.

Master Plan Goal 3: Recognize the importance of protecting and enhancing green infrastructure like natural coastal barriers and fish and wildlife habitat by prioritizing nature-based solutions.

The bounty and beauty of coastal Virginia's lands and waters have made the area an economic hub and a desirable place to live for thousands of years. While commerce has diversified from exclusively resource-based and agrarian pursuits, fishing, farming, forestry, and shellfish propagation still support many livelihoods and are a significant component of coastal Virginia's cultural identity. These occupations are also heavily dependent on environmental conditions and the integrity of coastal landscapes and ecosystems.

Further, science shows us that protecting and enhancing natural coastal areas is critical not only to support continued production of renewable resources, but also to protect other key components of our economy and communities. Barrier islands, beaches, dunes, wetlands, coastal forests, and even oyster reefs and seagrass beds offer significant and quantifiable resilience benefits at a significantly lower cost than shoreline hardening. These natural features also provide the additional benefits of protecting water quality and habitat for fish and wildlife. The Master Plan will support the mutually reinforcing goals of coastal resilience and environmental protection by prioritizing the protection and enhancement of green infrastructure and the use of natural and nature-based solutions where effective.

This too aligns with the provision of WRDA 2020. Reaffirming the commitment to greater use of natural and nature-based projects by ensuring natural and nature-based alternatives are fully evaluated in any flood or storm risk-reduction feasibility study carried out by Corps is important and will provide helpful when Virginia seeks Corps projects to further the Master Plan.

We are also pleased that WRDA 2020 directed the Secretary of the Army for Civil Works to issue final agency procedures for its Principles, Requirements, and Guidelines (PR&G). The PR&G will ensure that future water resources development projects maximize sustainable development, protect and restore the functions of natural systems, and fully-evaluate environmental, economic, and societal goals, in addition to addressing environmental justice concerns and ensuring meaningful participation of locally-affected communities.

Master Plan Goal 4: Utilize community and regional scale planning to the maximum extent possible, seeking region-specific approaches tailored to the needs of individual communities.

The Master Plan will recognize that while each region, locality, and community in coastal Virginia has unique characteristics, they face many similar challenges from sea level rise and other coastal hazards. A piecemeal approach to coastal resilience creates duplication of effort, zero-sum competition for limited resources, unintended negative consequences, and loss of opportunities to accomplish at scale what cannot be done by individual localities. Effective resilience planning requires collaboration, coordination, and communication at all levels of government, and across physical and administrative boundaries.

The Commonwealth has a responsibility through the Master Plan to enhance resilience efficiently by prioritizing and coordinating activities among local, regional, state, and federal partners, and by seeking and leveraging funding opportunities to implement strategic coastal adaptation and protection solutions. In order to accomplish this, we will develop the Master Plan at regional scales, building on local and regional planning efforts. We will encourage creativity and collaboration to find solutions to local problems that fit the Commonwealth's broader view of resilience, while discouraging activities that have unintended negative consequences locally, for other communities, or for the environment.

Authorizing the Corps to study, design, and construct water resources projects for communities that have been subjected to repetitive flooding events and have received emergency flood assistance will be helpful in directing resources to areas of need and to providing community scale planning. This, combined with the previously mentioned reforms from WRDA 2020 will help ensure that authorized projects use natural features and protect entire communities, rather than just individual structures.

This authority will also help repetitive loss communities, especially those in economically disadvantaged areas, obtain critical flood protection, tailored to benefit their community and reduce relative risk.

Master Plan Goal 5: Understand fiscal realities and focus on the most cost-effective solutions for protection and adaptation of our communities, businesses, and critical infrastructure.

We must recognize that protecting every component of the built environment exactly where it stands today is not realistic. Science shows clearly that, even if aggressive reduction targets for greenhouse gas emissions are met, response times in the natural system will result in rising global temperatures and sea levels for many decades to come.¹⁴ In time, some homes, businesses, roads, and communities will become uninhabitable as sea level rises. This includes not only the underserved communities mentioned above, but wealthier communities as well. The nature of Virginia's coastal zone means structural solutions will not be practical for much of the area. Fiscal reality means we will never have adequate resources to armor and/or elevate large sections of our coastline. Further, doing so is undesirable because it would fundamentally alter and degrade the Chesapeake Bay and the ecosystems that support coastal Virginia's economy and define its culture.

Acknowledging these realities, the Master Plan will prioritize use of natural and nature-based features to protect infrastructure that is critical for national security, public health and safety, and the economy. Using the best scientific and economic information available, the Master Plan will promote structural protective measures only when the science shows that green infrastructure will not offer sufficient protection, and that relocation is not possible.

We have the knowledge and tools to identify which areas are most vulnerable, and which adaptation and protection approaches are most appropriate. We will use this information to engage and align as many existing local, state, and federal programs as possible to support development of a detailed Master Plan that is consistent with these guiding principles.

There are many facets to this goal. To understand fiscal realities of the Army Corps, one must look at the backlog of unfunded projects and recognize that many of those projects no longer support the resilience goals of state and federal governments. Provision of WRDA 2020 that require the Corps to assess and update the economic and environmental impacts of antiquated projects before they may be carried out is important and will put a state like Virginia on a more level playing field with other states as we all grapple with emerging climate risks.

In addition, these increasing risks will require the need for more projects and feasibility studies. A rising tide waits for no one, and certainly our cities and counties cannot wait while the Corps limits the number of studies to 10 per year, and limits spending on studies to \$3 million. This subcommittee should consider allowing for changes in these limits with regard to state-level flood control and master planning efforts.

ADDITIONAL RECOMMENDATIONS

The various policy changes from WRDA 2020 previously mentioned are all important insofar as they represent directional shifts in the Army Corps' approach, and how the federal government evaluates and implements water resource projects. These changes are in the nascent stages of rollout and implementation, and we hope that they will be of great benefit to Virginia and other states as we begin the daunting task of adapting to a rapidly changing climate and increasing risk from natural disasters and extreme weather.

Going forward, Congress must continue to push the Army Corps to modernize and to expand. States and local governments need more assistance for adaptation and mitigation planning generally. Specifically, we need the Corps to do more. We need more studies, more engagement, more solutions. Many states, like Virginia, will seek to implement programs that rely on natural and nature-based infrastructure, are community-wide and protect all types of communities, leaving none behind.

There is still much work to be done. States like Virginia are stepping up to do their part, and we appreciate and value the assistance we receive from the U.S. Congress and the Army Corps. We appreciate the subcommittee's interest in con-

¹⁴K Hayhoe et al., "Climate Models, Scenarios and Projections." In: *Climate Science Special Report: Fourth National Climate Assessment, Volume I*, 2017 [Wuebbles, D.J., D.W. Fahey, K.A. Hibbard, D.J. Dokken, B.C. Stewart, and T.K. Maycock (eds.)]. U.S. Global Change Research Program, Washington, DC, USA, pp. 133–160, <https://doi.org/10.7930/J0WH2N54>.

tinuing to pursue policies and reforms like these, which will be critical if states are able to meet the flooding and resilience challenges that we face.

Mrs. NAPOLITANO. Thank you very much, Mr. Strickler.

And now we proceed to Mr. Seroka. It is good to see you and thank you for being here today and for representing the Port of Los Angeles, as well as hundreds of other ports in the Nation. Thank you for your advocacy for many years on harbor maintenance issues that are very important to the Nation, and thank you for your recent work guiding the port through the challenges of COVID on our port economy, public health, and national economy.

You may proceed.

Mr. SEROKA. Thank you, and good morning, Chair DeFazio, Chairwoman Napolitano, Ranking Member Rouzer, members of the House Subcommittee on Water Resources and Environment, and other distinguished Members of Congress. Before I begin, I would like to take this opportunity to congratulate you, Chairman DeFazio, for your recent recognition as port person of the year by the American Association of Port Authorities. As well, congratulations to you, Chairwoman Napolitano, for receiving the U.S. Army Corps of Engineers Gold de Fleury Medal for your support of U.S. Army Corps projects.

The passage of the Water Resources Development Act of 2020 stands as a memorial for both your courage and boldness in pursuing reforms that are beneficial for ports and harbors across the United States. Thank you for this opportunity to testify this morning.

My name is Eugene D. Seroka, and I am the executive director at the Port of Los Angeles. I also concurrently serve as president of the California Association of Port Authorities, and as board member of the American Association of Port Authorities.

The Port of Los Angeles is the Nation's largest and busiest container port. The cargo that traverses our port reaches each and every one of our 435 congressional districts. This truly is a conversation of national significance. In 2020, we managed more than 9.2 million container units, which generated over \$275 billion in economic impact, and nearly 1.6 million jobs nationwide.

On average, the Port of Los Angeles accounts for over \$200 million per year in receipts that go into the Harbor Maintenance Trust Fund. We are grateful for the work that your staff and you have done to open the use of the HMTF through the recent passage of WRDA 2020.

This landmark legislation included reforms we, and the broader port community, have sought for the last 10 years, including full use of HMTF revenues, a fair and equitable allocation framework, and expanded uses. Full use of annual revenues in the unspent fund balance will increase funding and accessibility for all types of ports across the country at a time when we need to invest in the competitiveness of our Nation's ports.

A fair and equitable allocation framework ensures that every port region of the country, including traditional dredge ports, emerging harbors, and donor ports alike, will receive a fair share of the HMTF expenditure each year.

WRDA's 2020 expanded uses definition enables ports like ours to address urgent maintenance needs. While we do not require fre-

quent dredging, the new eligible uses will allow us to address \$300 to \$500 million worth of in-water maintenance projects over the next 10 years, including wharf repairs, replacement of berthing structures, and the all-important seismic upgrades.

These reforms have an impact, and it is imperative that Congress and Federal agencies take additional steps. First, I urge Congress to implement the HMTF budget cap adjustment initially included in the CARES Act, and expanded in WRDA 2020. This will give the Army Corps of Engineers the full prior year's HMTF revenues, and the scheduled amounts of unspent collections.

Second, as you develop spending plans for the next year, I urge you to implement WRDA's HMTF distribution approach. This would minimize any disruption to planned maintenance repairs and projects across the country. And third, with respect to donor ports, the new funding distribution mechanism for HMTF collections should model the system in place for section 2106. The protocol that we use with the Corps works well, and using an existing model can help avoid unintended consequences that may delay funding disbursements.

Once again, thank you for the opportunity to testify on the importance of WRDA implementation. The port industry represented by AAPA stands unified in support.

With that, I will conclude my testimony, and I would be happy to entertain any questions from the subcommittee.

[Mr. Seroka's prepared statement follows:]

Prepared Statement of Eugene D. Seroka, Executive Director, Port of Los Angeles

INTRODUCTION

Chairwoman Napolitano, Ranking Member Rouzer, Members of the House Subcommittee on Water Resources and Environment, and other distinguished Members of Congress, thank you for your ongoing leadership and commitment to enacting reforms to Harbor Maintenance Trust Fund (HMTF) expenditures in the Water Resources Development Act (WRDA) of 2020. Your continued support sends an important message that maintaining our Nation's ports, harbors, and waterway infrastructure is a high priority.

WRDA 2020 represents landmark legislation that unlocks over \$9.3 billion in unspent HMTF revenues, establishes a fair and equitable funding allocation framework, and promotes competitiveness for U.S. ports. I would also take a moment to thank the staff for their public service. Ryan Seiger and Camille Touton of the committee staff, and Joe Sheehy of Chairwoman Napolitano's personal staff, were instrumental in addressing the port industry's concerns and striking the balance required for such a legislative achievement. I realize that no bill of this size, scope, and significance gets done without very dedicated staff and I hope they know how much they are appreciated. I understand Ms. Touton has moved to the administration and we look forward to working with Alexa Williams in her new role on the committee staff.

Thank you for inviting me to testify today on the implementation of WRDA 2020. I am Eugene D. Seroka, Executive Director of the Port of Los Angeles. With more than 33 years of experience in the maritime shipping industry, the last seven as a port executive director, I have first-hand knowledge of the maintenance needs of our Nation's ports, and I understand the port industry's desire to see the HMTF better serve our ports. While the well-worn saying, "If you've seen one port, you've seen one port," continues to ring true, and each port will have a unique set of challenges and needs, the port community has been unified in their push to put HMTF dollars to good use. The HMTF is needed for ports to maintain their infrastructure, stay competitive, and continue to serve as economic enablers for the American economy.

THE CASE OF THE PORT OF LOS ANGELES

The reforms you included in WRDA 2020 will benefit the Port of Los Angeles—and by extension, the entire national supply chain. Together with our neighboring port in Long Beach, we constitute the San Pedro Bay Port Complex and handle nearly 40 percent of all containerized imports and 30 percent of all containerized exports for the Nation. Last year, our combined cargo volume totaled more than 17.3 million Twenty-Foot Equivalent Units (or TEUs, the standard measure of container cargo), accounting for nearly \$300 billion worth of trade. This cargo touches every one of the 435 Congressional districts across the country, connecting them with 160 countries across the globe.

Container throughput at the Port of Los Angeles alone topped 9.2 million TEUs in 2020. We estimate that this cargo supports more than 144,000 jobs (about one in 13 jobs) in the City of Los Angeles, 517,000 jobs (or one in 17 jobs) in the five-county Southern California region, and 1.6 million jobs nationally. These estimates include direct, indirect, and port-related jobs.

Our local, regional, and national impact are all enabled by our world-class infrastructure. The operational scale of the Port of Los Angeles is immense: 27 terminals, 270 berths, roughly 200,000 unique shippers, 1,654 annual ship calls, 100 daily trains, and 60,000 daily truck moves. Maintaining the infrastructure at our port is critical to maintaining our competitiveness and role as an economic engine. However, the historic defined uses of HMTF expenditure prevented the Port of Los Angeles from accessing this important funding source, even as we served as the largest single collection point for HMTF revenue among U.S. seaports. This is how we came to be known as an HMTF “donor port.” By way of example, in 2018 and 2019, the Port of Los Angeles accounted for \$224.5 million and \$206.6 million of HMTF revenue respectively but received less than 3 percent in return per year (via Section 2106 funding for limited expanded uses).

This changed with the reforms approved in WRDA 2020. For donor ports, like the Port of Los Angeles, HMTF dollars and Section 2106 funds can now be used for “expanded uses”, such as dredging of channels, in-water infrastructure improvements, berth maintenance, and building seismic resiliency. These funds will be used:

- To repair damaged concrete wharfs at our seven container terminals;
- To replace deteriorated berthing structures at our five marine oil terminals;
- To replace and seismically upgrade dry bulk terminals, our cruise ship, and ferry ship facilities; and
- For environmental remediation of legacy sites, while also maintaining the authorized depth of the entire Port of Los Angeles complex to support safe and efficient operations.

The benefits of these expanded uses will extend to the national, state, regional, and local economy supported by our Port Complex. Expanded uses for donor ports serves as one example of how the reforms included in WRDA 2020 will benefit the Nation’s ports. As referenced earlier, the entire port industry coalesced around comprehensive HMTF reform, including full use of HMTF revenues, fair and equitable allocation of funds, and expanded uses. The significance of each of these reforms is important to understand.

FULL UTILIZATION AND SPEND DOWN OF THE HMTF

Approximately \$1.7 billion is collected annually and deposited into the HMTF. Historically, these revenues are not fully expended. While the Water Resources Reform and Development Act (WRRDA) of 2014 did establish expenditure targets, which resulted in a steady increase in the percentage of HMTF annual revenues expended, full use of the HMTF revenue has remained elusive. As a result, the HMTF has a balance of approximately \$9.3 billion in collected tax revenues, with estimates it will reach \$14 billion in 10 years, according to the Congressional Budget Office.

This all changed last year. Without a doubt, 2020 will be remembered for the pandemic and unprecedented economic disruption. For the port industry, it will also be remembered as a historic, breakthrough year for HMTF reform. In March 2020, the passage of the Coronavirus Aid, Relief, and Economic Security Act—or CARES Act—was critical because it included a key provision from Chairman DeFazio’s Full Utilization of the Harbor Maintenance Trust Fund Act (H.R. 2440)—the creation of a discretionary cap adjustment up to the levels of funds deposited into the HMTF in the previous year (collections plus interest) to be used for Army Corps of Engineers operations and maintenance activities. Under the CARES Act, appropriators can only exclude the prior year’s deposits from the discretionary budget caps, or approximately \$1.7 billion.

Additionally, WRDA 2020 unlocked the unspent HMTF balance by establishing a schedule for releasing the \$9.3 billion in HMTF collections (Section 101), beginning with \$600 million for Fiscal Year 2022, and increasing by \$100 million per year, capping at \$1.5 billion per year in 2030. A distribution approach (Section 102) outlines the allocation for these funds: 15 percent for emerging harbors, 12 percent for donor and energy transfer port programs, 13 percent for Great Lakes projects, and 17 percent for strategic commercial ports.

Combined, full utilization of annual HMTF revenues and spend down of the HMTF balance will inject much needed funding into the maintenance of America's ports and harbors. Importantly, as I have testified in the past, full use of HMTF revenues is needed to create a virtuous circle wherein investment in port infrastructure supports additional growth in trade volumes which, in turn, supports more investment in our ports and harbors.

FAIR AND EQUITABLE ALLOCATION

A fair and equitable allocation framework ensures every port region of the country—including traditional dredge ports, emerging harbors, and donor ports alike—receive a fair share of HMTF expenditures each year.

I believe the donor port issue is both a fundamental issue of fairness and critical to the long-term health of the HMTF. The HMTF has its origins in the Water Resources Development Act of 1986 and was originally established as a way for users of federal channels to share in the associated costs of channel maintenance. It is directly levied on importers and domestic shippers using coastal or inland ports as a 0.125 percent ad valorem tax on the value of imported cargo (e.g., \$1.25 per \$1,000 value).¹ Funds can be used to pay for maintenance of federal channels, and certain in-water infrastructure, such as jetties, breakwaters, and groins.

Ports that handle a large volume of imports, like the Port of Los Angeles, Port of Long Beach, Port Authority of New York and New Jersey, and Northwest Seaport Alliance, account for a large portion of total HMTF revenue. The original six “donor ports”² accounted for 50 percent of the annual HMTF revenues, but have received very little of those revenues for maintenance because their corresponding needs were not captured within the defined uses of HMTF funds.

As a donor port, we are grateful that you have recognized our needs. WRRDA of 2014 directly addressed the donor issue by recognizing donor ports, allowing them a limited expansion of uses (including maintenance berth dredging), and making them eligible for additional funding (along with “energy transfer ports”) via the Section 2106 program. In WRDA 2020, we were encouraged to see a comprehensive framework established, creating minimum percentages of revenue being returned to donor, energy transfer, Great Lakes, and emerging harbors, while continuing to support traditional dredge ports.

EXPANDED USES

Until the 2020 reforms, HMTF expenditures were limited to the maintenance of the authorized depths and widths of federal navigation channels. For ports that require frequent dredging to maintain their dimensions this has been critical; however, this excludes other in-water maintenance needs. Los Angeles does not require frequent dredging, but it does have a major backlog of wharf repairs and seismic upgrades. As described earlier in my testimony, WRDA 2020's “expanded uses” assists donor ports like the Port of Los Angeles by funding the maintenance projects we need most.

KEY ISSUES FOR CONSIDERATION

The goods movement industry underpins our economy and supports our standard of living. We know that this committee is keenly aware of the need to invest in and sustain the freight infrastructure that makes our work possible. The importance of our work was on full display throughout the COVID-19 pandemic as Americans sought personal protective equipment (PPE) and essential goods.

A reliable, sustainable source of funding to support the competitiveness of our ports and harbors is essential to our recovery and long-term economic growth. Clearly, annual HMTF revenue and the HMTF balance is one such funding source. It is a unique and important revenue source that can keep our nation's ports and harbors

¹Originally, it was paid by importers and exporters; however, a 1998 Supreme Court decision exempted exporters [United States v. United States Shoe Corp., 523 U.S. 360 (1998)].

²As defined in WRRDA 2014, these included ports of LA, Long Beach, New York/New Jersey, Seattle, Tacoma, and Miami.

operating at their maximum potential. Committee members, as you and our federal agencies move forward with implementing WRDA 2020, I would like to focus on a few areas for your consideration. Specifically, there are three areas that need to be addressed for implementation of these essential reforms:

1. Congress needs to assure the HMTF budget cap adjustment initially enacted in the CARES Act and expanded in WRDA 2020 is implemented as intended—with the Army Corps of Engineers receiving the full prior years HMTF revenues and the scheduled amount of unspent tax collections. This needs to be accomplished without adversely impacting other Corps Civil Works programs. Ideally, these funds would be included in the President’s budget.
2. The HMTF distribution approach authorized in WRDA 2020 takes effect on October 1, 2022. It is imperative that Congress develop the fiscal year 2023 appropriations to include direction to implement the WRDA 2020 HMTF distribution approach. Without this directive language, I am concerned that the implementation could be delayed until fiscal year 2024, resulting in postponement of planned port maintenance repairs.
3. For donor ports, model the new funding distribution mechanism for HMTF collections after the one used in the Section 2106 program. It works. The Corps and the Port of Los Angeles have a system in place that handles disbursement of funds effectively and efficiently. Creating an entire new delivery system has the potential to burden both the Corps and recipient ports, further delaying funding disbursements.

These three requests will ensure that the decade worth of work that you, the port industry, and our other industry partners put into HMTF reform will not have been done in vain. With your continued leadership and perseverance, we will have an HMTF framework in place that will ensure we have a well-maintained maritime transportation industry. This industry is vital to the manufacturers, exporters, and farmers who count on U.S. ports to move their products to market. It supports more than \$5.4 trillion in commerce and employs more than 31 million people.

For an industry that continues to deliver for the American people, we ask that Congress and the federal government deliver a fully enacted HMTF reform package. Thank you for your consideration.

Mrs. NAPOLITANO. Thank you, Mr. Seroka.

Next, we have Ms. Mary Ann Bucci, executive director for the Port of Pittsburgh Commission.

You may proceed.

Ms. BUCCI. Madam Chair Napolitano, Ranking Member Rouzer, Chair DeFazio, and members of the subcommittee, I thank you for this opportunity to be here today to talk about WRDA 2020. I will focus on the importance of water resource development legislation, Congress’ role in continuing to build on previous successes, the need for full use of the Inland Waterways Trust Fund, the adoption of the Capital Investment Strategy, and the reinstatement of the Inland Waterways Users Board to “Build Back Better.”

America’s inland waterways system is the best in the world, but it has its challenges as international competitors continue to improve their systems and facilities. More than half the locks and dams in the U.S. inland waterways system are past their 50-year design life and require attention, financial recapitalization, and reliability to sustain the Nation’s economic well-being and standard of living.

The attention starts with reinstating the Inland Waterways Users Board. The users board provides recommendations to Congress and the Secretary of the Army on investment priorities using resources from the trust fund, which the commercial users of the inland waterways have contributed for construction and major rehab of the inland navigation investment priorities.

I strongly encourage the users board be reinstated, given that it is filled with industry leaders and subject matter experts. This re-

lationship fosters collaborative conversation between the Corps and the stakeholders and fulfills the “user pay, user say” policy.

The Lower Mon Project, which has encountered dramatic cost escalation and schedule delays, is currently funded to completion of construction in 2023. The project was authorized in 1992. However, inadequate funding forced the Corps to complete the project one component at a time, or as funding allowed. Currently, the Lower Mon Project is in its 27th year of construction, and the Lower Mon also experiences the most volume and locks on the river system.

The second project, Olmsted Locks and Dam, was authorized in 1998 at \$775 million. That project ballooned to \$3.1 billion. Thankfully, WRRDA 2014 had one significant reduction of the Inland Waterways Trust Fund, where that project alone went from 50 percent to 15 percent. The second provision authorized the users of the inland waterways taking a diesel fuel tax increase of 45 percent, to its current rate of \$0.29 per gallon, to contribute additional funds to get these projects moving. What that allowed was additional funding to be spent on other projects, including Chickamauga Lock and Dam and Kentucky Lock and Dam.

Authorized in 2016, the Upper Ohio Navigation project, which will modernize and upgrade the three oldest locks on the Ohio River, including Montgomery Lock and Dam, was recently given a “new start” designation and awarded \$22 million in the 2021 workplan.

What is important is that is the first “new start” designation that was given since 2004 on any inland waterways construction project. It is critical to the Nation for that reason, so we can get other projects authorized and also to the Ohio River because if anything on the Upper Ohio fell, that would be a total lock closure in the Port of Pittsburgh.

So since WRRDA 2014, a WRDA bill has been done every 2 years with overwhelming bipartisan support; it has added efficiencies and helped move projects forward on these lock and dam projects, which is very important on the inland waterways. With the adjustments made in WRDA 2020, it is important that the trust fund receipts are appropriated so that we can reduce the inland waterways construction backlog. Many of your colleagues support a robust infrastructure package that will provide jobs, increase efficiencies, and reduce emissions. I would like to emphasize that the infrastructure upgrades on our inland waterways will help the Nation achieve those goals.

In consultation with the users board, the Corps has developed a plan called the Capital Investment Strategy that recognizes the importance of construction and major rehab necessary to modernize the Nation’s waterways system, using objective prioritization criteria and processes to focus investments where they matter most. As you move forward with a potential infrastructure package, I encourage you to include funding for the locks and dams.

In closing, I want to reiterate the fact that beyond enabling commercial transportation, the inland waterways system provides recreational access, stable water supply for communities and industries, and facilitates hydroelectric power. Modernizing our ports and rivers is an investment in our Nation’s continued economic

President Roosevelt. Our locks and dams, and our ports, require attention and financial recapitalization for dredging and channel and harbor improvements to maintain reliability and sustain our Nation's economic well-being and standard of living. That attention starts with reinstating the IWUB.

As an advisory board established by Congress in WRDA 1986, the IWUB provides recommendations to Congress and the Secretary of the Army on investment priorities using resources from the IWTF which the commercial users of the inland waterways have contributed for construction and major rehabilitation of inland navigation investment priorities. Earlier this year, along with all other Department of Defense advisory committees, the IWUB was directed to immediately suspend all operations until the Department of Defense completes a "zero-based" review. I strongly encourage that the board be reinstated given the IWUB is filled with industry leaders and subject-matter experts with extensive experience in inland waterways transportation.

This relationship has fostered candid and collaborative conversations between the U.S. Army Corps of Engineers (the Corps) and stakeholders, and fulfills the "user pay, user say" policy. I believe as I begin discussing project examples, you will understand that the IWUB plays a critical role in project delivery.

The Lower Mon Project

The Lower Mon Project (Locks and Dams 2, 3, and 4), which encountered dramatic cost escalation and schedule delays, is currently funded to completion of construction in 2023. The project was authorized in the WRDA 1992 to replace the Braddock Dam; the Lock and Dam 4 and remove Lock and Dam 3. However, inadequate funding forced the Corps to complete the \$556.4 million project one component at a time, or as funding allowed. Currently, the Lower Mon project is going on its 27th year of construction, which is longer than the life of many Capitol Hill staffers. These locks on the Lower Monongahela River experience the highest volume of commercial traffic on the Monongahela River in terms of both tonnage locked and lockages; further, the pools created by these facilities provide industrial and municipal water and are popular with recreational boaters.

The Olmsted Lock & Dam Project

Like Lower Mon, The Olmsted Lock and Dam Project (Olmsted) was authorized decades ago through the WRDA 1988 at \$775 million. At the time, the project authorization consisted of creating a new lock and dam on the Ohio River between Illinois and Kentucky with two 110' x 1200' chambers and eliminating Ohio River Locks Dam 52 and 53. The original projected completion date was 1998. However, the cost of the project ballooned to \$3.1 billion. Thankfully, WRDA 2014 authorized many of the project delivery recommendations made by the IWUB and increased the threshold size of a rehabilitation project authorized to be cost-shared by the IWTF to \$20 million with an annual inflation amount. One of the most widely heralded provisions of the act was the reduction of the IWTF portion of the cost-sharing requirement for Olmsted from 50 percent to 15 percent. Together with another provision enacted in 2014 to increase the inland waterway diesel fuel tax by 45% to the current 0.29 cents per gallon, this provision expedited completion of Olmsted by four years, saving \$330 million, and allowed a much larger amount of IWTF funds to be spent on other projects—including the Chickamauga Lock and Dam in Tennessee and Kentucky Lock and Dam in Kentucky.

Upper Ohio Navigation System Project

Authorized in WRDA 2016, The Upper Ohio Navigation project, which will modernize and upgrade capacity to the three oldest lock and dam projects on the Ohio River, including the Montgomery Lock and Dam, was recently given a "New Start Designation", and awarded \$22 million for completion of Pre-Construction Engineering and Design Phase and to begin the construction phase. When constructed, this project will mark the completion of one of the IWUB top priority projects. This is very important for the PCC and the nearby region because this marks the first "New Start" Designation since 2004 for a major inland waterways construction project. This is critical because a major failure on the Upper Ohio River would shut down the entire Port of Pittsburgh.

LEGISLATIVE OPPORTUNITIES IN THE 117TH CONGRESS

Since 2014, a WRDA bill has been passed every two years with overwhelming bipartisan support, and numerous provisions added to increase efficiency and help move projects forward on the locks and dams throughout the 12,000 miles of navigable waterways in the U.S. Specifically, the most significant update came in WRDA 2020 when, led by this Committee, Congress agreed to change the construction cost-

share for projects on inland waterways to 65–35 (65% General Treasury and 35% IWTF). I cannot thank the Committee enough for your support in modifying the cost-share.

With the adjustments made in WRDA 2020 by this Committee, it is important that all the IWTF receipts are appropriated so that we can reduce the inland waterways construction backlog as fast as possible.

Congress has taken meaningful steps to tackle the nation’s growing infrastructure problem, however, WRDA is only a piece of the puzzle. Many of your colleagues have expressed the need for a robust infrastructure package that will provide jobs, increase efficiency, and reduce emissions, and I would like to emphasize that infrastructure upgrades on our inland waterways will help the nation achieve those goals. As required by WRDA 14, in consultation with the IWUB, the Corps has developed a plan, called the Capital Investment Strategy (CIS), that recognizes the importance of construction and major rehabilitations necessary to modernize the nation’s inland waterways system, using objective, national project selection prioritization criteria and processes to focus investments where they matter the most. As you move forward with a potential infrastructure package, I encourage you to include funding for lock and dam modernization.

CONCLUSION

In closing I want to reiterate the fact that beyond enabling commercial transportation, the inland waterways system provides recreational access, flood control, stable water supply for communities and industries, facilitates hydroelectric power, enhances regional economic development, and plays a supporting element to national defense.

As this Subcommittee continues to consider water resources in the United States, I urge you to appreciate the conduit of the inland waterways and port system to American competitiveness and growth. Modernizing our ports and rivers is an investment in our nation’s continued economic prosperity because a majority of our nation’s commodities and over half-million jobs are riding on our waterways transportation system and through our ports.

This concludes my testimony, Chairwoman Napolitano. Thank you for providing this opportunity to be here today to address this critically important subject and I look forward to answering questions from the committee.

Mrs. NAPOLITANO. Thank you, Ms. Bucci, very much.

And next, we have Michael Piehler, Ph.D., director, UNC Institute for the Environment.

And you may proceed, sir.

Mr. PIEHLER. Good morning, and thank you Chairwoman Napolitano, Ranking Member Rouzer, the committee and staff. I appreciate the opportunity to share our experience with research and translating actionable information around flood resilience. North Carolina is an excellent model system to consider the essential provisions of WRDA 2020. Our State has a fairly modest 322 miles of ocean coastline, but a remarkable 12,009 miles of inland shoreline woven throughout the coastal plain. With two ports and a diverse water-reliant economy, North Carolina has benefited tremendously from the work of the Corps.

North Carolina has also had more experience than we would like with storms, including having had 36 hurricanes affect us since the late 1990s, and 6 of the 7 biggest rain events in the last 120 years occurred over just the last 20 years. Our research team was established through two programs, the Creativity Hubs and the Collaboratory at UNC, both of which target investments and research addressing societal challenges. Recently, our team also received a grant from the Growing Convergent Research program at the National Science Foundation.

We are grateful for the taxpayers’ investments in our work, and we are enthusiastic about the contributions we can make to moving coastal communities forward. Convergence research is an approach

to formulate and apply research to tackle complex problems with societal relevance. It requires deep integration across disciplines, and, in many cases, engages and integrates stakeholders and end users early.

Our team has the shared goal to provide new information to reduce damage from flood and storms, thus creating economic, environmental, and social benefits.

A focal area for our program, Wilmington is North Carolina's largest coastal city and port, and it is an area that relies on critical natural infrastructure, including marshes and beaches, but faces emerging challenges such as harmful algal blooms. The region has an engaged citizenry and local governments working for environmental and economic balance and the inclusion of communities and resilience policy.

Three features of our program have enhanced its effectiveness, and are relevant to key aspects of WRDA 2020. They include deep engagement with stakeholders and end users, connections to financial risk and models, and reliance on quantitative social science for our inquiries.

Efforts to answer questions related to population well-being require engagement with stakeholders and end users. Through a comprehensive effort at our program's inception, we developed a more robust set of project goals by incorporating the perspectives of the resilience community in North Carolina. And, at the same time, confirm that we were developing solutions for priority problems.

A large portion of our program emphasizes explicit connections to financial considerations. Using coupled models which link environmental change to financial risk is a novel method to determine overall community risk from flooding. Quantifying flood risk and losses associated with insurers, property owners, lenders, and local governments improves each group's understanding of its own risk, but also acts as a basis for developing more sophisticated strategies for managing risk.

This type of highly resolved analysis is unique in that it characterizes risk at the individual property level for thousands of parcels within a community, which are then used to aggregate distributions of risk for the entire community, while also identifying the holders of the risk. Considering the ecosystem services, the monetary value of natural processes to people, we were able to connect the function of natural systems to other financial analyses. Components of ecosystems with the potential to provide benefits related to flooding include marshes, reef-forming bivalves, and submerged aquatic vegetation.

Looking first through the lens of quantitative social sciences, we have fused engineering, natural and social sciences, and policy and planning to seek solutions to the challenges around flooding. To date, research in this realm has typically focused first on the natural portion of these coupled natural-human systems.

Our process began with quantitative inquiries of the human dimension, which results in a reframed and refocused set of research approaches, and solutions better suited to the needs of all communities. How might our experiences as a research team be a value to this group in implementing WRDA 2020?

From our perspective, here are three important steps: Include guidance to funding recipients regarding explicit consideration of connections to financial systems; require a comprehensive stakeholder engagement program forming diverse teams with broad disciplinary perspectives; and include quantitative social science as a key component of technical assessments.

Sustaining the economy and the environment around quickly changing aquatic systems is a grand challenge, but it can be met, and it is clear that WRDA 2020 is poised to contribute to meeting this challenge.

Thank you very much.

[Mr. Piehler's prepared statement follows:]

**Prepared Statement of Michael F. Piehler, Ph.D., Director, UNC Institute
for the Environment**

FULL TESTIMONY

Good day, and thank you Chairwoman Napolitano, Ranking member Rouzer, the committee, and staff. I appreciate the opportunity to share our experience with research and translating actionable information around flood resilience. I serve as the director of the Institute for the Environment at the University of North Carolina at Chapel Hill. Since 1795 Carolina has been committed to developing new knowledge to help our state and our country thrive, and flooding is certainly one of today's prominent challenges.

North Carolina is an excellent model system to consider the essential provisions of WRDA 2020. Our state has a fairly modest 322 miles of ocean coastline but a remarkable 12,009 miles of inland shoreline woven throughout the coastal plain. With two ports and a diverse water reliant economy, North Carolina has benefitted tremendously from the work of the Corps in our state. North Carolina has an impressive extent and diversity of coastal habitats that deliver value to both people and the natural system. Unfortunately, North Carolina has also had more experience than we'd like with hurricanes, having had 36 storms affect the state since the late 1990s. These storms present threats from wind, storm surge, and precipitation. In records kept since 1898, six of the seven biggest rain events in North Carolina have occurred in the past 20 years.

Our research team was established through two programs; the Creativity Hubs and the Collaboratory at UNC, both of which target investments in emerging research addressing grand societal challenges and build capacity for follow on work. The Creativity Hubs project is funded through the university to encourage innovative academic partnerships. The Collaboratory funding is an example of the investment made by the North Carolina General Assembly to leverage the research expertise of the UNC system to provide the latest research findings and actionable solutions to state-policy makers. Recently, we received an additional 5-year grant from the Growing Convergent Research program at the National Science Foundation. We are grateful for the taxpayers' investments in our work and are enthusiastic about the contributions we can make to moving coastal communities forward.

Convergence research is an approach to formulate and apply research to tackle complex problems with societal relevance. It requires deep integration across disciplines and in many cases engages and integrates stakeholders and end users early and sustains their engagement throughout. It is clear that flooding is a transdisciplinary challenge and cannot be solved with individual expertise, but rather requires the integration of multiple concepts to develop new perspectives. Our team includes natural scientists, social scientists, and engineers who have the shared goal to provide new information to reduce damage from floods and storms, and as a result create economic, environmental and social benefits.

A focal area for our program, Wilmington is North Carolina's largest coastal city and port. This area relies on critical natural infrastructure in the form of wetlands and beaches and is also facing emerging challenges, such as harmful algal blooms. The region has an engaged citizenry and local governments working for environmental/economic balance and the inclusion of all communities in shaping and implementing resilience policy. Three features of our program have enhanced effectiveness and are relevant to key aspects of WRDA 2020. They include deep engagement

with stakeholders and end users, an emphasis on connections to financial risk and models, and heavy reliance on quantitative social science to frame our inquiries.

Efforts to answer complex questions related to population well-being and how to improve it in the context of shifting and uncertain environmental threats require engagement with stakeholders including state agencies, local governments, non-governmental organizations, and communities. Through a comprehensive effort at our program's inception, we developed a more robust set of project goals by incorporating the perspectives and experiences of the resilience community in North Carolina. As a result of this initial outreach and engagement, we strengthened our research plan and confirmed that we were developing solutions for high priority problems.

A large proportion of our program emphasizes explicit connections to financial considerations. Using coupled models which link environmental change to financial risk is a novel method to determine overall community risk from flooding. Quantifying the flood risk and losses associated with insurers, property owners, lenders, and local governments improves each group's understanding of its own risk, but also acts as a basis for developing more sophisticated strategies for managing risk. This type of highly resolved analysis is unique in that it characterizes risk at the individual property level for thousands of parcels within a community, which are then used to develop aggregate distributions of risk for the entire community, while also identifying the holders of this risk.

In addition to flood impacts on human populations and on communities, our program emphasizes effects on natural systems because of their important feedbacks to regional economic activity and public health. Considering the ecosystem services, the monetary value of natural processes to people, we are able to connect to other financial analyses. We focus on three classes of benefits that natural ecological features can provide and that storms potentially disrupt. These benefit classes are maintenance of water quality, shoreline stabilization, and ecosystem sustenance. Components of ecosystems with the potential to provide these benefits include vegetation at land-water margins (forested wetlands and marshes), reef-forming bivalves (oysters, mussels), and submerged aquatic vegetation. An example from our work which has had significant application is the quantification of the economic value of nutrient removal by oyster reefs.

Looking first through the lens of quantitative social sciences we fuse engineering, natural and social sciences, and policy and planning to seek solutions to the challenges around flooding. To date, research in this realm has typically focused first on the natural portion of these coupled natural-human systems. Our process begins with quantitative inquiries of the human dimension, which results in reframed and refocused research approaches and decision-making and solutions more in tune with the needs of all communities.

How might our experiences as researchers be of value to this group in implementing WRDA 2020? From our perspective, here are three important steps:

- Include guidance to funding recipients regarding explicit consideration of connections to financial systems
- Conduct a comprehensive stakeholder engagement program, forming diverse teams with broad disciplinary perspectives; and
- Include quantitative social science as a key component of technical assessments.

In summary, embracing the interconnectedness and complexity of managing aquatic systems opens the door for solutions to a range of challenges. Consider a tidal marsh created through beneficial use of sediments. Evaluation of the dredging operation will have been improved by a clear vision of the beneficial fate of the sediment generated and the full suite of values delivered by the marsh. Sustaining the economy and the environment around quickly changing aquatic systems is a grand challenge, but it can be met, and it is clear that WRDA 2020 is poised to contribute to meeting this challenge.

Thank you.

Mrs. NAPOLITANO. Thank you, sir. I appreciate your testimony. And next, we have Mr. Chad Berginnis, last but not least, the executive director of the Association of State Floodplain Managers. You may proceed, sir.

Mr. BERGINNIS. Great. Good morning, Chair Napolitano, Ranking Member Rouzer, and members of the subcommittee. I am Chad Berginnis, executive director of the Association of State Floodplain Managers, and I am honored to be with you today to discuss our views and considerations for implementing the 2020 WRDA.

Eureka, while it is a fitting one-word reaction by ASFPM to the 2020 WRDA, it is also the name of a small Missouri city whose story is just being written. Three days ago, the St. Louis Post-Dispatch wrote about this community's struggle with flooding, yet, many residents not wanting the traditional new big levee.

Nope. Instead, with the help of the Corps, they are thinking about flood risk management differently. They are evaluating dozens of options, including some use of levees and floodwalls, but also buyouts, relocation, or elevation of high-risk properties, the restoration of flood plains as water storage areas, and expanded use of green infrastructure.

It also includes consideration of technologically advanced temporary barriers and harnessing the power of natural processes to store and absorb floodwaters. It is about fighting a more erratic and changing climate with every tool in the toolbox, improving community resiliency, and yet not transferring flooding to adjacent communities. But this, too, is the legacy of the 2020 WRDA; namely, expanding the Corps' ability to provide technical assistance in expanding the flood risk management toolbox.

However, implementation of the provisions will require careful oversight by you, and thoughtful implementation by the Corps. Our written testimony identifies 11 specific actions for either the Corps or the committee to consider as implementation of WRDA 2020 unfolds. To summarize, we want to highlight four broad areas of WRDA 2020 that hold the greatest promise.

First, WRDA 2020 includes a substantial agenda of resiliency policy improvements and expanded nonstructural, natural, and nature-based features as working tools in the Corps' toolbox for flood risk management, such as the clear addition of natural/nature-based alternatives, with the same cost sharing as structural projects, and incentives to recognize the nonmonetary benefits and estimates of long-term costs and benefits of such alternatives.

More and more communities' leaders and the Nation are realizing that many of the nonstructural approaches are well suited to reduce risk at a systemic level and a corridor scale. We wish to highlight the Corps' Engineering With Nature initiative and recommend that the Corps fully commit to supporting the operationalization of EWN through the agency.

Second is the increased emphasis on technical support for States, communities, Tribes, Territories, and especially rural and economically disadvantaged communities to assess and manage flood risk. ASFPM has long supported technical assistance programs, such as flood plain management services and planning assistance to States. Your improvements to FPMS in the WRDA 2020, for example, to include helping communities avoid repetitive flooding impacts, adapting to changing climate conditions and extreme weather events, and the priority for economically disadvantaged communities are all-important areas of focus.

We note, however, that the provision of technical assistance within the Corps will be limited until there is a fundamental restructuring of how it's provided—moving away from the project-based approach and embracing a programmatic discretionary use approach with sufficient staffing in every single Corps district. Another aspect of technical assistance is leadership and commitment to emerging technologies.

ASFPM recommends the Corps evaluate and adopt the latest standards for flood abatement technologies, as well as ensuring suitable water testing laboratory facilities for flood fighting products. Third, we note the importance of the Lower and Upper Missouri River Comprehensive Flood Protection Studies and the required inclusion of both structural and nonstructural measures, including the setting back of levees, removing of the structures from areas of recurring flooding vulnerability, and nature-based features.

Given the added policy flexibility, the Missouri River Comprehensive Flood Protection Study has the potential to advance efforts to expand the uses of nonstructural approaches in a very meaningful way.

As was stated earlier, not only in communities like Eureka, but others like Arnold, Missouri, are rejecting traditional approaches as they eye a more integrated and comprehensive way to address flood risk. Finally, the directive to implement the water resources principles and requirements and to review and revise planning guidance and regulations 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 for future conditions of water resources planning.

Thank you for this opportunity to provide our thoughts to you today, and I am happy to answer any questions you might have.

[Mr. Berginnis' prepared statement follows:]

**Prepared Statement of Chad Berginnis, C.F.M., Executive Director,
Association of State Floodplain Managers**

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) tradi-

tional 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 non-structural, 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.

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.

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, 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, ASFPM 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 ground-work 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 HHPD. 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.

Mrs. NAPOLITANO. Thank you very much, sir. I appreciate your testimony, and all of you. Thank you to all the witnesses. We will now hear questions for the witnesses and, again, we will use the timer for each Member. If there are additional questions, we may have a second round or more as necessary.

I will begin the questioning with Mr. DeFazio. I will defer to him for questions.

Mr. DEFAZIO. Thank you, Madam Chair. To Secretary Strickler, something you said in your testimony about the current estimated sea level rise by the Corps you find to be totally inadequate. Could you address that a bit more?

Mr. STRICKLER. Yes, Mr. Chairman. Thank you for the question. It is my understanding that the Army Corps is using its own intermediate sea level rise curve for engineering and planning purposes and evaluation of projects. That curve estimates and projects significantly less sea level rise than the other curves, particularly the NOAA intermediate high curve, but even lower NOAA curves that are being used for planning.

In Virginia, we are using the NOAA intermediate high curve, which shows that in the next 20 years in our Hampton Roads area, we are going to be seeing, at least, another 18 inches of sea level rise with closer to 4 feet by about 2060, and there is a significant gap there, about a 2-foot difference between that and the Corps’ intermediate projections. So that is a pretty big deal, the lifespan of some of these larger projects.

Two feet can be the difference between having houses and businesses being protected and having their first floor be covered with water during floods. So that is a concern for us, and it is one that we would like to see updated and synced, hopefully, across the Federal Government and that is something that we think that you all in the Biden-Harris administration can work together on.

Mr. DEFAZIO. Well, thanks for bringing that up and it is certainly something I will raise with Jane Lubchenco when she gets into her new job, and she is somewhat of an expert on these issues, and have the administration address that generally, both through the Corps and other agencies.

To Professor Piehler, if I could kind of distill down what you said. The way you are measuring, and setting up for resilience measures is kind of a new way of a cost-benefit ratio looking at it, don’t you think, compared to what the Corps currently uses?

Mr. PIEHLER. I do think that is accurate. It is work being done on the Center on Financial Risk in Environmental Systems at our university. And what it does is directly couple the environmental models to the financial models, so then, rather than feeding in relatively simple scenarios, like a 1-percent likelihood of an event occurring into a financial model, you are coupling the two models, and you are able to capture the dynamics of both the environment and whatever the financial system is that you are interested in.

Mr. DEFAZIO. Right. And you are looking, specifically—I mean, you said you were going down to essentially the individual parcel level for people?

Mr. PIEHLER. That is accurate, yes. There are a lot of data out there that I think have not been fully utilized, and in this individual project, for sure, that is the level of resolution.

Mr. DEFAZIO. That is really interesting. I think that is something the committee should be looking at, and, perhaps, modeling for the future. There would also be a public benefit far beyond that, since many of these losses, or the financial things you are measuring, would be under the flood insurance program. Isn't that correct?

Mr. PIEHLER. That is absolutely correct, yes, and that is a source of some of the data, but I also think it is a comparison between the data that we are using in our study, and those that have been used in NFIP.

Mr. DEFAZIO. Great. OK. Thank you, Madam Chair.

I yield back.

Mrs. NAPOLITANO. Thank you, sir, very much.

The next, we have, Mr. Rouzer. Mr. Rouzer, you are recognized.

Mr. ROUZER. Thank you, Madam Chair, and thank you, again, Dr. Piehler, for joining us here today. I am, as most folks know, I am an NC State Wolfpack alumnus, but today I am a Carolina fan and I really, really appreciate you being here.

Now, you mentioned the term “convergence research” in your testimony, and you note that, quote, “flooding is a transdisciplinary challenge and cannot be solved with individual expertise, but rather requires the integration of multiple concepts to develop new perspectives.”

There is a lot packed into that. How would you describe how convergence research can be applied to reduce damage from floods and storms, and as a result, create economic, environmental, and social benefits?

Mr. PIEHLER. So moving away from the academic definition of convergence, there is a practical definition, and what it involves is getting the necessary experts together ahead of time, and not forming individual concepts for investigating a problem independently, but, rather, working as a group.

And there is a lot of conversation around developing a shared language, and I think that is really true, that working in individual disciplines, the perspectives are so focused that you don't necessarily have a sense of all of the allied issues that other experts are thinking about.

So the breadth of our group was established through those original funding sources that I described and we have been able to work together collectively for almost 2 years now, and have gotten to the point where our engineers understand the things that our natural

scientists are saying and understand the things that our social scientists are saying and are able to frame the whole of the question.

For me, flooding is an issue where if you know where the water is going, how deep it is, and how long it is there, that is great, but that doesn't tell you what the impacts are on the community, and that doesn't give you a really clear sense of the financial implications.

So convergence is a popular term right now to describe bringing together these groups, developing this deep integration and working towards specific problem-solving so we have identified minimizing damage from flood and storms as the problem we want to tackle, and are looking at it from our multiple disciplinary perspectives, and then our shared group understanding.

Mr. ROUZER. In North Carolina we have had tremendous population growth. Now, it is not uncommon if we have a huge rain event in Raleigh, North Carolina, further east, southeast, in particular, my district can sometimes become a flooding event. There are a lot of constituents that I have that look at the rivers, the creeks, the streams and say, you know, it seems to us that if we would just clean these out, if we would keep them up, the water would have somewhere to go and we wouldn't endure the flooding events that we have had the last several years.

Now, I certainly understand that things can be more complicated than they seem, but it does strike me that there is an element of common sense here that suggests that many of my constituents are dead on. What type of research, what type of analysis is being done in that regard as it relates to cleaning out the rivers, creeks, and streams? And do we have an ability? And is this what you are really working on?

I am finding the targeted areas where it would be most beneficial to remove debris, et cetera.

Mr. PIEHLER. So that is not a core focus of the things we are doing right now, but it is certainly something that we think about. And I think you are right, that in some cases, there are opportunities to improve the situation if there are huge debris dams that are entirely blocking creeks and streams, that that can be a way to prevent that obstruction from causing flooding.

But it is the case that a lot of the streams and creeks are really flowing fairly well, and that debris removal, in and of itself, I don't think is a key answer. I think it is a tool that can be used to solve some problems. People also think about dredging as a tool, and that has been shown to not really develop the new volume of water-moving capacity to combat the huge floods that we see now.

So certainly—I think we need to consider circumstances where there is really acute blockage of streams and creeks and even rivers, but I don't think that that is probably a core tool for the things that we are thinking about, the magnitudes of the flooding that we are looking at. And an important thing as you get closer to the coast, is to remember that removing those obstructions and improving the flow works both ways.

So as you have storm surge, or as you have water level rise, it is also going to bring the water back up into the land just as well as it takes it off.

Mr. ROUZER. Thank you, Madam Chair.

I yield back.

Mrs. NAPOLITANO. Thank you, Mr. Rouzer.

I will yield myself 5 minutes to begin the questioning.

Mr. Seroka, you acknowledged that it is now up to the administration and the budget process to implement the spend-down of the Harbor Maintenance Trust Fund balance, the equitable allocation formulas, and the expanded use provisions. But can you discuss why there is a need to act quickly, and what does it mean for job creation, addressing the huge backlog of maintenance needs, our economy, and our trade?

Mr. SEROKA. Thank you, Madam Chair. Acting with urgency in providing certainty will allow for private investment to also happen quicker; provide faster benefits to America's farmers and exporters who need certainty and lower freight cost to compete in the global marketplace. And please remember with 9.5 million Americans still out of work, this means jobs. Ports around the Nation are economic enablers for their surrounding communities and regions.

The Port of Los Angeles as 1 port supports 1 in 9 jobs in southern California, and 1.6 million nationwide. Expediting these projects for the Nation's ports will allow them to more fully support America's recovery and resurgence.

Mrs. NAPOLITANO. Thank you, sir.

Mr. Strickler, in your testimony you discuss the great role your State plays in developing, managing, and operating flood control, resiliency, and water resource projects by partnering with the community. How important is community consultation in resiliency planning and on projects, especially in communities historically neglected or disenfranchised?

Mr. STRICKLER. Madam Chair, thank you for the question, and it is critically important. These communities, many communities along our coasts, are—in both rural and urban areas—communities that have traditionally been disadvantaged, disenfranchised, whether through redlining, or other policies, or simply through economic considerations, and sometimes the lowest lying land and the most vulnerable land is the least expensive land. Getting into those communities doing significant outreach, not only to inform them about the work that we are doing at the Commonwealth level, but also to get buy-in from the community and understand the types of solutions that those communities want to see in order to survive and thrive into the future is really a core focus of our coastal master planning work.

Mrs. NAPOLITANO. Thank you very much.

Mr. Berginnis, your testimony addresses the diverse needs of communities around the country. Do you believe the Corps needs to do more to implement modern science and technology to address all the modern problems, such as expanded flooding in the east and longer droughts in the west?

Mr. BERGINNIS. Madam Chairwoman, yes, indeed. And the Corps, as I believe your statement had made it clear earlier, they are the preeminent water resource agency in the United States. Yet, we have a hurdle of getting that technical assistance to communities. And, so, while it was a great provision in the WRDA 2020 where there is going to be some intentionality on working with rural and economically disadvantaged communities, that is

only 10 communities, and that expertise is needed literally by hundreds or thousands of communities.

So, we need to operationalize that technical assistance by having that disassociated from projects and having Corps expertise available on the ground when it is needed.

Mrs. NAPOLITANO. Well, then, would you agree—to all the witnesses—much of your testimony concerns the problem that the Corps is underfunded to perform many of their necessary concerns and projects across the country? Can you discuss what impact a lack of funding has on flood protection, navigation, and environment? Anybody? Underfunding of the Corps?

Mr. SEROKA. Absolutely, Madam. And that is why we pushing for these— it has been over a decade that we have had these conversations, and with so much great support of House T&I, as well as this subcommittee. So we support that effort as well.

Mrs. NAPOLITANO. Anybody else?

Mr. BERGINNIS. One thing I would add is that the Corps does do a lot of robust research and development. So, again, they are continually sharpening their skills, and giving us new information. And so that is an area also that is not as funded robustly is making sure that the Corps itself understands and can use the latest technology.

Mrs. NAPOLITANO. So it needs to be reprogrammed. Anybody else?

Mr. STRICKLER. Madam Chair, I would just agree, States like Virginia don't have the benefit of large dedicated funding sources like some of our friends on the gulf coast, for example, do. And, so, increased Corps funding, and importantly increasing Corps funding for States that have taken the proactive steps, like we have, putting together thoughtful, forward-looking master planning efforts is really important for us.

Mrs. NAPOLITANO. Well, thank you very much, everybody. Now, I yield to Dr. Babin. You may proceed.

Dr. BABIN. Thank you, Madam Chair. I want to say thank you to all you witnesses as well. We really appreciate this very important hearing. And thank you, again, Madam Chair, for having this. I would also want to thank our ranking member, Mr. Rouzer, as well. The successful passage of WRDA 2020 is a good example of what we can achieve when we all work together. And I am very pleased to be talking about it today. As a Representative of southeast Texas, basically, from Houston, Texas, over to Louisiana, nine counties it is comprised of, as well as the critical elements of my district, as well as the economic health of the State and, really, the entire country.

Without efficient ports, strong inland waterways, and well-built pumps and levees, this country down here would not experience the level of economic success that it has been seeing up to today. My district has four ports, including one of the Nation's biggest ones, which is the Port of Houston and the Houston Ship Channel is the busiest U.S. deepwater draft waterway in the country. It is the top export port in the Nation, biggest energy port, largest petrochemical refining complex, and largest container port on the gulf coast, and the number one breakbulk port in the country. And that is why I am very pleased to have helped join in the efforts to en-

sure that provisions supporting the widening and dredging of the Houston Ship Channel passed in 2020 WRDA.

This is a critical milestone for this region, and from conversations with the port and companies who utilize this channel, to meetings with Secretary James of the Army Corps, and leaders at the previous administration's OMB, the Houston delegation, and I have bipartisanly supported the channel's expansion project in every way that we possibly could have. And to help complete the approval process, we also secured a "new start" designation at the beginning of this year, allowing construction to begin, and that means that we are able to get authorization, appropriation, and a "new start" designation all within 1 year.

Very rarely does that happen. We were so happy. But this means that we were able to get this huge win, not only for advancing our country's energy independence, but also improving our national security, providing goods, services, and what have you for our support of our growing economy.

One of the challenges, however, that we face down in this southeast Texas region is the repetitive flooding that so many of my constituents experience on an annual basis now. We have a great opportunity to help mitigate this problem with stronger and improved infrastructure. So, I have a question that I would like to address to Dr. Piehler and also to Mr. Berginnis.

Is it not an exaggeration to say that by spending \$1 million today on hurricane and flooding prevention infrastructure, that we can save \$1 billion on damages down the road from another storm or hurricane like Hurricane Harvey? If you could both, please, share your thoughts on this, I would appreciate it.

Mr. PIEHLER. Sure. I think I would certainly agree with the investment upfront providing a huge return on the back end. The million/billion numbers I wouldn't be entirely certain about. I think it would depend on your investments.

But I think it is clear that prevention is a very good investment and that we are in a place where we have a good understanding of what those investments might be.

Dr. BABIN. Right. Thank you.

And, Mr. Berginnis.

Mr. BERGINNIS. Yes. And I would also concur as well. FEMA continues to do updated studies to show the investment in flood mitigation activities, infrastructure, and such, and they show an excellent return on investment. For flooding measures, I believe it is 8 to 1 in terms of doing that.

And the other thing that we need to take into account, and your district certainly knows that well, is to pull out every tool we have in the toolbox. It is infrastructure, it is nonstructural, some of it even could be codes and standards. We have to use an all-the-above approach.

Thank you.

Dr. BABIN. Great. Great answers, both of you. Thank you so much.

And, Madam Chair, I will yield back.

Mrs. NAPOLITANO. Thank you very much, Mr. Babin.

Next, we have Mr. Huffman.

You may proceed.

Mr. HUFFMAN. Thank you very much, Madam Chair, for this very important hearing.

Last week in the Committee on Natural Resources' Subcommittee on Water, Oceans, and Wildlife, I chaired a hearing on building back better with a focus on building resiliency for the economy, for climate, and for ecosystems. This is the way we have to approach it these days, with climate change, a warming ocean, acidification of our ocean, and of course rising sea levels.

The good news I see is that many of these nature-based solutions we have been talking about will help us solve and confront the climate crisis and get people back to work at the same time.

I believe we can promote investments in blue carbon ecosystems and restoration projects that are going to sequester and store carbon, while also protecting our coasts from storms. We have an opportunity to build up our working waterfronts, our wetlands, our oyster beds, and living shorelines. And restorative aquaculture is very promising.

So I have a question for Secretary Strickler.

And let me say, Secretary Strickler, it is great to see you again. You were a terrific staffer in the Natural Resources Committee for many years. It is good to see you continue in your great work. And great to have you back in the House of Representatives.

You discussed in your testimony the importance of protecting and enhancing green or natural infrastructure, like natural coastal barriers and fish and wildlife habitats.

But I want to talk a little more specifically about fishing communities and what this means for communities like many of yours in Virginia, like a lot of the ones I represent on the north coast of California.

Can you talk about the multiple economic benefits of how natural infrastructure can provide both coastal resiliency, but also improve aquatic ecosystems, and what that means for fish habitat and fishing communities?

Mr. STRICKLER. Mr. Huffman, it is good to see you as well, and thank you for your kind words.

The things that you mentioned here, green infrastructure, blue carbon, enhancing these resources in concert with our resilience efforts, are incredibly important for all of coastal Virginia, but specifically for our fishing communities and the folks who depend on ecotourism, coastal tourism, and the like.

For example, one of the things you mentioned was oyster reef restoration. We, as part of our Chesapeake Bay restoration effort, have a significant initiative underway to restore oysters in a number of tributaries along the Chesapeake. And those obviously provide the cobenefits of habitat for juvenile fish, but also for wave attenuation and coastal resilience as well.

The most significant problem we face in Virginia is something that is, I guess, most easily described as coastal squeeze, where you have got sea level rise and increased coastal hazards on one side versus what has traditionally been thought of as a fixed infrastructure, whether it is homes, businesses, roads on the other side.

And as the sea level comes up, it pinches that really, really important coastal habitat, whether it is wetlands, dunes, beaches, or

riparian forests. They are our most productive ecosystems for fisheries in particular, but also for wildlife habitat.

And that is where we are really going to get hurt. Virginia is incredibly dependent on blue crabs, which are very important for the commercial fishery, but also as forage for a number of other fisheries, including striped bass, which depends heavily on not just the estuary, but the rivers as well for spawning.

And so our fisheries ecosystem in the Chesapeake Bay and the coastal Atlantic Ocean would completely collapse if this habitat were to go away. And so what we need to figure out is ways to restore and protect those flood plains, those coastal barriers, those estuarine habitats, while at the same time making our communities more adaptive and resilient to climate change.

Mr. HUFFMAN. I appreciate that. And those fragile estuarine habitats are just as important on the west coast to our salmon fisheries.

So that is it. Before I yield back, Madam Chair, let me just tell the witness, Mr. Berginnis, who brought up Eureka, Missouri, I represent Eureka, California. And it is great to see natural solutions being put to work in Missouri. We are certainly doing our part in California.

But from one Eureka Representative to another, I appreciated your testimony.

And I yield back, Madam Chair.

Mrs. NAPOLITANO. Thank you very much, Mr. Huffman. That was very nice of you.

Next we have Mr. LaMalfa.

You may proceed, sir.

Mr. LAMALFA. Thank you, Madam Chair.

And thanks to our witnesses in committee today.

Dr. Piehler, I have a couple of questions for you at this moment on issues concerning how Army Corps is working under a new program to investigate installing more hydropower.

Now, we have seen issues where hydropower is not treated very fairly as a form of renewable energy. It seems to be the emphasis is so heavily upon wind and solar, yet those are not 24/7 available sources of power. So Army Corps was instituting a program to promote more of it in rural areas, seeing if existing dams could be refitted or upsized on their hydropower programs.

It certainly would mean a lot for the rural economy in places like mine, which have a lot of opportunities for expanding hydropower or creating hydropower and the rural jobs that go with those. Once you build other types of green power, those jobs dwindle down to virtually nil as opposed to the powerplants, which are permanent infrastructure.

So, Dr. Piehler, in the WRDA 2020 there was a provision that would allow non-Federal interests to evaluate and plan for whether existing dams could be upgraded, modified to include more hydropower.

Do you think that investment in these areas would be something Congress should be emphasizing in comparison to other types of renewable energy?

Mr. PIEHLER. So I will say that is outside the scope of my expertise and the things that we are focused on in our current work. But

I do think that, like any of these proposed projects, it is really important to look at the comprehensive situation and consider everything there is, from environmental to financial, and weigh the decision.

Mr. LAMALFA. All right. Let's shift gears then.

We have had some disaster issues in this area. You might recall Oroville Dam where a spillway infrastructure broke and a lot of erosion was allowed to get into the river, Feather River between Oroville and largely the Yuba City/Marysville area, and other issues like that where, post-forest fires, we have a tremendous amount of erosion that can get into the water, run down the watershed into rivers and streams, et cetera.

Yet there is not much that seems to be done about that. We should be doing more forest management and more issues to help prevent those things from happening in our waterways.

So what I am getting at is that in the WRDA 2020 there was a section 118 pilot program that can be used to help work on that. Do you believe that would be a very productive way of using that program in WRDA 2020?

Mr. PIEHLER. So from the environmental perspective excess sediment can be really problematic in aquatic systems. And I think you alluded to the solutions almost always being front-end investment and on-land activities to prevent it from happening. Obviously, in cases like forest fires it is hard to do, there is not a lot of mitigation against that.

But I do think that considering sediment management is critical. As you get to the coast, the dynamic gets a little more complicated because so many of the habitats that we value there rely on a supply of sediment, so it becomes a little more like Goldilocks, where you want the perfect spot, a little bit of sediment, but not too much.

But I certainly believe that sediment is a critical factor in aquatic systems and advancing its management is an important investment.

Mr. LAMALFA. Yeah, I don't think we are running short of sediment around here. So our rivers and streams have less capacity. Well, the rivers, especially with the levees, have less capacity to carry floodwater because they are soaking up more and more.

And the forest situation, for example, up in the upper Placer County area, fire residue has caused one of the dams, at least one of them up there to have problems being able to run their hydroelectric system on there because of silting up at the bottom of that.

So it indeed does have a big effect. I know there is much to be done to prevent silting along roadway construction projects with all the wattles and stuff you see.

But, interestingly, they want to remove the dams up on the Klamath, three of them in my district, and they are not accounting for the amount of silt already sitting behind those that would be released into the Klamath River all the way to the ocean, thereby having a devastating impact on the fisheries.

They don't seem to be talking about that much. So we have to look at silt from all angles here.

So with that, Madam Chair, I will yield back.

Mrs. NAPOLITANO. Thank you, Mr. LaMalfa.

Now we have Ms. Johnson from Texas.

You are on, Eddie Bernice.

Ms. JOHNSON OF TEXAS. Thank you very much, Madam Chair, Ranking Member, and Chair of the full committee.

This has been a very interesting hearing, and I would like to ask unanimous consent to put my opening statement in the record. And I simply want to make a statement.

I hosted a meeting over a year ago with our North Central Texas COG and all of the stakeholders with FEMA, with the Corps of Engineers, and our State, city, county level officials to talk about flooding and prevention, because what we find ourselves doing is constantly cleaning up behind flooding.

I am in north Texas, but we have lots of tributaries from major water streams, and we deal with a lot of flooding. And we have found in working together, which we are still working together, that we can avoid so much cost if we focus on prevention rather than cleanup.

And so that is ongoing. And perhaps sometime we can have a hearing that includes some of the Texas activity that is really focused on prevention. And I just wanted to share that with the full committee.

We have the largest ports. We have many water streams as we are a border State. And I think that we have started to look at something very useful for the entire country for our area, with bringing all these stakeholders together, Federal, State, city, and county, as well as two major Federal agencies, with both FEMA and the Corps of Engineers, to look at saving money and attempting to work together to avoid some of the flooding damage.

So thank you very much. And I yield back.

Mrs. NAPOLITANO. Thank you very much. And, yes, your testimony will be entered into the record.

[The information follows:]

Prepared Statement of Hon. Eddie Bernice Johnson, a Representative in Congress from the State of Texas

Please allow me to thank Chairwoman Napolitano and my fellow colleagues on the subcommittee for their diligent work to address the urgent water resources needs of our communities. The purpose of this hearing allows us to continue to monitor and implement the policies and principles included in WRDA 2020. As we seek to address the multitude of water resources needs of disadvantaged communities across America, we should also seek to include minority and women owned businesses in providing services to address these needs.

As noted by the committee, the Corps is the Federal Government's largest water resources development and management agency and is comprised of 38 district offices within eight divisions. The Corps operates more than 700 dams; has constructed 14,500 miles of levees; and maintains more than 1,000 coastal, Great Lakes, and inland harbors, as well as 12,000 miles of inland waterways. Given the size of the Corps, I wonder what minority contractors are able to participate with Corps projects.

The committee also notes that the Corps continues to respond to the challenges of extreme weather events, strengthening storms, and sea level rise—each of which create unique strains on water infrastructure, and require diverse approaches to meet the complex needs of communities relying on it.

Given the recent extreme weather challenges in Texas and across the Nation it is my hope that, as we seek to implement sound water resources principles, requirements and guidelines, we make sure we are able to include all of our communities of color and design water systems with them in mind.

As the committee continues to focus on environmental justice policies as they relate to future Corps projects, it is without question that the inclusion of minority businesses must be a strong part of this effort. History has shown us that we cannot adequately address needs of economically distressed communities while excluding them from the very process that is meant to provide economic help.

Madam Chair, I am encouraged that, as the committee notes, WRDA 2020 makes important strides to better enable communities of all affordability levels and economic status to participate in the Corps process and access the expertise or water infrastructure they need. It also helps ensure that the Corps provides wider community engagement and consultation with such communities in the Corps process.

Examples of provisions in WRDA 2020 that address access and affordability concerns, include:

- Section 112 requires the Corps to update its environmental justice policies and ensures that the Corps provide meaningful consultation with minority communities, low-income communities, and tribal communities affected by water resources development projects.
- Sections 117, 118, and 165 provide the Corps with additional flexibility in addressing the water resources needs of rural, small, or economically disadvantaged communities.
- Section 119 authorizes the Corps to work with communities facing repetitive flooding in developing and implementing permanent measures to reduce emergency flood fighting needs.

The provisions, along with the pilot and technical assistance programs that are included in WRDA 2020 are most encouraging. Thank you again for holding this hearing. I yield back the balance of my time.

Mrs. NAPOLITANO. Next, we have Mr. Mast.

You may proceed.

Mr. MAST. Thank you, Chairwoman. I appreciate the time.

Thank you, everybody, for your testimony.

Dr. Piehler, my questions are going to go to you today. I was reading your written testimony, as well as listening to you. You spoke about something of particular interest to me, which is what you labeled as harmful algal blooms. I speak to them more so in the terms of toxic algal blooms.

I don't know, are you aware that the EPA has put some specific numbers on algal blooms identifying when they are too toxic for human contact?

Mr. PIEHLER. I am, yes.

Mr. MAST. You are? Are you familiar with those numbers the EPA put out there?

Mr. PIEHLER. I couldn't—no, I could not provide them right now. But I am certainly familiar with the new guidance.

Mr. MAST. For microcystin, which is quite often what you get in this blue-green algae, it is 8 parts per billion or 8 micrograms per liter. It is too toxic for human contact, leading to things from liver failure to death, depending on how much you might ingest for that, and certainly has killed wildlife as well.

Do you have any idea of what kind of numbers your area has seen?

Mr. PIEHLER. I think that—no, not specifically. But certainly we have had problems with toxin-producing species. And I have done some work in Florida on similar species.

Mr. MAST. Where did you do that work in Florida? Obviously, that is my backyard.

Mr. PIEHLER. Lake George. So leading up to Jacksonville.

Mr. MAST. Sure. There are a lot of folks that deal with this issue, from Louisiana, to Ohio, Michigan, Florida, and other places. Not

always [inaudible] that this issue is dealt to you by the U.S. Army Corps of Engineers.

So in my community I actually have a situation where every year we can pretty much count on the U.S. Army Corps of Engineers taking algal blooms—and you already talked about the numbers of where they are toxic at 8 parts per billion—that are measuring somewhere around 400 to 600 parts per billion, so extremely toxic, taking them out of one water body and moving them to an entirely separate body of water and community by canals that they dug.

How would you feel if that was going on in your community?

Mr. PIEHLER. I think that is one of those tough situations where we have a solution to a past problem that is creating a new challenge and we need to rethink the solution.

Mr. MAST. Can you expand on that a little more? That seemed like a lot of ambiguous terms, not terribly specific.

Mr. PIEHLER. Well, I think about our work where we look at things like stormwater drainage systems, which were a remarkable early resilient strategy. And now, as water level is high, some of the stormwater drains don't work as they once did, and so they end up being a problem that creates new flooding.

So if you have a situation where you are managing water in one way, thinking about, like, an estuary, where originally in the 1980s we were looking at phosphorus, if you do a really great job managing phosphorus you can end up moving your problem farther downstream in an estuary or you have the same algal blooms and they are then limited by nitrogen.

So I think it is a case where occasionally solutions create unexpected problems.

Mr. MAST. I think we are all experienced to that on the Water Resources and Environment Subcommittee. Previous solutions creating future problems is probably one of the most bipartisan issues that we all deal with on this committee.

I'm going to ask you this pointed question. Do you think the Corps of Engineers has the right to poison communities?

Mr. PIEHLER. I think that that is not a—I mean, I don't know that I think anybody should be poisoning anyone. But I would have to understand the situation a little more specifically.

Mr. MAST. No doubt all these situations have their different idiosyncrasies.

But we should be able to agree at a certain level that nobody has the right to poison us as individuals. And certainly as an overseer of Government, that should be a basic premise of good Government, that we not allow [inaudible] Government to poison communities [inaudible].

Mr. PIEHLER. I definitely—I subscribe to the “do no harm” philosophy for sure.

Mr. MAST. Very good.

Do you think that the Corps of Engineers should be allowed to exempt themselves from different provisions of the Clean Water Act?

Mr. PIEHLER. Again, I would need more context. I do think that there are reasons for all sorts of decisions. And I wouldn't want to say specifically.

Mr. MAST. Very good. I appreciate your answering my questions today.

I just [inaudible] one quick question, Madam Chairwoman, if you know the answer to this, as we are speaking about WRDA. Are the Clean Water Act and "waters of the U.S." planning to be opened up in WRDA 2022?

Mrs. NAPOLITANO. That I would have to defer to staff to see where they are with that.

Mr. MAST. Thank you, ma'am. I appreciate your time.

Mrs. NAPOLITANO. Thank you, Mr. Mast.

Mr. Garamendi, you may proceed.

Mr. GARAMENDI. Thank you, Madam Chair, and for you and your leadership, Peter and the ranking members. Thank you for last year's WRDA. We are going to have a big task this year monitoring the implementation of a whole series of very, very important elements in that legislation.

I want to speak to two of them in the next few moments.

First of all, the harbor maintenance program, really good work. We are going to get the money. How are we going to use it?

And this is a question for Mr. Seroka.

Should we allow that money to be used beyond the immediate water, beyond the actual structures on the water dealing with some of the access, as well as acquisition of property to maintain the integrity of the ports?

Mr. SEROKA. In short, Congressman Garamendi, no. We believe that the funds should be used in the water for maintenance.

And those examples would include specifically the replacement elements to our berthing structures; the timber fender piles replacement that not only need maintenance but upgrading and modernization; and of course the seismic work that we need to do, like we are doing with marine oil terminals here in the State of California, across all cargo terminals.

Mr. GARAMENDI. Very good. Then I suppose sea level rise should also fit into that same equation.

Thank you very much for your answer.

Mr. SEROKA. That is correct.

Mr. GARAMENDI. The next question goes to Mr. Berginnis of the Association of State Floodplain Managers.

I was taken by your testimony and, frankly, quite enthusiastic about all of the additional ways we can deal with flooding, setbacks, and so forth.

It turns out that you may be in a situation where you want to do something on one hand and then the other hand going in a different direction.

Specifically, we have introduced legislation, Mr. LaMalfa and I introduced legislation on the flood plain insurance programs for farmers, that the National Flood Insurance Program be designed in such a way as to encourage agriculture in the flood plains. However, you opposed that legislation.

Could you explain why?

Mr. BERGINNIS. To my recollection on that legislation one of the components that was problematic was to exempt certain buildings, like farmstead buildings, for example, not necessarily equipment, from things like the elevation requirement. And one of the things

that we have to draw a line for is ensuring the public health and safety.

And farmers are not unlike anybody else in the country who are facing threats from climate change and sea level rise. And we need to, instead of exempting them, what we need to do is provide them assistance through mitigation programs or something to actually help them comply with those types of things.

Mr. GARAMENDI. Perhaps you ought to come to the Sacramento Valley and take a look at what you just described. We could probably take—some of these are historic buildings, farm buildings, houses that have been there for generations, and you want us to put them maybe 15 feet into the air. I think you need to take a look at this.

I would appreciate very much working with you so that you gain a full understanding of what your opposition really means. If we cannot provide flood insurance for agriculture in all of its various ways, not only the farm buildings, but also the homesteads, then you are simply going to drive agriculture out of the flood plain.

Now, maybe that is what you want to do. But I would suggest that one of the best uses for the flood plains, aside from setbacks and natural environments, is agriculture.

Mr. BERGINNIS. Absolutely. And we would welcome working with you and understanding the unique problem there, because there are a lot of solutions that can at least even get you partially protected and partial resiliency. And partial is even better than nothing.

The point is that we definitely want to ensure some level of resiliency and protection so that they survive the next storm. And so we would be happy to work with you on that.

Thank you.

Mr. GARAMENDI. Good. I am sure Mr. LaMalfa and I would welcome you when the COVID pandemic allows us. We will show you a flood plain where your policy is exactly in the wrong direction.

Mr. BERGINNIS. OK.

Mr. GARAMENDI. With that, I am going to thank you, Madam Chair, for what is a very important hearing. I look forward to working with you and the committee on the implementation of the extraordinary work that was done in WRDA, in the last WRDA.

Thank you. I yield back.

Ms. NAPOLITANO. Thank you for your part in it, Mr. Garamendi. I appreciate it.

Now we move to Ms. Mace.

You are recognized.

Is Ms. Mace available?

If not, we will proceed to Mr. Westerman.

Mr. WESTERMAN. Thank you, Madam Chair. Good to see you. And it was such a pleasure to work with you on the WRDA 2020 as the ranking member on the subcommittee. And I know Ranking Member Rouzer will do probably a much better job than I did working with you to get WRDA 2022.

Mr. Berginnis, you talked about the need for the Corps to share their expertise, to consult with folks, with communities, even if the projects they are working on aren't part of a specific authorized project.

And I know we are again barely a few months into WRDA 2020, but thinking about the future of WRDA 2022, can you further outline how you think Congress should direct the Corps to undertake more of this technical assistance, sir?

I am especially interested in how we can assist the Corps in doing that when I hear all the time about current backlog maintenance and other projects sitting on the shelf waiting for money and manpower to complete.

Mr. BERGINNIS. Certainly.

So in our written testimony, in fact, one of the things that we were struck by is something on the Corps website that even talked about this uniqueness.

But we actually have some good models in Federal Government right now. The Natural Resources Conservation Service is one that comes to mind.

So in NRCS you actually have staff funded through the NRCS that are your district conservationists, that they are your area conservationists. These are people that, if you have one of those communities that just had a flood and say, "Hey, I am looking at some solutions, I don't need a big study," they could call them up and they could actually go to a public meeting or to a council meeting.

And right now the dynamic that we have is that you really can't do that with Corps staff. And yet, they need to be at the table.

And so whether it is NRCS, USGS also has water science centers in a lot of the States, and again they have staff that are able to do that.

I think what it requires from the Corps standpoint is to provide the funding generally for technical assistance and making sure that every district actually has staff that are able to provide that as needed.

Mr. WESTERMAN. So how do we address that manpower issue with the Corps? Do you think they have the resources there to do this extra work if they had the funding or do we need to look at that in more detail?

Mr. BERGINNIS. Well, I believe, like Chairwoman Napolitano had indicated, the Corps does not have the funding right now to do that. And they certainly need extra resources. On the authority, I will leave it for you all to figure that out, but certainly extra resources to do that.

Mr. WESTERMAN. And could that even be something that is maybe contracted out to other professionals through the Corps to provide the community assistance?

Mr. BERGINNIS. Looking at other Federal agencies where this is successful, they typically don't contract that out, because they are contracting out the larger projects and the work.

For instance, in NRCS, and I was a county planner in a rural county in Ohio, and your NRCS people actually become trusted resources in the community.

So, as you know, solving flood issues also requires an amount of trust between the Government and the community. And so, by having it as staff, I think you end up building a history and some trust as well.

Mr. WESTERMAN. All right. That is all I have, Madam Chair. I yield back the balance of my time.

Mrs. NAPOLITANO. Thank you very much, Mr. Westerman. I agree with you, funding is a big issue.

Mr. Lowenthal, you may proceed.

Mr. LOWENTHAL. Thank you, Madam Chair. And I would like to thank you and the bipartisan members of this committee, and you and Chairman DeFazio, for WRDA 2020, especially the part around the Harbor Maintenance Trust Fund. You did an excellent job.

And, Mr. Seroka, you explained it very clearly in your presentation. You explained clearly about the expanded use, the importance of the expanded use, about a fair and equitable distribution. You also talked about how the distribution of the funds was fair for everyone in the process. And it was a very, very good presentation.

But I have a few other questions while we have you here, Mr. Seroka. And I want to thank you for your great work at the Port of Los Angeles. You know, I also represent the Port of Long Beach.

And one of the interesting questions that I have here, while I have you here, is that there have been some recent articles about the backups at our Nation's ports, and especially stories about ships that are out at anchor outside of both the Port of L.A. and the Port of Long Beach. I can actually see them as I leave my house. I live right near Ocean Boulevard in Long Beach.

But we also have ships returning, reports of ships returning to Asia without agriculture. And Chairman DeFazio recently wrote with the leadership, bipartisan leadership of the Transportation and Infrastructure Committee, sent a letter to the Federal Maritime Commission to express our concern about ocean carriers prioritizing foreign goods and leaving limited shipping capacity for U.S. exports.

So the backlog, what is taking place potentially, we are not sure. Do you have any recommendations, both short term and long term, to help address this tremendous surge of imports and what that has done in terms of our national supply chain and how we are going to deal with this tremendous rise in imports?

Mr. Seroka?

Mr. SEROKA. Thank you, Congressman Lowenthal. Always good to see you.

Yes, we do have some specific recommendations. These past months we have seen an import buying surge that has been pandemic induced. Internet sales have doubled over the last year, where it took 10 years to reach only 10 percent of national retail sales.

So we have seen the change in the American consumer, and that probably won't go away any time soon. But we are looking into the future for when the country begins to open up and we start spending discretionary income on services.

But to answer your question directly, number one, we must vaccinate all of our portworkers. There are about 100,000 folks that come to work at this port complex every day and we have only begun to scratch the surface. And these, in addition to dockworkers, are truck drivers, warehouse workers, terminal operators, construction and maintenance teams across the board.

So much more has to be done in this area to get inventory and qualifications supported to get shots in these arms.

Secondly, we have to ask our importers to pick up their cargo. Warehouses from the shores of the Pacific to the Mojave Desert, more than 2 billion square feet of space, are overflowing with cargo, partially because we don't have enough workers on the job.

But more importantly, we have to push this cargo through the system to the interior of the United States, and that starts with importers of record picking up their cargo here at the Port of Los Angeles.

And lastly, we have to segment our cargo to make sure that the products that are moving out to the Inland Empire can be done with lower times of congestion and traffic on our roadways and freeways. We have to be more succinct.

And all of that is accomplished by increasing participation in our Nation's only port community system, the Port Optimizer. Sharing data across stakeholder groups and participants of private and public sector both are the answer to times like this when port congestion slows down.

But in finally answering this question, sir, what we also have seen is a 50-percent increase in productivity of our vessel work. Prepandemic, we were averaging about 10 ships at the Port of Los Angeles every day. Today, we are averaging 15 ships. And on this very Tuesday we have 17 containerships in port that our longshoremen and longshorewomen are working around the clock to get the cargo out to U.S. consumers.

Mr. LOWENTHAL. Thank you for that very complete answer and understanding of where our ports are today, especially the major ports of the west coast.

Thank you. And I yield back.

Mrs. NAPOLITANO. Thank you, Mr. Lowenthal.

And we will now proceed to Mr. Weber.

You may proceed.

Mr. WEBER. Thank you, Madam Chair. Lots of good stuff here today, lots of good stuff.

One of the questions I have for the whole panel is that resilience has been suggested that it equals natural or nonstructural solutions to future risk. But it is clear that resilience can mean a whole lot more than that and it is basically not what we would call a one-size-fits-all approach.

So I will give this over to the panel. I am going to ask a couple of things. Well, first of all, let's just do it this way. Talk about this, and then I will ask you a followup question. So we will start with whoever wants to start with that question.

It is not a one-size approach. Do we work with local communities? Is it critical that we work with local communities? Do we have project sponsors? Do we bring them all together? I know our great chairwoman from the Committee on Science, Space, and Technology talked about having meetings in Texas with flood people.

Can we do that with the resilience with local communities? What do you all say about that approach?

Mr. BERGINNIS. Yes, sir. So resilience, as you said it, is not a one-size-fits-all approach, and it really is all the tools in the toolbox. It can certainly be nonstructural and nature based, but it also can

be structures and it can be—and protecting buildings and critical infrastructure and so on.

The importance, I think, of having that dialogue with the community is to exchange understanding, because what we are seeing in resilience is there is a lot of active research going on. There are new technologies being applied. There are new techniques of resilience being invented. And we need to understand all the resilience techniques so that we can apply the right tools to a given community situation.

Mr. WEBER. Well, I will go on to the next witness, then I will ask a followup question. Who wants to weigh in?

Mr. STRICKLER. I also think, sir, that we need—

Mr. WEBER. [Inaudible.]

Mr. STRICKLER. All right. Sorry about that.

Congressman, I appreciate your question.

In Virginia we have a lot of different coastal environments and inland environments, and we know that there are certain critical infrastructure assets and certain communities that the only option is to shelter those in place.

And we are going to have to have massive engineering solutions in order to protect those assets and protect the local and regional economies and the communities that they support.

At the same time, there is not enough money and there will never be enough money to pour enough concrete for us to armor our whole shoreline, nor would we want to.

And that is why Virginia is actually building its approach to coastal resilience after the Texas Coastal Resiliency Master Plan. There were a lot of great ideas in that plan, and we really like the regional approach, we really like the balance and the ranking of projects, both green infrastructure solutions and green-gray concepts as well as traditional harden projects that we need to make coasts more resilient.

Mr. WEBER. All right.

And, Mr. Seroka, I think you wanted to weigh in.

Mr. SEROKA. Yes, Congressman.

In addition to what some of us traditionally talk about with respect to resilience on energy and our environmental stewardship, two other pieces also come to mind for consideration of this body.

One is cyber resilience. As we look at the threats that we have received, they have doubled now since the beginning of the pandemic to an average of 40 million cyber intrusion attempts per month here at the Nation's largest port.

And lastly, we need labor resilience as well. We need to make sure that we can build, skill, and train the next generation of worker in and around the supply chain, from the docks, to the administrators, to those who will design, develop, and build our Nation's infrastructure.

Mr. WEBER. All right. I am running out of time so I want to go back to the three of you.

I want a grade. How are we doing on getting that word out, resilience, working with local communities, and moving that process forward? Are we getting a report card? Is it a C, a D-minus, a B-minus?

What do you think, Mr. Seroka. I will come back to you.

Mr. SEROKA. C-minus at this point. We need more traction, and it begins at the Federal level to help set the tone for us at the local level.

Mr. WEBER. All right.

Mr. Berginnis, how about you?

Mr. BERGINNIS. I would give about the same grade. You hear excellent examples like in Virginia right now. But those examples are too few, and the need is too great. We have got to accelerate it.

Mr. WEBER. Mr. Strickler, did you ever have a teacher that graded on the curve? I am hoping you did.

Mr. STRICKLER. I did. Yes, sir.

But I would tend to agree, we are a little below average here. It is off the board. We have some communities in Virginia that are out in front, Virginia Beach, Norfolk, with robust plans. Many, many other communities that lack the capacity but that are nowhere right now.

Mr. WEBER. I appreciate that.

Madam Chair, thank for your indulgence. I yield back.

Mrs. NAPOLITANO. Thank you, Mr. Weber, for your part in it.

Next we have Mr. Pappas.

You may proceed.

Mr. Pappas?

If not, we move on to Mr. Carbajal.

Mr. CARBAJAL. Thank you, Madam Chair.

My question is to Mr. Berginnis.

In 2019, one of your colleagues, Mr. Pineda, came before our subcommittee and talked about the need for the Army Corps of Engineers to take an enhanced role in providing technical assistance to help local sponsors move forward with their projects and incorporate resiliency into their planning.

As a former local government official, this was something that really resonated with me. And I was proud to work with Chairwoman Napolitano and Chairman DeFazio to include a provision in the 2020 WRDA bill, under section 111, to allow the Corps to provide technical assistance to non-Federal partners for resiliency planning.

How can we build on this provision to ensure we are achieving our goal of building back better and promoting more resilient infrastructure in order to withstand the threat of climate change?

Mr. BERGINNIS. I think the primary way you could do this—and this was in Ricardo's testimony and it is in our testimony even today—is to better operationalize that through technical assistance that is not associated with specific projects.

Again, the demand is great out there. I have worked with the NFIP and I know, for instance, there are over 22,000 NFIP communities. There is a tremendous need out there, as was stated just earlier, in the Commonwealth of Virginia. There are some areas that are leading the Nation and some areas that haven't started.

So we need to make the ability to provide that resilience planning assistance, we need to make that something where literally that local official could call their local district who might be trusted and say, "You know what? Can you come to a meeting with our planning team? Can you do this?" And they can do that without having to deal with charging it to a specific project.

Mr. CARBAJAL. Thank you.

Mr. Berginnis, to continue with you, I also want to ask about the importance of including resilience and natural infrastructure in how the Army Corps calculates benefit-cost ratio.

As you know, the Army Corps of Engineers has a significant backlog. In my district alone, the Mission Creek Flood Control Project has been in the works since the late 1960s. However, my community has struggled to receive Federal construction dollars despite the numerous benefits the project would provide.

Do you have any suggestions as to how Congress can help tackle this problem to ensure that we are accounting for the numerous environmental benefits a project may bring?

Mr. BERGINNIS. Yes, sir, Congressman.

I think one of the things, and it was a comment made earlier but really resonated with me, that a reason to address and evaluate the existing backlog is to ensure that we are accounting for all the environmental benefits in the way we know how to today. That backlog has spanned—I believe the 2020 WRDA put a cutoff at 1985.

But I just think about all the advances even in the last 10 years when it comes to being able to quantify and to calculate environmental benefits and how many of those projects are “pre” that time where we might need to go back and recalculate those.

And I suspect that in the case of Mission Creek, if all that backlog was evaluated and you had multiple other environmental benefits, that would put it higher in the queue.

Mr. CARBAJAL. Thank you.

Well, can you elaborate a little bit more on that? Because that has been the challenge, coming up with a new framework or an additional value priority that would raise those environmental benefits.

How specifically might we be able to do that?

Mr. BERGINNIS. Well, I think in one way the 2020 WRDA started that by providing some congressional direction in evaluating and reevaluating the backlog.

But then I think the second way is really bringing to fruition the PR&G, where the PR&G is really that vehicle, I think, to account for those newest approaches in counting environmental benefits and making sure those are part of projects.

So, again, the 2020 WRDA did that, addressed, I think, that issue in two important ways.

Mr. CARBAJAL. Great. Thank you.

And lastly, Mr. Seroka, I have limited time, but I want to ask my question.

Our subcommittee, under Chairwoman Napolitano and Chairman DeFazio, has prioritized fair and equitable distributions of the Harbor Maintenance Trust Fund. This is particularly important for ports throughout California and in my district.

Can you discuss the priorities you think would be helpful to ports throughout the country as many are also under additional stress due to the COVID pandemic?

Mr. SEROKA. Yes, Congressman.

What we see is the Port of Los Angeles as a jobs multiplier. As we build and develop this port, it makes us more competitive to

move more cargo, passenger ships, and bulk products, which also create more jobs for those in and around the port complex and the supply chain.

Part of our STEM outreach is to get kids in the younger brackets of school, train them up, and make them aware of what opportunities may exist here at this port and beyond.

So we believe that equitable distribution of work carries on to our communities as well.

Mr. CARBAJAL. Thank you very much.

Madam Chair, I yield back.

Mrs. NAPOLITANO. Thank you, Mr. Carbajal, for your comments. And you went over a little time, but that is OK.

Next, we have Mr. Garret Graves.

Mr. Graves you may proceed.

Mr. GRAVES OF LOUISIANA. Thank you, Madam Chair. It is nice to see you again.

So my first question is for Mr. Berginnis.

The Disaster Recovery Reform Act made some modifications to the utilization of HMGP funds to allow for those funds to be used for authorized Corps of Engineers projects, which, as we know, are the most scrutinized projects in the Federal Government.

I understand that NEMA opposed that, and I am really curious as to why you would oppose commingling funds that were available to advance whatever priorities a State decides are the top priorities.

Mr. BERGINNIS. Just one thing. We are not NEMA. We are ASFPM. So I just wanted to say that for the record.

Mr. GRAVES OF LOUISIANA. Excuse me. That was my bad. I was thinking of our hearing last week. I apologize. Yes, you all, you guys did. So could you please explain?

Mr. BERGINNIS. So what we know with HMGP in every State is that we have an oversubscribed program. And so what that means is, even in those States where there is a backlog of Corps projects, we also have a huge demand for the traditional things that HMGP has funded, primarily a lot of the nonstructural type activities, as well as some of the small structural activities.

And so our concern and our opposition came from the standpoint that you have an authority through WRDA and through the Corps of Engineers to fund those kinds of projects. And we are just trying to still address the need that exists out there in HMGP for those other preferences within those States.

Mr. GRAVES OF LOUISIANA. Thank you. I appreciate the answer. As a former practitioner on these types of projects and having spent many years on the ground addressing this, I couldn't disagree more with the position. I think that it is a myopic view.

And where this decision needs to be made, as we discussed in our hearing last week where NEMA actually was, it was discussing how there are so many different funding sources and we need to allow the States to prioritize what is most important to them, regardless of the funding stream.

And we shouldn't have all these disjointed funding streams. If you get a better return on investment, whether it is green, gray, whatever it is, States should be able to make the decision to

prioritize those dollars in that direction and commingling the funds.

Similarly, Corps of Engineers has a backlog of, by some estimates, \$95 billion, which I think would probably exceed some of the other needs in other programs.

But let me pivot over.

Mr. Strickler, it is nice to see you again. Mr. Secretary, I want to verify that you are under oath right now. I am just kidding. Don't answer that.

Mr. STRICKLER. Yes, sir.

Mr. GRAVES OF LOUISIANA. No, seriously, I am curious, you talked about some of the needs for the State of Virginia in taking on this very audacious goal of developing a resiliency program, a coastal master plan.

In regard to implementation, looking across the Federal Government, which program do you see as being most efficient in actually delivering results?

Mr. STRICKLER. So, Congressman Graves, it is good to see you again. And I just want to ask, are you sure you don't want to ask me about red snapper? With Congressmen Lowenthal and Huffman here, I thought maybe we would get into that today.

But, anyway, no, it is a great question. And to your first question, aligning all of these programs is important. You have got Hazard Mitigation Grant Program, you have got Community Development Block Grant resilience program, you have got the direct spending from the Corps, you have got the NOAA coastal programs. All of these are important.

And aligning those in a way that States can leverage all that money together, to your point, particularly States that have these well thought out resilience plans, in a way that we can prioritize that funding to meet those needs that have been identified by States in consultation with the communities. Also our Federal partners.

So I hate to give you a nonanswer, but there are many different programs we would like to leverage. And the point I guess I want to make is that we want to try to align all of those to get the maximum benefit.

Mr. GRAVES OF LOUISIANA. Thank you. I appreciate the response.

Look, I just want to make note that we in Louisiana, unfortunately, as you know, as a result of Hurricane Katrina, we had some really brutal lessons learned there. And we are probably 15 years or so ahead. We have dedicated billions of dollars in State funds, as I think you indicated, to our coastal program.

I really would encourage you to look at implementation issues problems because it is going to be one thing to have a plan, but if you can't implement it, it is going to be another pretty big problem.

Ms. Bucci, just very quickly, could you quickly address your thoughts on implementation of Corps of Engineers projects and perhaps efficiencies that could be incorporated?

Ms. BUCCI. Well, I think that it is very important that the industry gets full and efficient funding in terms of the projects that are out there, so that we are getting projects done in years instead of decades.

So with this new 65-35 cost change, we need to make sure we use the entire trust fund balance and get all the projects. We are going to have some openings in the next couple years as Lower Mon gets done and Chickamauga and Kentucky Lock and Dam shortly thereafter.

We want to make sure that we keep moving down the capital development strategy, the 15 projects, and just get them done in a matter of years instead of decades. So full and efficient funding is probably the best thing they need to do.

Mr. GRAVES OF LOUISIANA. Great, great. Thank you.

Madam Chair, I want to thank you for the extra few seconds there.

And I want to make note, all these people keep talking about Texas. Louisiana has the best coastal master plan in the country.

Dr. Piehler, check it out.

Mrs. NAPOLITANO. Thank you very much, Mr. Graves.

Now we will proceed to Ms. Norton.

You are recognized.

Ms. NORTON. Thank you very much, Madam Chair, for this very important hearing.

I have got several questions. Let's see how many of them I can get in.

First for Ms. Bucci. I am interested in our waterways, because I live here of course, I represent the District, and the whole National Capital region is full of congestion.

What do you see as the biggest roadblock to achieving the goal of using the waterways to reduce congestion, given your experience with our inland waterways system?

Ms. BUCCI. Well, first of all, I think you are absolutely right. We need to find a way to get those domestic trailers and international trailers on the international waterways.

It is going to take a little bit of infrastructure at different terminals. A lot of the inland river terminals are only used to handling bulk.

We are working closely. MARAD is very proactive on this. And if we can find freight that is not moving on the rivers, we can get into different programs with some Federal assistance in handling container or palletized cargo at different terminals.

I think it is important to look at the distances that the containers travel. A lot of times people have talked about container on barge and going from Pittsburgh to New Orleans, which is a long distance and a long travel time, that maybe you shorten and go from Pittsburgh to Morgantown, West Virginia, or East Liverpool, Ohio, where you are taking it off local highways and shorter distances and the freight is arriving a little more efficiently.

But I think it is going to take some training and the proper equipment and obviously educating the public that handle these containers and these shippers that there is a mode that is underutilized in our system that can take trucks off the road and save some of the highway construction costs.

Ms. NORTON. Thank you.

Mr. Strickler, you are the secretary of natural resources in Virginia, so this question is for you. It is about regional cooperation to address flooding and resiliency.

Are there any ongoing regional efforts in the District and Maryland that you could highlight? If not, should there be?

Mr. STRICKLER. Congresswoman Norton, thank you for your question.

The answer is that we collaborate with Maryland and the District on a number of initiatives, particularly in transportation infrastructure.

Our biggest collaboration and an area in my secretariat that we are trying to build more resilience and more flood protection type activities into is the work that we do together under the Chesapeake Bay Program.

As you know, things like stormwater infrastructure, riparian buffers, restoration of wetlands and flood plains are as critical to water quality and habitat for bay species as they are to coastal resilience.

So I am actually the chair right now of the Principals' Staff Committee and Governor Northam is the chair of the Executive Council and we are working very closely with Mayor Bowser and others to try to build those priorities into the bay program work; and, importantly, build in a stronger acknowledgment of the challenges that we face because of climate change in general.

So, yes, we are working hard on all of that.

Ms. NORTON. Thank you for that answer.

Mr. Piehler, my friends on the other side seem to think that there is no financial cost to inaction, to failing to act on climate change. Of course we have seen in this region that is not true, because some of our Federal buildings have been damaged by flooding, including the National Archives.

In your testimony, you say your organization uses models that link environmental change to financial risk. I would love to hear more about that and how we can learn how that information could be used in practice, those models can be used in practice.

Mr. PIEHLER. Sure. I would be happy to provide more information.

So the example that I am talking about today is around flooding in mostly coastal systems, but some of the inland systems in North Carolina, and thinking about ways to fully describe the impacts and the costs of those events.

And so I alluded to incorporating social science, which is really important, because the water alone doesn't tell the story of the impacts of flooding, you need to know what people are experiencing.

But the coupling of the financial models and the environmental systems is a great way when you have really dynamic systems.

We talked about hydropower a little bit earlier. That system has been applied to looking at environmental change that supplies the water to areas in and around hydropower facilities and the financial connections to the energy sector.

So it is, I think, a pretty portable system and can be applied to a range of different questions, but it is a really great direct connection between those financial systems, whether they be things like insurance or whether they be things like a private industry to a very variable environmental setting.

And so, clearly, flooding is something that has a lot of variability around it and is something that we really benefit from under-

standing both the natural side of it and then its connection to financial systems.

Ms. NORTON. Thank you, Madam Chair.

Thank you for that answer.

Mrs. NAPOLITANO. You are very welcome, Ms. Norton.

And last but not least, Mr. Katko, you may proceed.

Mr. KATKO. It is very good to see you again, my friend, Mrs. Napolitano.

And it is good to see everyone here on this hearing.

It is a very important topic for my area. Part of my district has the southern shore of Lake Ontario. And due to some policy changes in the previous administration we have experienced some catastrophic flooding over the last several years.

Mr. Berginnis, in your testimony you touch on the impact that resiliency measures in one community can have on the surrounding region. In my district, this may be even more complicated because resiliency measures deployed in Canada have to inform our response on Lake Ontario's southern shoreline, which includes part of my district.

Can you discuss why Federal leadership is important to addressing the issues throughout the Great Lakes? And what do you think can be done to promote a coordinated approach throughout our region?

Mr. BERGINNIS. Absolutely.

One of the philosophical underpinnings of a cooperative approach to flood plain management is Federal leadership, because Federal leadership then enables, it sends a signal to States and also to communities that this is the direction we need to be going, whether it is investments, whether it is programs, and those kinds of things.

And certainly in the Great Lakes. I have spent all my career in Great Lakes States, either in Ohio and Wisconsin. And I recall when the Great Lakes Compact was first conceived, I believe in the late 1990s or 2000s, and then having that bi-country coordination becomes important as well.

So it is one of those things we absolutely concur. And given, again, where your district is also, you essentially are dealing with a border of another country, it is absolutely critical.

Mr. KATKO. So what can be done, what can we do to make it a better process than we have right now? Is there something we can help you with in that regard?

Mr. BERGINNIS. Well, I think, in terms of Federal leadership, one of the things that can be strengthened and that has fallen off in recent years is Federal interagency coordination.

So you have interagency mechanisms like the Federal Interagency Floodplain Management Task Force, the Mitigation Framework Leadership Group, and also I think day one in President Biden's administration is the reinstatement of Executive Order 13690 on flood plain management. Each of those requires Federal agencies to work and to talk with each other.

And I have to say, it was difficult before COVID, and probably during COVID right now it is really difficult to foster interagency coordination.

So I think one thing that can be done and can be done rapidly is to be intentional in making sure our Federal agencies are coordinating and working with each other.

Mr. KATKO. All right. Great. I appreciate that.

Mr. Seroka, I appreciate that you discussed the importance of Great Lakes funding in your testimony. And as I brought up, my district has seen a significant shortfall in Federal resources for port and harbor maintenance in recent years, including for projects that were already underway. And the Port of Oswego, which is in my district, is a great example of that.

In your conversations with the other ports, how common are these problems? And do you expect WRDA 2020 will make significant strides in addressing them?

Mr. SEROKA. Yes, I do, for the following reasons. And good to see you, again, Congressman.

The framework, we believe, addresses the traditional dredge ports as well as respecting the needs of the emerging harbors, donor and energy ports, as well as the Great Lakes port system.

Mr. KATKO. OK. And, for example, my port, Oswego, we are simply trying to get the darn thing dredged so we can have bigger ships come in and it has been like pulling teeth. So is there something more that we can be doing using some of the help from WRDA 2020? Is there something else we should be doing to help them?

Mr. SEROKA. Yeah. I believe, and this is an aspiration, but moving forward we need a national freight strategy, including dedicated funding for multimodal infrastructure, investment in digital infrastructure and cyber, as well as clean technology and workforce development.

This is a great first step from the port community into what we need overall as a Nation to raise our level of competitiveness.

Mr. KATKO. All right. Thank you very much to the gentleman, and thank you all for your testimony.

And thank you, Mrs. Napolitano, for having this great hearing. And I yield back.

Mrs. NAPOLITANO. Thank you, Mr. Katko.

It is wonderful testimony. It brings up a lot of points that we need to ponder and make sure that we address in the future.

In closing, I ask unanimous consent to add into the record the statements by the National Wildlife Federation and the National Stone, Sand, and Gravel Association.

[The information follows:]

Statement of Melissa Samet, Senior Water Resources Counsel, National Wildlife Federation, Submitted for the Record by Hon. Grace F. Napolitano

Chair Napolitano, Ranking Member Rouzer, and Members of the Subcommittee, thank you for the opportunity to present this statement on the status of essential provisions enacted in the Water Resources Development Act of 2020.

The National Wildlife Federation is the nation's largest conservation education and advocacy organization with more than 6.3 million members and supporters, and affiliate conservation organizations in 53 states and territories. Our members represent the full spectrum of people who care deeply about wildlife: they are bird and wildlife watchers, hikers, gardeners, anglers, hunters, foresters, and farmers. The National Wildlife Federation has championed clean and healthy rivers and streams

since our founding in 1936. Conserving our wetlands, streams, rivers, and shorelines for wildlife and communities is at the core of our mission.

The National Wildlife Federation has extensive experience with all aspects of U.S. Army Corps of Engineers (Corps) planning, including ecosystem restoration, flood damage reduction, navigation, and reservoir operations. We have a long history working to advance large-scale ecosystem restoration efforts around the country that involve the Corps, including in the Everglades and Mississippi River Delta. The Federation has also derived substantial knowledge through working with organizations across the country to improve water resources projects and policies, including by leading the Water Protection Network which is a coalition of more than 250 local, regional, and national organizations working to ensure that America's water resources policies and projects are environmentally and economically sound.

In the Water Resources Development Act of 2020, Congress sent a very clear, bipartisan message: the Corps must shift its approach to project planning and management to improve the resilience of the nation's water resources, ensure resilient and sustainable protections for communities, and allow the nation's fish and wildlife to thrive. To advance this transformation, WRDA 2020 provided a critical array of tools and authorities to drive the development of smarter projects that will increase resilience and equitable outcomes.

The National Wildlife Federation urges Congress to ensure full and effective implementation of the full suite of WRDA 2020 resilience provisions, with a particular focus on the essential provisions highlighted in this statement. The Federation respectfully urges Congress to engage in robust oversight and provide the funding and resources needed to ensure swift and effective implementation of these essential provisions. We also urge this Committee to carefully oversee the Corps' compliance with the letter and spirit of the National Environmental Policy Act, Clean Water Act, Endangered Species Act, and Fish and Wildlife Coordination Act when planning, constructing, and operating projects. These laws provide essential safeguards for the nation's water resources and the public's ability to provide meaningful input into activities that can have a profound impact on their lives and livelihoods.

EFFECTIVE IMPLEMENTATION OF ESSENTIAL WRDA 2020 PLANNING IMPROVEMENT AND RESILIENCE PROVISIONS WILL MAKE COMMUNITIES SAFER AND ALLOW WILDLIFE TO THRIVE

The Water Resources Development Act of 2020 enacted a suite of planning reforms that collectively provide the tools and authorities needed to ensure that Corps planning addresses the nation's most pressing water resources needs, prioritize solutions for underserved communities, and improve the resilience of the nation's vital natural infrastructure—the rivers, streams, floodplains and wetlands that provide essential habitat for the nation's treasured fish and wildlife.

These provisions elevate consideration of nature's potential to improve our nation's resilience. They also level the playing field for use of natural infrastructure (also known as natural and nature-based solutions) to reduce flood and storm damages while protecting and restoring fish and wildlife habitat and providing vital co-benefits for communities. The diverse environmental benefits provided by sustainable and cost-effective natural infrastructure can be particularly valuable for underserved communities suffering from flooding and multiple other environmental assaults.

Protecting and investing in our natural infrastructure makes communities safer and more resilient by absorbing floodwaters, buffering storm surges, and giving rivers room to spread out without harming homes and businesses. Natural infrastructure reduces the need for new, often expensive structural flood projects, and provides an important extra line of defense when levees or other structures are required. Natural infrastructure also avoids unintended adverse impacts such as diverting floodwaters onto other communities and inducing development in high risk areas.

The value of natural systems for protecting communities is well recognized, and evidence of its effectiveness in reducing flood and storm damages continues to mount as highlighted in the National Wildlife Federation's report on The Protective

Value of Nature¹ and our November 2019 Testimony² before this subcommittee on promoting the resilience of the nation's water resources. As aptly noted by the Reinsurance Association of America: "One cannot overstate the value of preserving our natural systems for the protection of people and property from catastrophic events."³

For example, wetlands prevented \$625 million in flood damages in the 12 coastal states affected by Hurricane Sandy, and reduced damages by 20 to 30 percent in the four states with the greatest wetland coverage.⁴ Coastal wetlands reduced storm surge in some New Orleans neighborhoods by two to three feet during Hurricane Katrina, and levees with wetland buffers had a much greater chance of surviving Katrina's fury than levees without wetland buffers.⁵ Natural infrastructure also has the significant added benefits of being self-sustaining and avoiding the risk of catastrophic structural failures.

In addition, natural infrastructure is also often more cost-effective than structural measures. A recent study documents that using natural infrastructure solutions for reducing coastal flood risks in Texas, Louisiana, Mississippi, and Florida would have a benefit-cost ratio of 3.5 compared to just 0.26 for levees and dikes. Restoring wetlands in this region could prevent \$18.2 billion in losses while costing just \$2 billion to carry out.⁶

ESSENTIAL PLANNING IMPROVEMENTS AND RESILIENCE PROVISIONS

Full and effective implementation of the essential WRDA 2020 provisions highlighted below will improve the planning process for all Corps projects, increase the resilience of the nation's water resources including through increased use of natural infrastructure where appropriate, and achieve equitable outcomes for vulnerable communities.

The Federation respectfully urges Congress to engage in robust oversight of the Corps' implementation of these essential provisions and to provide the funding and resources needed to ensure swift and effective implementation. Congress should clarify that compliance with the planning and study directives in these sections is mandatory, and is not dependent on the Corps' receipt of line item funding and is not subject to any prohibition on new starts. To ensure prompt advancement of equitable outcomes, Congress should also exempt the important Section 118 pilot programs and Section 119 program from any limitations on new starts. Key recommendations for the Corps' implementation of these essential provisions are outlined below.

Sec. 110—Implementation of Water Resources Principles and Requirements

Section 110 directs the Corps to issue final agency procedures for the Principles, Requirements, and Guidelines (PR&G) within 180 days and to provide regular updates to those procedures. In developing and updating these procedures, the Corps must provide an opportunity for public comment and input. Effective implementation of the PR&G will produce smarter, more resilient, and more environmentally protective water resources projects.

Congress directed development of the PR&G in the Water Resources Development Act of 2007, which was enacted with overwhelming bipartisan support. The PR&G do not dictate any particular project outcome. Instead, they identify the full suite

¹Glick, P., E. Powell, S. Schlesinger, J. Ritter, B.A. Stein, and A. Fuller. 2020. *The Protective Value of Nature: A Review of the Effectiveness of Natural Infrastructure for Hazard Risk Reduction*. Washington, DC: National Wildlife Federation (available at www.nwf.org/protective-value-of-nature).

²Testimony of the National Wildlife Federation, Melissa Samet, Senior Water Resources Counsel, before the Subcommittee on Water Resources and Environment of the U.S. House of Representatives Committee on Transportation and Infrastructure regarding "*Concepts for the Next Water Resources Development Act: Promoting Resiliency of our Nation's Water Resources Infrastructure*", November 19, 2019 (available at <https://transportation.house.gov/imo/media/doc/Samet%20Testimony.pdf>).

³Restore America's Estuaries, *Jobs & Dollars BIG RETURNS from coastal habitat restoration* (September 14, 2011) (http://www.estuaries.org/images/81103-RAE_17_FINAL_web.pdf).

⁴Narayan, S., Beck, M.B., Wilson, P., et al., *The Value of Coastal Wetlands for Flood Damage Reduction in the Northeastern USA*. *Scientific Reports* 7, Article number 9463 (2017), doi:10.1038/s41598-017-09269-z (available at <https://www.nature.com/articles/s41598-017-09269-z>).

⁵Bob Marshall, *Studies abound on why the levees failed. But researchers point out that some levees held fast because wetlands worked as buffers during Katrina's storm surge*, *The New Orleans Times-Picayune* (March 23, 2006).

⁶Borja G. Reguero et al., "Comparing the Cost Effectiveness of Nature-Based and Coastal Adaptation: A Case Study from the Gulf Coast of the United States," *PLoS ONE* 13, no. 4 (April 11, 2018), <https://doi.org/10.1371/journal.pone.0192132>.

of project costs and benefits that must be accounted for when the Corps plans a water resources project, including the benefits of a healthy environment. The PR&G also direct a full and careful consideration of a project's compliance with the National Water Resources Planning Policy which was also established by Congress in WRDA 2007.⁷ The PR&G elevate consideration of nature's potential to address problems, which is a preferred approach where possible because it provides other vital co-benefits for communities, protects fish and wildlife habitat, and avoids unintended adverse impacts such as diverting floodwaters onto other communities and inducing development in high risk areas. In the absence of the final agency procedures, the Corps continues to rely on outdated planning guidelines that have not been updated in 38 years.⁸

To effectively implement the PR&G, the Corps' final agency procedures should adopt clear criteria to drive development and selection of plans that: (1) satisfy the Congressionally established National Water Resources Planning Policy; (2) advance national priorities including increasing resilience to more frequent and intense floods, storms, and droughts; (3) increase equitable outcomes; and (4) avoid environmental harm. For example, the procedures could direct development and full consideration of an alternative that protects and restores the functions of natural systems (a National Water Resources Planning Policy objective) to address the identified problem. Such an approach would also facilitate compliance with the Clean Water Act, which requires use of the least environmentally damaging practicable alternative, and the nation's other critically important environmental laws.

The National Wildlife Federation encourages swift implementation of Section 110. However, the development of agency procedures that will effectively implement the PR&G will require a thorough and thoughtful process that includes a robust opportunity for input from resource agencies, outside experts, and the public. The Corps should also carefully coordinate the development of their agency procedures with the Council on Environmental Quality. Undertaking this thoughtful process is essential, even if that ultimately requires extending the deadline beyond 180 days.

Sec. 115—Flood Protection Projects

Section 115 incentivizes use of natural and nature-based measures and helps ensure full evaluation of such measures by placing them on a level playing field with nonstructural measures. This provision builds on section 1149(c) of WRDA 2018, which directs the Corps to consider the use of natural infrastructure, alone or in combination with structural measures, whenever those solutions "are practicable."⁹

Section 115(a) clarifies that natural infrastructure is one of the nonstructural measures to be considered under 33 U.S.C. 701b-11(a). To ensure effective implementation of section 115(a), the Corps should issue implementing regulations (and amend existing planning rules and manuals) that explicitly direct the consideration of natural and nature-based features in the nonstructural plan that must be carried through the final array of alternatives for flood and storm risk management studies.¹⁰ The Corps should also provide comprehensive training to planning staff on how to develop and assess natural and nature-based measures, the documented effectiveness of such measures, and the cost-effectiveness of such measures.

Section 115(b) clarifies that the cost-share for natural and nature-based features is the same as for non-structural flood and storm damage reduction measures, 65% Federal and 35% non-Federal. To ensure effective implementation of section 115(b), the Corps should undertake a robust outreach effort to inform nonfederal sponsors, stakeholders, and the public about this important cost-share clarification and the requirement to fully consider the use of natural and nature-based measures in flood and storm damage reduction studies. The Corps should also establish a formal proc-

⁷The Congressionally established National Water Resources Planning Policy states: "It is the policy of the United States that all water resources projects should reflect national priorities, encourage economic development, and protect the environment by—(1) seeking to maximize sustainable economic development; (2) seeking to avoid the unwise use of floodplains and flood-prone areas and minimizing adverse impacts and vulnerabilities in any case in which a floodplain or flood-prone area must be used; and (3) protecting and restoring the functions of natural systems and mitigating any unavoidable damage to natural systems." 42 USC 1962-3.

⁸The Corps continues to rely on the 1983 "Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies" which direct the Corps to focus solely on maximizing national economic development benefits when planning water resources projects. These 1983 Principles and Guidelines prohibit the Corps from considering all economic and environmental values and impacts, and severely limit the Corps' ability to select a less environmentally damaging alternative or one that could contribute to the national interest in ways other than economic development.

⁹America's Water Infrastructure Act of 2018, Pub. Law 115-270, § 1149(c).

¹⁰See, e.g., 33 U.S.C. 701b-11; January 5, 2021 USACE Policy Directive—Comprehensive Documentation of Benefits in Decision Document.

ess for notifying future non-federal sponsors and study partners about these requirements.

Sec. 118—Pilot Programs on the Formulation of Corps of Engineers Projects in Rural Communities and Economically Disadvantaged Communities

Section 118 directs the Corps to establish two pilot programs within 180 days to evaluate opportunities to reduce flood, hurricane, and storm risks for economically disadvantaged and rural communities. These pilot programs provide a critical opportunity for advancing equitable outcomes by increasing the resilience of vulnerable communities.

The Corps should prioritize implementation of the Section 118(b) Pilot Program, request robust funding to implement that program, and ensure that Corps planners have the tools and resources they need to develop and evaluate effective and self-sustaining natural and nature-based solutions that will protect the community while also providing other vital co-benefits to residents. Section 118(b) establishes a Pilot Program for Economically Disadvantaged Communities through which the Corps is to select 10 studies to be carried out at full Federal expense to address flooding, hurricane, or storm damages that have a disproportionate impact on a rural community, a minority community, or an Indian Tribe. These studies are required to incorporate significant use of natural or nature based features or a combination of such features to the maximum extent practical.

The Corps should prioritize implementation of the Section 118(c) Pilot Program, request robust funding to implement that program, and ensure full consideration and incorporation of natural and nature-based features into projects recommended under this Pilot Program. Section 118(c) establishes a Pilot Program for Rural and Economically Disadvantaged Communities through which the Corps may make a recommendation on up to 10 flood or storm damage reduction projects without demonstrating that the project is justified solely by national economic development benefits for economically disadvantaged or rural communities whose long-term life safety, economic viability, and environmental sustainability would be threatened without the project.

Sec. 111—Resiliency Planning Assistance

Section 111 directs the Corps to prioritize resiliency planning assistance to economically disadvantaged communities and communities subject to repetitive flooding (via 33 U.S.C. 709a), and emphasizes the need for the Corps to provide technical assistance to non-Federal interests for greater resiliency planning. This provision prioritizes critically important resiliency planning assistance to communities most in need.

The Corps should ensure that the planning assistance staff have the training and resources they need to provide effective technical assistance on resiliency planning, which should prioritize development and consideration of self-sustaining natural and nature-based solutions that will protect communities while also providing other vital co-benefits. The Corps should work with the Federal Emergency Management Agency and others to identify communities that could benefit from resiliency planning, and should develop strategies for effectively educating those communities about the availability of resiliency planning technical assistance. The Corps should also consider a communities' ability to pay in establishing the cost to a community for obtaining these services.

Sec. 112—Project Consultation

Section 112 requires the Corps to update its policies on environmental justice considerations; directs the Corps to strengthen its Tribal consultation requirements; and directs the Corps to promote meaningful involvement with minority communities, economically disadvantaged communities, and Indian Tribes in carrying out water resources development projects. This section also requires the Corps to submit long overdue reports on: (a) "any potential disproportionate and adverse health or environmental effects of programs, policies, and activities of the Corps of Engineers related to water resources development projects on minority communities, low-income communities, rural communities, and Indian Tribes (required by WRDA 2018 § 1214); and (b) the "results of a review by the Secretary of existing policies, regulations, and guidance related to consultation with Indian tribes on water resources development projects or other activities that require the approval of, or the issuance of a permit by, the Secretary and that may have an impact on tribal cultural or natural resources" (required by WRDA 2016 § 1120(a)(3)).

The Corps should prioritize this important work that is essential for developing and implementing projects that address the needs and priorities of minority communities, economically disadvantaged communities and Indian Tribes. The Corps should work with Tribes, state and local governments, community groups, and

NGOs to develop processes and procedures that will allow the Corps to effectively and authentically engage with Tribes and communities. The Corps should also coordinate with the Environmental Protection Agency and other agencies that regularly work with Tribes and vulnerable communities to build on the lessons learned by those agencies. The Corps must invest the time, cultural respect, and regard required to build authentic relationships to learn from and engage Tribes, indigenous communities, communities of color, and economically disadvantaged communities.

Sec. 113—Review of Resiliency Assessments

Section 113 requires the Corps to update existing planning guidance related to sea level rise based on the best available, peer-reviewed science, in coordination with Federal and state agencies within 180 days. It also reiterates the Corps' discretion to consider benefits accrued over time as a result of sea level rise, and when requested by the non-Federal interest, requires the Secretary to consider whether the need for the project is predicated upon or exacerbated by conditions related to sea level rise.

The Corps should prioritize this update to its sea level planning guidance, which is fundamental to developing and operating effective and resilient projects that are located in, or affect, coastal areas. In carrying out this update, the Corps should also engage with climate experts from academia and the NGO community, in addition to experts in other federal and state agencies.

Sec. 116—Feasibility Studies; Review of Natural and Nature-Based Features

Section 116 requires each feasibility study for a flood or storm damage reduction project to include a summary of: (1) any natural or nature-based feature alternatives considered, including their long-term costs and benefits; and (2) if such alternatives are not included in the recommended plan, an explanation of why they were not included in the recommended plan.

The Assistant Secretary of the Army (Civil Works) and the Chief of Engineers should ensure strict compliance with Section 116, and require that the Section 116 summary clearly describes the flood or storm damage reduction benefits and the quantified and unquantified co-benefits that would have been provided by a rejected natural or nature-based feature alternative.

Sec. 119—Permanent Measures to Reduce Emergency Flood Fighting Needs for Communities Subject to Repetitive Flooding

Section 119 provides new authority to study, design, and construct water resources projects for communities that have experienced repetitive flooding events and have received emergency flood fighting assistance under the P.L. 84-99 program. Such projects are to incorporate significant use of natural or nature based features to the maximum extent practical. The maximum Federal share for a project planned under this section is \$17.5 million, and the Corps is required to consider a community's ability to pay in determining whether to require a non-Federal cost share.

The Corps should prioritize implementation of Section 119, request robust funding to implement that program, and ensure that Corps planners have the tools and resources they need to develop effective and self-sustaining natural and nature-based features, including levee setbacks.

Sec. 123—Review of Corps of Engineers Assets

Section 123 directs the Corps to develop an inventory of projects: (1) which are no longer necessary for the Corps' mission responsibilities; (2) where long-term cost savings or increased resiliency could be achieved through incorporation of natural or nature-based features, or (3) which no longer meet the authorized purposes due to deferred maintenance requirements. This assessment must be completed within 18 months.

The Corps should prioritize implementation of the Section 123, which will provide information on opportunities to increase the resiliency of the nation's water resources, restore the environment, and save taxpayer dollars. In developing this inventory, the Corps should also identify projects that could be re-operated (e.g., through changes to reservoir water control manuals or changes to lock and dam operation) to increase resiliency and allow wildlife to thrive.

Sec. 125—Beneficial Use of Dredged Material; Dredged Material Management Plans

Section 125 facilitates strategic use of clean and appropriately sourced dredged materials to maximize environmentally sound flood and storm damage reduction measures by: (1) establishing a national policy to maximize the beneficial use of material obtained from Corps projects; (2) increasing the number of authorized beneficial use demonstration projects and prioritizing projects in economically disadvan-

tagged communities; (3) improving assessment of the “federal standard” by requiring the Corps to calculate environmental benefits of the beneficial use; (4) directing the Corps to develop five-year regional dredged material management plans; and (5) emphasizing greater coordination across the Corps’ dredging contracts.

This provision provides an important opportunity for facilitating vital ecological restoration in key regions, including the Mississippi River Delta where lack of sufficient sediment transport is severely aggravating coastal wetland losses. The Corps should prioritize development of the required regional dredged material management plans, improvements to assessing the federal standard, and prioritization of projects in economically disadvantaged communities. The Corps should also establish formal sidebars to beneficial reuse projects to protect public safety and the environment, including requiring that the sediments being beneficially reused are uncontaminated and fully compatible with the restoration site and that the sediments are being used for a sustainable and legally-compliant restoration project.¹¹

Sec. 160—Definition of Economically Disadvantaged Community

Section 160 directs the Corps to define the term ‘economically-disadvantaged community’ for purposes of this Act within 180 days and provide for public notice and comment on this definition.

The Corps should prioritize this important work that is essential for developing and implementing projects that address the needs and priorities of economically disadvantaged communities. The Corps should work with Tribes, state and local governments, academia, community groups, and NGOs to ensure robust public input into this definition. The Corps should also carefully coordinate with the Council on Environmental Quality and Environmental Protection Agency in developing this definition to advance alignment with definitions established for other federal programs as appropriate.

Sec. 301—Deauthorization of Inactive Projects

Section 301 establishes a unified process for the deauthorization of \$10 billion in antiquated or inactive water resources development projects. This provision will help ensure that limited taxpayer resources are not spent on water resources projects that are no longer needed; do not make sense in light of current conditions, and modern science and resource management; or would undermine the resilience of the nation’s water resources, communities, and wildlife.

The Assistant Secretary of the Army (Civil Works) and Chief of Engineers should ensure full compliance with Section 301, including the important restudy provisions in Section 301(g). The Corps’ implementing guidance for Section 301(g) should ensure reevaluation of projects where construction has not taken place for 20 years, even if minor construction had been initiated before that date.

CONCLUSION

The National Wildlife Federation appreciates the Committee’s commitment to improving Corps planning to increase resilience and protect and restore the nation’s vital water resources. We respectfully urge Congress to carry out robust oversight and provide the funding and resources needed to swiftly and effectively implement the essential planning improvement and resilience provisions highlighted in this statement. The National Wildlife Federation is convinced that effective implementation of these provisions will make communities safer and allow the nation’s treasured wildlife to thrive.

¹¹Adverse impacts from beneficial reuse can include: re-suspending significant quantities of toxic sediments that harm people and wildlife, burying vital fish and wildlife habitat by placing sediment in an inappropriate location, harming fish and wildlife habitat by reusing sediments that are incompatible with the sensitive habitats upon which they are placed, and causing significant adverse impacts at the project providing the sediment source.

Letter of March 23, 2021, from Michael W. Johnson, President and CEO, National Stone, Sand, and Gravel Association, Submitted for the Record by Hon. Grace F. Napolitano

MARCH 23, 2021.

Hon. GRACE NAPOLITANO,
Chairwoman,
House Committee on Transportation and Infrastructure, Subcommittee on Water Resources and Environment, 1610 Longworth House Office Building, Washington, DC 20515.

Hon. DAVID ROUZER,
Ranking Member,
House Committee on Transportation and Infrastructure, Subcommittee on Water Resources and Environment, 2439 Rayburn House Office Building, Washington, DC 20515.

DEAR CHAIRWOMAN NAPOLITANO AND RANKING MEMBER ROUZER,

On behalf of the National Stone, Sand & Gravel Association (NSSGA) and the aggregate industry we represent, we welcome today's hearing titled The Water Resources Development Act of 2020: Status of Essential Provisions. NSSGA supports efforts to improve and invest in all levels of our nation's infrastructure network, including critical navigable waterways that is essential to America's economic competitiveness.

NSSGA is the leading advocate for the aggregates industry, which provides the critical raw materials found in virtually every surface transportation project, including roads, highways, bridges, runways, pipelines and much more. Our membership represents more than 90 percent of the crushed stone and 70 percent of the sand and gravel produced annually in the United States. We were pleased with Congress' passage of the Water Resources Development Act of 2020 (WRDA) in its end-of-year package and the legislative success of opening the full resources available within the Harbor Maintenance Trust Fund (HMTF). Aggregate is a critical material used in various WRDA projects, including dredging, port enhancements, shoreline protection, flood mitigation and so much more. These projects are critical to our waterway infrastructure improvements and combating climate change across the country. Leveraging the HMTF to its full capacity, especially given the pandemic's impact on local economies, will help advance current WRDA-related projects and create thousands of jobs throughout the construction supply chain.

Given the success of WRDA 2020, we hope the 117th Congress continues its leadership on this issue by passing WRDA 2022 reauthorization on time and approve funding necessary for many vital Army Corps of Engineers projects. NSSGA looks forward to your Subcommittee's discussion on WRDA projects impacts past, present and future. Please consider our industry a resource as WRDA 2022 evolves.

Thank you for your time, and we look forward to partnering with your offices as we work to improve our nation's navigable waterway infrastructure network.

Sincerely,

MICHAEL W. JOHNSON, PRESIDENT AND CEO,
National Stone, Sand, and Gravel Association.

cc: Members of the Transportation and Infrastructure Committee

Mrs. NAPOLITANO. I also ask unanimous consent that the record of today's hearing remain open until such a time that witnesses have provided answers to any questions that may have been submitted to them in writing. And also unanimous consent that the record remain open for 15 days for any additional comments and information submitted by the Members or witnesses to be included in the record of today's hearing.

And without objection, so ordered.

I would very much like to thank Chairman DeFazio, Mr. Rouzer, and our respective staffs for a bipartisan effort on all the past WRDAs. This is marvelous, as you have heard the proceeds, the benefits, and the great work that is being done by the Corps.

I also want to thank all the witnesses for their valuable testimony and lots of insight that we need to look at.

I thank the Members for participating today. All Members that attended, I am very grateful to you.

So with that, without objection, if no other Members have anything to add, the committee stands adjourned.

Thank you and goodbye.

[Whereupon, at 1:04 p.m., the subcommittee was adjourned.]

SUBMISSIONS FOR THE RECORD

Prepared Statement of Hon. Sam Graves, a Representative in Congress from the State of Missouri, and Ranking Member, Committee on Transportation and Infrastructure

Thank you, Chair Napolitano and Ranking Member Rouzer, for holding this important hearing.

In each of the past four Congresses, this Committee has passed a bipartisan Water Resource Development Act (WRDA), and I look forward to working together to enact another WRDA into law in 2022.

America's inland water transportation networks and flood protection infrastructure are especially important to Missouri, where we experienced devastating floods in 2019—dangers that continue to threaten many of the same areas.

In fact, many are still working to recover and will be for some time to come.

That is why we worked to ensure WRDA 2020 directed the Corps to evaluate ways to reduce flood risks in the Lower Missouri River Basin and elsewhere.

WRDA 2020 also provides new authority for the construction of permanent flood control structures in communities that experience repetitive losses as a result of flood events.

Likewise, WRDA provisions streamlining the P.L. 84-99 program so flood control projects can be done efficiently and effectively will be critical to the survival of many communities.

Another provision included in WRDA ensures the Corps does not build any more Interception-Rearing Complexes (IRCs) on the Missouri River until they can prove these structures will not negatively impact critical navigation and flood protection for our many towns, farms, and businesses.

Many of the provisions included in WRDA 2020 will have positive impacts throughout the country and our economy, and I look forward to hearing about how the Corps is implementing these new measures.

I yield back.

Letter of March 23, 2021, from James D. Ogsbury, Executive Director, Western Governors' Association, Submitted for the Record by Hon. Sam Graves of Missouri

MARCH 23, 2021.

Hon. GRACE F. NAPOLITANO,
Chairman,

Subcommittee on Water Resources and Environment, Committee on Transportation and Infrastructure, House of Representatives, 2165 Rayburn House Office Building, Washington, DC 20515.

Hon. DAVID ROUZER,
Ranking Member,

Subcommittee on Water Resources and Environment, Committee on Transportation and Infrastructure, House of Representatives, 2164 Rayburn House Office Building, Washington, DC 20515.

DEAR CHAIRMAN NAPOLITANO AND RANKING MEMBER ROUZER:

In advance of the Subcommittee's March 23, 2021, hearing on "The Water Resources Development Act of 2020: Status of Essential Provisions," attached please find three Western Governors' Association (WGA) policy resolutions that address provisions contained in the Act:

- WGA Policy Resolution 2019-06, Biosecurity and Invasive Species Management;
- WGA Policy Resolution 2018-12, Water Quality in the West; and
- WGA Policy Resolution 2018-08, Water Resource Management in the West.

Western Governors appreciate your oversight of this important legislation, which helps support water infrastructure construction and maintenance, as well as invasive species management, across the West.

Please contact me if you have any questions or require further information. In the meantime, with warm regards and best wishes, I am

Respectfully,

JAMES D. OGSBURY, EXECUTIVE DIRECTOR,
Western Governors' Association.

Attachments

POLICY RESOLUTION 2019-06—BIOSECURITY AND INVASIVE SPECIES MANAGEMENT

A. *BACKGROUND*

1. Per Executive Order 13751, “invasive species” means “with regard to a particular ecosystem, a non-native organism whose introduction causes or is likely to cause economic or environmental harm or harm to human, animal, or plant health.” This definition can include aquatic and terrestrial plants and animals, forest and agricultural pests, and pathogens.
2. The 2017–2027 Hawai’i Interagency Biosecurity Plan defines biosecurity as “the set of measures taken to manage the risk from invasive species to the economy, environment, and health and lifestyle of the people.” This includes pre-border measures, border measures, post-border measures, and measures that increase public awareness about invasive species.
3. The Plant Protection Act of 2000 (Pub. L. 106–224) defines “biological control” (biocontrol) as the use of biological control organisms as an “enemy, antagonist, or competitor used to control a plant pest or noxious weed.” When used properly, biocontrol can be an effective tool in efforts to manage and eradicate invasive species.
4. States have different definitions of biosecurity, biological control and invasive species. They also may use regulatory and nonregulatory terms that are related to, but not synonymous with, the term invasive species, including pest, nuisance species, noxious weed, and injurious wildlife.
5. Invasive species have substantial negative effects on ecosystems, economies, and communities in the West. Studies have found that invasive species cost the U.S. more than \$120 billion every year, and the National Wildlife Federation estimates that 42 percent of threatened or endangered species are at risk due to invasive species. Invasive annual grasses such as cheatgrass, medusahead, fountain grass, and ventenata pose a major threat to western rangelands by increasing the risk of wildfire, outcompeting native grasses, and diminishing soil and water quality. Aquatic nuisance species, including invasive quagga and zebra mussels, decrease water quantity and quality, impair native wildlife, harm hydroelectric and irrigation systems, and can impede maritime transport by fouling vessel hulls. Invasive pathogens affect human health and welfare, and invasive species, such as mosquitoes, can vector human diseases. Invasive species damage multiple types of environments, from virgin forests to urban tree canopies. Invasive species harm a wide variety of economies dependent on natural resources, including agriculture, ranching, tourism, energy production and transmission, and forest products. Invasive species threaten many native plants central to western life and the cultures of Native Americans, Native Hawai’ians, Alaska Natives, and other indigenous peoples.
6. The spread of invasive species results from a combination of human activities, susceptibility of invaded environments, climate change, biology of the invading species, and dispersal. These characteristics are not dictated by geopolitical boundaries, but rather by ecosystem-level factors, which cross state and national borders. Scientists, private landowners, and state and federal land managers across the West have expressed the need to develop a more aggressive and cohesive strategy for invasive species management that includes prevention, monitoring, control, and eradication.
7. The impacts of invasive species on natural resources and human health and welfare are similar in scope and intensity to the threats posed by wildfire. Wildfire management on federal, state, tribal, and local land is coordinated through a sophisticated planning and response network, which includes the National Interagency Fire Center (NIFC).
8. Many invasive species were introduced, or their distribution was expanded, due to inadequate federal and state regulations dealing with interstate transport,

- international trade and interstate commerce, and a lack of communication and coordination between land management agencies.
9. Early Detection and Rapid Response (EDRR) is a coordinated set of actions to find and eradicate potential invasive species in a specific location before they spread and cause harm. The Incident Command System (ICS) is a management system designed to enable effective and efficient incident management, including invasive species rapid response, by integrating a combination of facilities, equipment, personnel, procedures, and communications operating within a common organizational structure.
 10. In the West, biosecurity and invasive species management is the responsibility of a wide network of state, federal, and local agencies. Federal agencies manage invasive species on federal lands and waters under a complex system of mandates and authorities.
 11. Cooperative agreements, grants, and procurement contracts between federal agencies and state and local invasive species management authorities are effective in establishing structured partnerships for collaborative invasive species management. The use of cooperative agreements lessens the burden on local federal land managers, while increasing the efficiency of invasive species management programs utilizing local collaborative goal setting. Additionally, cooperative agreements simplify project-based contracting utilizing the authorities of state and local government agencies. This can be extremely useful, especially where infestations extend across multiple landownerships or EDRR is the management objective.
 12. Good Neighbor Authority (GNA) allows states to enter into agreements with the U.S. Forest Service (USFS) or Bureau of Land Management (BLM) permitting them to perform various land management activities on federal lands. These tools have been successfully used by forest and rangeland managers to achieve various land management objectives across federal, state and local government, and privately-owned lands
 13. U.S. Department of Agriculture (USDA) regulation of interstate movement of commodities via airlines is focused on the protection of agricultural industries in the contiguous United States. This is particularly evident in Hawai'i, where baggage destined for the U.S. mainland is subject to federal inspection, while baggage moving from the mainland to Hawai'i is not.
 14. Environmental DNA (eDNA) is DNA present in an environmental sample, as differentiated from traditional sampling of DNA directly from an intact organism. eDNA frequently is thought of as DNA in tissue and cells that have been shed by an organism but can also refer to DNA within an intact organism, if that organism is collected in the environmental sample. eDNA can be used to detect a wide range of organisms, including those that are endangered or invasive, and be used for both research and monitoring purposes.
 15. The West includes a number of highly important seaports on the U.S. mainland and across the Pacific region. Maritime vessels represent a primary pathway for the movement of aquatic invasive species. With the passage of the Vessel Incidental Discharge Act in 2018, regulations regarding ballast water and other discharges are centralized under Section 312 of the Clean Water Act with the Environmental Protection Agency setting environmental standards, the U.S. Coast Guard (USCG) setting vessel requirements to meet those standards, and the USCG and interested states enforcing those requirements.
 16. State invasive species councils and invasive plant councils provide policy level direction, planning, and coordination for state-level biosecurity and invasive species prevention and management actions in the West. Councils are led by state agencies, non-profit organizations, industry, private landowners, and public-private partnerships. These groups empower those engaged in the prevention, detection, and eradication of invasive species, and serve as forums for invasive species education, communication, and strategic planning. Invasive species councils can collaborate on regional-level issues and benefit from mechanisms that help them to coordinate and solve cross-boundary, cross-jurisdictional challenges.

B. GOVERNORS' POLICY STATEMENT

1. Western Governors support the creation of a Western Invasive Species Council (WISC) to help enhance coordination between existing state invasive species councils, improve communication and collaboration on regional biosecurity and invasive species control efforts, and to advocate for regional needs at the federal level. The WISC should be initially coordinated through the Western Governors' Association and should work to address cross-boundary and cross-jurisdictional challenges identified in this resolution.

2. Western Governors urge Congress and the Administration to support state, territorial, and tribal invasive species prevention, control and management programs and redouble efforts on federal lands. This should be accomplished through accountability and oversight of programs administered by the USDA, the U.S. Department of the Interior, the U.S. Department of Defense, the USCG, and the National Oceanic and Atmospheric Administration. These programs provide valuable services in the detection and elimination of invasive species, as well as coordination, public outreach, and communication.
3. Western Governors support research as needed to provide understanding of invasive species life potential range distribution, and to develop geographically-appropriate control measures. Western Governors urge Congress and the Administration to support much-needed research on biosecurity and invasive species, including programs under the National Institute of Food and Agriculture and to facilitate funding mechanisms that enable land grant universities to conduct research and development of new pesticides. Institutions conducting research on biosecurity, biocontrol and invasive species control methods should look for opportunities to pool funding resources and exchange information across administrative lines. Invasive species managers and policymakers should be encouraged to develop new decision-making tools and economic analyses, as well as build and improve upon the decision-making tools and analyses currently in use. Invasive species managers should strive to incorporate economic analyses and regional-level, science-based decision-making tools into management decisions.
4. Western Governors strongly encourage expansion and creation of partnerships “such as invasive species councils with representation from local weed and pest districts, conservation districts, county governments, non-profit and industry organizations, local stakeholders, state, island, tribal, federal, regional and international agencies “committed to preventing the spread of invasive species, averting new unauthorized introductions, responding rapidly to new introductions, and working together to find creative regional approaches for protecting and restoring natural, agriculture, power and water conveyance infrastructure, and recreational resources. Federal agencies should build a more sophisticated and centralized biosecurity and invasive species management network, including a National Biosecurity and Invasive Species Management Center based on the model of the NIFC.
5. Congress and the federal government should ensure that invasive species funding, including support for emergency response, is sustainable, flexible and able to be maximized by federal, state and local agencies with pooled resources and collaborative funding mechanisms. Federal funding, cooperative agreements grants, and procurement contracts for state and local biosecurity and invasive species management should be structured in a deliberate and transparent way that allows for the greatest amount of flexibility and long-term planning. When possible, federal agencies should look for collaborative projects and funding opportunities that multiply state resources and support state-led biosecurity and invasive species management projects.
6. Western Governors call upon Congress to promote state-directed programs to combat invasive species. Regional leadership and state-directed programs provide place-based solutions tailored to unique regional or local conditions in land and aquatic ecosystems. The federal role should be one of partnership and policy-making that strengthen states’ on-the-ground efforts and mitigates risks associated with the movement of invasive species between states.
7. Federal agencies are encouraged to expand the use of cooperative agreements with state and local governments and should ensure that they are approved in a timely manner and in collaboration with implementing state agencies. Federal agencies can also support invasive species management efforts by encouraging contract recipients to coordinate with state and local invasive species management agencies, regulatory programs, and cooperative weed and invasive species management areas. State invasive species managers should consider using Good Neighbor Authority on USFS and BLM lands for cross-boundary collaborative invasive species control, management and eradication programs.
8. Federal actions should support state biosecurity and invasive species management efforts by ensuring the timely approval of state permits for biosecurity, quarantine, biocontrol, and rapid response actions. Federal agencies should consult with Governors early and substantively regarding biosecurity or invasive species management decisions that affect state resources and state actions.
9. Federal agencies should identify individuals within district and region offices that can be contacted and assist in the planning and implementation of local cross-boundary invasive species management programs.

10. The threats that invasive species pose to western landscapes and communities are serious and should be met with a sophisticated and coordinated response commensurate with the level of their impacts.
11. Prevention is the most efficient and cost-effective method of invasive species management. Effective biosecurity, prevention, and containment methods can mitigate the need for more expensive and burdensome control and eradication programs. Prevention strategies should be coordinated across state, national, and international lines. Federal and state agencies should increase the use of innovative biosecurity prevention and detection programs, including increased use of electronic manifesting in interstate shipments for the purposes of inspection, and the use of canine detection resources.
12. Western Governors support the EDRR framework as a method to limit or eliminate new introductions and existing species expansion. Programs for the control and/or eradication of invasive species must result in more on-the-ground prevention, management and eradication. The ICS should be evaluated for use in instances of fast-spreading invasives and used as part of EDRR; state, federal, and local agencies can opt to practice and implement the ICS as part of rapid response. The Federal Emergency Management Agency can support these efforts by working with western states to create an ICS training module for invasive species rapid response. The Executive Branch can support state-led rapid response programs by: 1) increasing federal funding for state-led aquatic invasive species rapid response programs, including those that provide mechanisms for flexible, long-term support of state early detection rapid response efforts; 2) streamlining federal permitting and approval processes for treatment and management actions for new mussel detections; 3) creating a single federal authority for aquatic invasive species treatment permitting and approval in freshwater systems; and 4) simplifying reporting on new invasive mussel infestations by creating a single federal point of contact for new mussel detections.
13. Federal agencies should support states' effort to identify, study and approve the use of biological control organisms. Federal permitting models should be structured to ensure biocontrol can be utilized by states in a safe and timely manner. Biocontrol research is encouraged at a regional level, with biocontrol research information being encouraged to move freely between institutions and across state lines. Invasive species managers in the West would benefit from the creation of a new, state-of-the-art biological control facility, as well as a collaborative, multi-agency plan for maintaining and staffing new biocontrol facilities at a level that more adequately meets the expanding needs of the region. Furthermore, effective biocontrol, biosecurity, and invasive species research depends upon a highly-skilled workforce. State and federal agencies should collaborate with universities to support programs essential to biosecurity and invasive species management, such as botany, zoology, plant pathology, taxonomy, systematics, and related fields.
14. The containment of invasive quagga and zebra mussels at infested waters in the West depends upon the collaboration and mutual effort of federal, state and local agencies. Many state-led containment programs benefit from federal cooperation and funding, and state and federal agencies should be encouraged to sustain and expand these effective partnerships as necessary. However, to adequately protect the West from the movement of aquatic invasive species, federal agencies must be able to act as full partners in invasive species containment efforts and must have the funding and authorities necessary to contain invasive species within lands and waters under their jurisdiction. To this end, federal agencies, including the National Park Service and BLM, should be vested with clear authority to manage watercraft upon their departure from infested waterbodies under federal jurisdiction.
15. Integrated pest management, biocontrol, outcome-based grazing, and targeted grazing can be effective tools to control the spread of invasive annual grasses. Federal, state, and local agencies should view invasive annual grasses as a regional threat and strive to identify and implement cross-boundary projects to control invasive annual grasses at a regional level. Such projects should include those utilizing alternative management techniques such as outcome-based grazing.
16. Agricultural industries in the Pacific Islands need to be similarly protected from the risk of interstate movement of invasive species as the contiguous U.S. mainland. USDA quarantines and commodity inspections should incorporate the priorities of the West, including non-contiguous states and territorial islands in the western region. This includes maintaining federal quarantines on pests that have not yet reached the West, like the emerald ash borer, and adopting policies

- that adequately protect Pacific states and territories, such as inspection of baggage moving from the contiguous U.S. to non-contiguous areas.
17. State, federal and local agencies and regional coordinating groups should develop and implement a set of best practices for conducting eDNA monitoring and incorporating positive detection results into rapid response strategies.
 18. To effectively prevent, contain, and control invasive species, federal, state and local invasive species managers need federal laws that support on-the-ground action. Western Governors support a states-led review of federal biosecurity and invasive species statutes, including the Lacey Act and the National Invasive Species Act, to evaluate how they support on-the-ground management, identify any gaps in their application, and ensure that their structure and implementation are able to address 21st century biosecurity and invasive species challenges. Of particular interest are opportunities to expand the taxonomic scope of the Lacey Act to benefit U.S. biosecurity.
 19. As directed by the Vessel Incidental Discharge Act, the U.S. Coast Guard and the Environmental Protection Agency should consult with Western Governors and work closely and collaboratively with states on the implementation of that act to ensure that state and regional aquatic resource protection needs are met across the West and the Pacific. Federal and state partners should collaborate on the development of evidence-based risk assessments and should work together to assess the efficacy of policies and tools that may be used in mitigating the impact of various types of discharges, including hull biofouling. Western Governors believe that protecting the diversity of marine habitats in western states and Pacific territories is best accomplished by working with states that have the greatest knowledge of their ecosystems and invasive risks.
 20. Accurate, standardized, and accessible geospatial data is essential to biosecurity and invasive species management in the West. Western Governors support efforts to standardize and centralize invasive species occurrence data, streamline the exchange of data between the nation's major invasive species data aggregators, and increase the accessibility of data to federal, state, and local land and resource managers.

C. GOVERNORS' MANAGEMENT DIRECTIVE

1. The Governors direct WGA staff to work with Congressional committees of jurisdiction, the Executive Branch, and other entities, where appropriate, to achieve the objectives of this resolution.
2. Furthermore, the Governors direct WGA staff to consult with the Staff Advisory Council regarding its efforts to realize the objectives of this resolution and to keep the Governors apprised of its progress in this regard.

Western Governors enact new policy resolutions and amend existing resolutions on a bi-annual basis. Please consult westgov.org/resolutions for the most current copy of a resolution and a list of all current WGA policy resolutions.

POLICY RESOLUTION 2018–12—WATER QUALITY IN THE WEST

A. BACKGROUND

1. Clean water is essential to strong economies and quality of life. In most of the West, water is a scarce resource that must be managed with sensitivity to social, environmental, and economic values and needs. Because of their unique understanding of these needs, states are in the best position to manage the water within their borders.
2. States have federally-recognized authority to manage and allocate water within their boundaries. The Clean Water Act (CWA) Section 101(g) expressly says that “the authority of each state to allocate quantities of water within its jurisdiction shall not be superseded, abrogated, or otherwise impaired by this Act.”
3. States and the Environmental Protection Agency (EPA) work together as co-regulators under the CWA and the Safe Drinking Water Act (SDWA). Congress has delegated to states, by statute, the authority to obtain approval to implement certain federal program responsibilities. When a state has been approved to implement a program and the state is meeting minimum program requirements, the role of federal agencies like EPA should be funding, technical assistance, and research support. States should be free to develop, implement, and enforce those requirements using an approach that makes sense in their specific jurisdiction, subject to the minimum requirements of the federal acts.
4. The CWA was last reauthorized in 1987; attempts to reauthorize the Act since then have failed. Current federal regulations, guidance, and programs pertaining to the CWA do not always recognize the specific conditions and needs of most of the West, where water is scarce and even wastewater becomes a valuable re-

source to both humans and the environment. The West includes a variety of waters; small ephemeral washes, large perennial rivers, effluent-dependent streams, and wild and scenic rivers. In addition to natural rivers, streams and lakes, there are numerous man-made reservoirs, waterways and water conveyance structures. States need more flexibility to determine how to best manage these varying resources.

B. GOVERNORS' POLICY STATEMENT

Clean Water Act (CWA)

1. *State Authority and Implementation of CWA*: States have jurisdiction over water resource allocation decisions and are responsible for how to balance state water resource needs within CWA objectives. New regulations, rulemaking, and guidance should recognize this state authority.
 - a) *CWA Jurisdiction*: Western Governors urge EPA and the Corps to engage the states as co-regulators and ensure that state water managers have a robust and meaningful voice in the development of any rule regarding CWA jurisdiction, particularly in the early stages of development before irreversible momentum precludes effective state participation.
 - b) *Total Maximum Daily Loads (TMDLs)/Adaptive Management*: States should have the flexibility to adopt water quality standards and set total maximum daily loads (TMDLs) that are tailored to the specific characteristics of Western water bodies, including variances for unique state and local conditions.
 - c) *Anti-degradation*: CWA Section 303 gives states the primary responsibility to establish water quality standards (WQS) subject to EPA oversight. Given the states' primary role in establishing WQS, EPA should directly involve the states in the rulemaking process for any proposed changes to its existing regulations. Before imposing new anti-degradation policies or implementation requirements, EPA should document the need for new requirements and strive to ensure that new requirements do not interfere with sound existing practices.
 - d) *Groundwater*: States have exclusive authority over the allocation and administration of rights to use groundwater located within their borders and are primarily responsible for allocating, protecting, managing, and otherwise controlling the resource. The regulatory reach of the CWA was not intended to, and should not, be applied to the management and protection of groundwater resources. The federal government should not develop a groundwater quality strategy; instead, it must recognize and respect state primacy, reflect a true state-federal partnership, and comply with current federal statutory authorities.
2. *Permitting*: Actions taken by EPA in its CWA permitting processes should not impinge upon state authority over water management or the states' responsibility to implement CWA provisions.
 - a) *State Water Quality Certification*: Section 401 of the CWA requires applicants for a federal license to secure state certification that potential discharges from their activities will not violate state water quality standards. Section 401 is operating as it should, and states' mandatory conditioning authority should be retained without amendment.
 - b) *General Permits*: Reauthorization of the CWA must reconcile the continuing administrative need for general permits with their site-specific permitting requirements under the CWA. EPA should promulgate rules and guidance that better support the use of general permits where it is more effective to permit groups of dischargers rather than individual dischargers.
 - c) *Water Transfers*: Water transfers that do not involve the addition of a pollutant have not been subject to the permitting requirements of the CWA's National Pollutant Discharge Elimination System (NPDES). States already have authority to address the water quality issues associated with transfers. Western Governors believe that transporting water through constructed conveyances to supply beneficial uses should not trigger NPDES permit requirements simply because the source and receiving water contain different chemical concentrations and physical constituents. Western Governors support EPA's current Water Transfers Rule, which exempts water transfers between waters of the United States from NPDES permitting requirements.
 - d) *Pesticides*: Western Governors generally support the primary role of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) in regulating agriculture and public health related pesticide applications to waters of the U.S. and will seek state-based solutions that complement rather than duplicate FIFRA in protecting water supplies.
3. *Nonpoint Source Pollution*: Nonpoint source pollution requires state watershed-oriented water quality management plans, and federal agencies should collabo-

rate with states to carry out the objectives of these plans. The CWA should not supersede other ongoing federal, state, and local nonpoint source programs. Federal water policies must recognize that state programs enhanced by federal efforts could provide a firm foundation for a national nonpoint source policy that maintains the non-regulatory and voluntary nature of the program. In general, the use of point source solutions to control nonpoint source pollution is also ill-advised.

- a) *Forest Roads*: Stormwater runoff from forest roads has been managed as a nonpoint source of pollution under EPA regulation and state law since enactment of the CWA. Western Governors support solutions that are consistent with the long-established treatment of forest roads as nonpoint sources, provided that forest roads are treated equally across ownership within each state.
 - b) *Nutrient Pollution*: Nitrogen and phosphorus (nutrient) pollution is a significant cause of water quality impairment across the nation, and continued cooperation between states and EPA is needed. However, nutrients produced by non-point sources fall outside of NPDES jurisdiction and should not be treated like other pollutants that have clear and consistent thresholds over a broad range of aquatic systems and conditions.
States should be allowed sufficient flexibility to utilize their own incentives and authorities to establish standards and control strategies to address nutrient pollution, rather than being forced to abide by one-size-fits-all federal numeric criteria. Successful tools currently in use by states include best management practices, nutrient trading, controlling other water quality parameters, and other innovative approaches.
4. *CWA Reauthorization*: The Western Governors support reauthorization of the CWA, provided that it recognizes the unique hydrology and legal framework in Western states. Further, any CWA reauthorization should include a new statement of purpose to encourage the reuse of treated wastewater to reduce water pollution and efficiently manage water resources.
 5. *Good Samaritan Legislation*: Congress should enact a program to protect volunteering remediation parties who conduct authorized remediation of abandoned hardrock mines from becoming legally responsible under the CWA and/or the Comprehensive Environmental Response, Compensation, and Liability Act for any continuing discharges after completion of a remediation project, provided that the remediation party—or “Good Samaritan”—does not otherwise have liability for that abandoned mine or inactive mine site.
 6. *Stormwater (Wet Weather) Pollution*: In the West, stormwater discharges to ephemeral streams in arid regions pose substantially different environmental risks than do the same discharges to perennial surface waters. The Western Governors emphasize the importance of state primacy in water management, including management of ephemeral streams. State water agencies are well-equipped to provide tailored approaches that reflect the unique management needs of ephemeral streams.
 7. *State-Tribal Coordination*: Western Governors endorse government-to-government cooperation among the states, tribes and EPA in support of effective and consistent CWA implementation. While retaining the ability of the Governors to take a leadership role in coordination with the tribes, EPA should promote effective consultation, coordination, and dispute resolution among the governments, with emphasis on lands where tribes have treatment-as-state status under Section 518 of the CWA.

Safe Drinking Water Act (SDWA)

8. *Federal Assistance in Meeting SDWA Standards*: Western Governors believe that the SDWA and its standards for drinking water contaminants have been instrumental in ensuring safe drinking water supplies for the nation. It is essential that the federal government, through EPA, provide adequate support to the states and water systems to meet federal requirements. Assistance is particularly needed for small and rural systems, which often lack the resources needed to comply with federal treatment standards.
9. *Drinking Water Standards*: Contaminants such as arsenic, chromium, perchlorate, and fluoride often occur naturally in the West. Western Governors support EPA technical assistance and research to improve both the efficiency and affordability of treatment technologies for these contaminants. In any drinking water standards that the EPA may revise or propose for these and other contaminants, including disinfection byproducts, EPA should consider the disproportionate impact that such standards may have on Western states and give special consideration to feasible technology based on the resources and needs of smaller water systems.

10. *Risk Assessments*: Analysis of the costs of treatment for drinking water contaminants should carefully determine the total costs of capital improvements, operation, and maintenance when determining feasible technology that can be applied by small systems. These costs should be balanced against the anticipated human health benefits before implementing or revising drinking water standards.
11. *Emerging Contaminants/Pharmaceuticals*: The possible health and environmental impacts of emerging contaminants and pharmaceuticals are of concern to Western Governors. Although states have existing authorities to address possible risks associated with emerging contaminants and pharmaceuticals, there is a need for more reliable science showing impacts on human health as more information regarding these contaminants becomes available.
12. *Hydraulic Fracturing*: States currently employ a range of effective programmatic elements and regulations to ensure that hydraulic fracturing does not impair water quality, including but not limited to requirements pertaining to well permitting, well construction, the handling of exploration and production waste fluids, the closure of wells, and the abandonment of well sites.
Federal efforts to study the potential impacts of hydraulic fracturing on water quality should leverage state knowledge, expertise, policies, and regulations. Such efforts should also be limited in scope, based upon sound science, and driven by the states. Western Governors oppose efforts that would diminish the primary and exclusive authority of states over the allocation of water resources necessary for hydraulic fracturing.

Compliance with Federal Water Quality and Drinking Water Requirements

13. *State Revolving Funds*: Western Governors support EPA's Clean Water State Revolving Fund (SRF) and Drinking Water SRF as important tools that help states and local communities address related water infrastructure needs and comply with federal water quality and drinking water requirements. Western Governors also urge Congress and the Administration to ensure that the SRF Programs provide greater flexibility and fewer restrictions on state SRF management.
14. *Restoring and Maintaining Lakes and Healthy Watersheds*: Historically, the Section 314 Clean Lakes Program and the Section 319 Nonpoint Source Management Program provided states with critical tools to restore and maintain water quality in lakes and watersheds. Western Governors urge the Administration and Congress to support these programs. Such support should not come at the expense of other federal watershed protection programs.
15. *EPA Support and Technical Assistance*: The federal government, through EPA, should provide states and local entities with adequate support and technical assistance to help them comply with federal water quality and drinking water requirements. EPA should also collaborate with and allow states to identify and establish priority areas, timelines, and focus on programs that provide the largest public health and environmental benefits.
16. *EPA Grant Funding for Primary Service—Rural Water Programs*: Some rural communities still lack basic water and sanitary services needed to assure safe, secure sources of water for drinking and other domestic needs. Adequate federal support, including but not limited to the Rural Utilities Service programs of the Department of Agriculture and SRFs through EPA, are necessary to augment state resources.

Water Quality Monitoring and Data Collection

17. *Water Data Needs*: Western water management is highly dependent upon the availability of data regarding both the quality and quantity of surface and ground waters. EPA should provide support to the states in developing innovative monitoring and assessment methods, including making use of biological assessments, sensors and remote sensing, as well as demonstrating the value to the states of the national probabilistic aquatic resource surveys.

B. GOVERNORS' MANAGEMENT DIRECTIVE

1. The Governors direct WGA staff to work with Congressional committees of jurisdiction, the Executive Branch, and other entities, where appropriate, to achieve the objectives of this resolution.
2. Furthermore, the Governors direct WGA staff to consult with the Staff Advisory Council regarding its efforts to realize the objectives of this resolution and to keep the Governors apprised of its progress in this regard.

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POLICY RESOLUTION 2018-08—WATER RESOURCE MANAGEMENT IN THE WEST

A. *BACKGROUND*

1. Water is a crucial resource for communities, industries, habitats, farms, and western states. Clean, reliable water supplies are essential to maintain and improve quality of life. The scarce nature of water in much of the West makes it particularly important to our states.
2. States are the primary authority for allocating, administering, protecting, and developing water resources, and they are primarily responsible for water supply planning within their boundaries. States have the ultimate say in the management of their water resources and are best suited to speak to the unique nature of western water law and hydrology.
3. Many communities in the West anticipate challenges in meeting future water demands. Supplies are nearly fully allocated in many basins across the West, and increased demand from population growth, economic development, and extreme weather and fire events places added stress on those limited water resources. Sustainability of our natural resources, specifically water, is imperative to the foundations upon which the West was developed. Growth and development can only continue upon our recognition of continued state stewardship of our unique resources and corresponding responsibilities.
4. Strong state, regional and national economies require reliable deliveries of good-quality water, which in turn depend on adequate infrastructure for water and wastewater. Investments in water infrastructure also provide jobs and a foundation for long-term economic growth in communities throughout the West. Repairs to aging infrastructure are costly and often subject to postponement.
5. Western Governors recognize the essential role of partnership with federal agencies in western water management and hope to continue the tradition of collaboration between the states and federal agencies.
6. Tribal governments and western states also share common water resource management challenges. The Western Governors Association and Western States Water Council have had a long and productive partnership with tribes, working to resolve water rights claims.

B. *GOVERNORS' POLICY STATEMENT*

1. *State Primacy in Water Management:* As the preeminent authority on water management within their boundaries, states have the right to develop, use, control and distribute the surface water and groundwater located within their boundaries, subject to international treaties and interstate agreements and judicial decrees.
 - a. *Federal Recognition of State Authority:* The federal government has long recognized the right to use water as determined under the laws of the various states; Western Governors value their partnerships with federal agencies as they operate under this established legal framework.

While the Western Governors acknowledge the important role of federal laws such as the Clean Water Act (CWA), the Endangered Species Act (ESA), and the Safe Drinking Water Act (SDWA), nothing in any act of Congress or Executive Branch regulatory action should be construed as affecting or intending to affect states' primacy over the allocation and administration of their water resources.

Authorization of water resources development legislation, proposed federal surplus water rulemakings, and/or storage reallocation studies should recognize natural flows and defer to the states' legal right to allocate, develop, use, control, and distribute their waters, including but not limited to state storage and use requirements.

- b. *Managing State Waters for Environmental Purposes:* States and federal agencies should coordinate efforts to avoid, to the extent possible, the listing of water-dependent species under the ESA. When ESA listings cannot be avoided, parties should promote the use of existing state tools, such as state conservation plans and in-stream flow protections, to conserve and recover species.
2. *Infrastructure Needs:* Aging infrastructure for existing water and wastewater facilities and the need for additional water projects cannot be ignored. Infrastructure investments are essential to our nation's continued economic prosperity and environmental protection, and they assist states in meeting federally-mandated standards.

- a. *Federal Support for Infrastructure Investment*: Congress should provide adequate support for the CWA and SDWA State Revolving Funds. Further, Congress should fully utilize the receipts accruing to the Reclamation Fund for their intended purpose in the continuing conservation, development and wise use of western resources to meet western water-related needs, including the construction of Congressionally-authorized Bureau of Reclamation rural water projects and facilities that are part of a Congressionally-authorized Indian water rights settlement.

Congress should authorize water resources development legislation on a regular schedule and appropriate funding so all projects and studies authorized in such legislation can be completed in a timely manner.

Congress also should consider facilitating greater investment in water infrastructure, utilizing such tools as loan guarantees, revolving funds, infrastructure banks and water trust funds.

Capital budgeting and asset management principles should be used to determine funding priorities based on long-term sustainability and not annual incremental spending choices. It should be accompanied by dedicated sources of funding with appropriate financing, cost-sharing, pricing and cost recovery policies.
 - b. *Alternatives to Direct Federal Investment*: Federal and state policymakers should also consider other tools to promote investment in water infrastructure and reduce financing costs, including: public-private partnerships, bond insurance, risk pooling, and credit enhancements.

Congress should remove the state volume caps for private activity bonds used for water and wastewater projects, provide guaranteed tax-exempt status for bonds issued by state or local agencies to finance water infrastructure, provide loan guarantees, and otherwise support and encourage alternatives to direct federal investment of limited general funds.
 - c. *Hydropower*: Congress and the Administration should authorize and implement appropriate hydropower projects and programs through efficient permitting processes that enhance renewable electric generation capacity and promote economic development, while ensuring protection of important environmental resources and indigenous people's rights.
 - d. *Infrastructure Planning and Permitting*: Infrastructure planning and permitting guidelines, rules and regulations should be coordinated, streamlined and sufficiently flexible to: (1) allow for timely decision-making in the design, financing and construction of needed infrastructure; (2) account for regional differences; (3) balance economic and environmental considerations; and (4) minimize the cost of compliance.
3. *Western States Require Innovative and Integrated Water Management*: Western Governors believe effective solutions to water resource challenges require an integrated approach among states and with federal, tribal and local partners. Federal investments should assist states in implementing state water plans designed to provide water for municipal, rural, agricultural, industrial and habitat needs, and should provide financial and technical support for development of watershed and river basin water management plans when requested by states.

Integrated water management planning should also account for flood control, water quality protection, and regional water supply systems. Water resource planning must preserve state authority to manage water through policies which recognize state law and financial, environmental and social values of water to citizens of western states today and in the future.

 - a. *Water Transfers*: Western Governors recognize the potential benefits of market-based water transfers, meaning voluntary sales or leases of water rights. The Governors support water transfers that avoid or mitigate damages to agricultural economies and communities while preventing injury to other water rights, water quality, and the environment.
 - b. *Energy Development*: Western Governors recognize that energy development and electricity generation may create new water demands. Western Governors recommend increased coordination across the energy and water management communities, and support ongoing work to assess the interconnection of energy and water through the Regional Transmission Expansion Planning Project for the Western Interconnection and similar efforts.
 - c. *Conservation and Efficiency*: Because of diminished water resources and declining and inconsistent snowpack, Western Governors encourage adoption of strategies to sustain water resources and extend existing water supplies further through water conservation, water reuse and recycling, desalination and reclamation of brackish waters, and reductions in per capita water use. The Gov-

- ernors encourage the use of and research into promising water-saving strategies.
- d. *Local Watershed Planning*: Western Governors encourage federal agencies and Congress to provide resources such as technical support to states and local watershed groups. States may empower these watershed groups to address local water issues associated with water quality, growth and land management to complement state water needs.
 - e. *Intergovernmental Collaboration and Conflict Resolution*: Western Governors support the negotiated settlement of interstate water disputes, Indian and Hawaiian water rights claims, and other federal water needs and claims, the settlement of which are in the best interest of western states.
 - f. *State-Federal Coordination*: Western Governors recognize the important role of federal agencies in water resource management in the western states. Governors appreciate the efforts of federal agencies to coordinate water-related activities, particularly through the Western States Water Council, and support the continuation of these key state-federal partnerships.
4. *Western States Need Reliable Water Resource Information*: Basic information on the status, trends and projections of water resource availability is essential to sound water management.
 - a. *Basic Water Data*: Western Governors support the U.S. Geological Survey's Groundwater and Streamflow Information Program, the Natural Resources Conservation Service's Snow Survey and Water Supply Forecasting Program, the National Oceanic and Atmospheric Administration's weather and hydrology-related data collection, monitoring, and drought information programs, and the National Aeronautics and Space Administration's National Land Imaging (Landsat) Program with its thermal infrared sensor. Western Governors support federal efforts to coordinate water data gathering and information programs across multiple agencies.
 - b. *Extreme Weather Events Planning*: Western Governors recognize the significant potential impacts of extreme weather events and variability in water supplies. Western Governors urge Congress and the Administration to work closely with states and other resource managers to improve predictive and adaptive capabilities for extreme weather variability and related impacts. We specifically urge the federal government to place a priority on improving the sub-seasonal and seasonal precipitation forecasting capabilities that could support water management decision-making.
 - c. *Water Data Exchange*: The Western Governors' Association and the Western States Water Council have worked together to create the Water Data Exchange, an online portal that will enable states to share their water data with each other, federal agencies, and the public via a common platform. The Governors encourage the use of state water data in planning for both the public and private sectors.
 5. *Drought Preparedness and Response*: As exceptional levels of drought persist across the West, Governors are leading on drought preparedness and response through the Western Governors' Drought Forum. The Drought Forum provides a framework for leaders from states, businesses, non-profits, communities, research organizations and federal agencies to share best practices and identify policy options for drought management. The Governors have identified several areas in need of additional attention from Drought Forum partners, including:
 - a. *Data and Analysis*: Basic data on snowpack, streamflow and soil moisture is essential to understanding drought. Though a great deal of information already exists, enhanced drought data collection and real-time analysis at a higher resolution is essential. Governors support state and federal efforts to maintain adequate collection of drought and water data, enhance data networks where appropriate, and facilitate better use of existing information.
The Governors appreciate the collaborative efforts on drought provided through NOAA's National Weather Service River Forecast Centers and Weather Forecast Offices, and the Office of Atmospheric Research's labs and programs, such as the National Integrated Drought Information System (NIDIS).
 - b. *Produced, Reused, and Brackish Water*: Technology exists to use produced, reused, recycled and brackish water-sources traditionally considered to be marginal or wastewater. Adoption of this technology has been limited by inadequate data, regulatory obstacles, financial barriers, public attitudes and logistical uncertainties. Governors support regulatory streamlining and policy options to encourage use of produced, brackish, and reused water where appropriate.
 - c. *Forest Health and Soil Stewardship*: Better land management practices for forests and farmland may help improve availability and soil moisture retention.

Wildfires can cause sediment runoff in water systems, leading to problems for reservoir management and water quality. Governors support policies and practices that encourage healthy and resilient forests and soils in order to make the most of existing water supplies.

- d. *Water Use Efficiency and Conservation*: Public awareness of drought has directed increasing attention to water conservation strategies, both in-home and on-farm. Governors encourage municipal, industrial and agricultural water conservation strategies as drought management strategy.
- e. *Infrastructure and Investment*: Water infrastructure to store and convey water is crucial to drought management, but maintenance and expansion of that infrastructure is often difficult to fund. Governors support efforts to make the most of existing infrastructure, while seeking creative solutions to add more infrastructure with limited resources.
- f. *Working within Institutional Frameworks to Manage Drought*: Legal frameworks and regulatory regimes can sometimes limit the ability of state, local and federal agencies to respond quickly to drought conditions. Governors believe that innovative, flexible policy solutions, such as streamlined processing of temporary water transfers, should be considered when managing drought.
- g. *Communication and Collaboration*: Communication among state officials, federal agency representatives, water providers, agricultural users and citizens is a crucial component of effective drought response. The Western Governors' Drought Forum will continue to provide a framework for sharing best practices through its online resource library, informational webinars, and strategy-sharing meetings for the duration of this resolution.

C. GOVERNORS' MANAGEMENT DIRECTIVE

1. The Governors direct the WGA staff, where appropriate, to work with Congressional committees of jurisdiction and the Executive Branch to achieve the objectives of this resolution including funding, subject to the appropriation process, based on a prioritization of needs.
2. Furthermore, the Governors direct WGA staff to develop, as appropriate and timely, detailed annual work plans to advance the policy positions and goals contained in this resolution. Those work plans shall be presented to, and approved by, Western Governors prior to implementation. WGA staff shall keep the Governors informed, on a regular basis, of their progress in implementing approved annual work plans.

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APPENDIX

QUESTION FROM HON. GRACE F. NAPOLITANO TO MATTHEW J. STRICKLER, SECRETARY OF NATURAL RESOURCES AND CHIEF RESILIENCE OFFICER, COMMONWEALTH OF VIRGINIA

Question 1. Your testimony highlights the backlog of unfunded Corps projects and how those might be outdated by the time they are fully funded for construction. Can you further discuss how increased Corps funding would help project delivery timelines, and how that may help states to prepare for climate impacts more holistically?

ANSWER. A persistent challenge for USACE and decisionmakers is how to address the agency's backlog of \$98 billion in authorized USACE construction activities. At any time, the Army Corps has more than 500 active projects, some of which date back decades. As climate change creates a pressing need for swift action to improve flooding resilience and habitat restoration, the federal government must provide the needed funding, and prioritize funding for projects based on what's most important for resilience, and which projects provide co-benefits for environmental protection and community development.

Increased funding would help reduce the Corps project backlog, however the backlog is so large that funding is only part of the problem.

For example, many Corps projects continue to have unacceptably high environmental costs and fail to provide protection for environmental justice communities. These projects should be suspended until Corps studies can be subjected to independent review and revised cost-benefit analysis that better accounts for climate change, cumulative impacts, and historic injustices.

All of these actions could expedite the implementation of resilience solutions across the nation.

QUESTIONS FROM HON. GARRET GRAVES OF LOUISIANA TO MATTHEW J. STRICKLER, SECRETARY OF NATURAL RESOURCES AND CHIEF RESILIENCE OFFICER, COMMONWEALTH OF VIRGINIA

Question 1. Virginia is working on the completion of a Comprehensive Coastal Masterplan.

- How does Virginia intend to use this masterplan to inform its work with the Army Corps of Engineers and federal government at large?
- What indications have you had from the Corps on how they will treat this plan?
- Once this plan is developed, how will the commonwealth implement it? What will the implementation schedule be? Has funding been made available for implementing the plan? Which federal programs will be involved?

ANSWER. In October 2020, Governor Northam released the Virginia Coastal Master Planning Framework. This Framework is the result of a nearly two-year process initiated by the Governor, involving state agencies, key stakeholders, and local and regional partners to develop mitigation strategies to reduce the near- and long-term impacts of natural hazards and extreme weather.

The goal of the Master Planning exercise is to have a completed, project oriented Coastal master Plan by the end of 2021.

Coastal resilience planning encompasses many policy initiatives, government agencies, and federal resources, and requires coordination among state and local leaders, scientists and engineers, and impacted stakeholders, including the Army Corps of Engineers. To ensure coordination and mutual support with all parties, Governor Northam recently signed Executive Order Seventy-One, which establishes the Virginia Coastal Resilience Technical Advisory Committee (TAC).

The TAC is tasked with facilitating this coordination and developing recommendations for specific, place-based, coastal adaptation and protection strategies. Its mem-

bers include representatives from Virginia’s eight coastal Planning District Commissions, academic and technical experts, and state and federal agencies.

The Norfolk District of the Corps is represented on the TAC, and our efforts are coordinated through that body. They have been active and helpful participants.

To reduce climate pollution, the Commonwealth of Virginia became the first southern state to join the Regional Greenhouse Gas Initiative (RGGI), a market-based collaborative effort among Northeast and Mid-Atlantic states to combat climate change and reduce greenhouse gas emissions from the power sector, while driving the clean energy economy.

Legislation passed during the 2020 General Assembly session dedicates 45 percent of the proceeds generated from the auction for community flood preparedness and coastal resilience, while the remainder of funds will be directed towards energy efficiency programs.

The RGGI proceeds directed towards resilience will fund project implementation, planning, research, and monitoring via the Community Flood Preparedness Fund. We generated more than \$19m for the fund in our first RGGI auction earlier this year, and we expect to generate more than \$75 million annually for flood preparedness and resilience.

Virginia will look to leverage federal funds as well, including through aligning grant programs such as NOAA Coastal Resilience grants, HUD CDBG-DR and CDBG-MIT, and stateside LWCF. We are hopeful that Congress will pass an infrastructure package that provides significant additional funding for adaptation and resilience through these and other programs.

Implementation schedule and specifics are under development, and will be detailed in the first iteration of the Master Plan, expected by the end of 2021.

Question 2. You note that state and federal efforts to support resiliency are not aligned, and that there is not enough funding to go around.

- What are your recommendations to better align goals of each entity?
- One-third of the Army Corps’ project backlog can be found in my state—I want to be on record that you can have as many authorizations and feasibility studies as you want—it doesn’t necessarily result in new starts and project implementation.
 - i. What can the federal government do to achieve better efficiency and faster project implementation?
- Should it take a major disaster declaration for this to be a federal priority? What can be done at the federal level to increase the availability of resources for proactive investments in resiliency?

ANSWER. First, and most importantly, it should *NOT* take a major disaster declaration for coastal resilience investment to be a federal priority. Risk management is based on forecasted future risk, not past events.

Virginia’s coastal region covers 8,950 square miles, or approximately one quarter of the state and has more than 10,000 miles of tidally influenced shoreline.

Recent estimates show that 250,000 acres of land, 1,469 miles of roads, and property valued at \$17.4 billion lie less than five feet above the high tide line in Virginia.¹

Coastal Virginia also has some of the highest relative sea level rise rates in the United States due to the combined effects of climate-driven sea level rise and land subsidence.²

The impacts of sea level rise and flooding are magnified by population density: Virginia’s coastal region is home to more than 70 percent of our population.³ Coastal regions across the United States are seeing population increases, with the U.S. Department of Commerce estimating that 47 percent of the U.S. population lives along coastlines, putting a significant portion of the public at risk.⁴

It is not a matter of if, but when will Virginia be impacted by a climate disaster. The fact that the federal government has predicated many of its resilience decisions based on past disasters is evidence of the misalignment I mentioned in my testimony.

¹Ben Strauss, Claudia Tebaldi, and Scott Kulp, “Virginia and the Surging Sea: A Vulnerability Assessment with Projections for Sea Level Rise and Coastal Flood Risk” (Princeton, NJ: Climate Central, September 2014), <https://sealevel.climatecentral.org/uploads/ssrf/VA-Report.pdf>.

²Christopher G. Piecuch, “Origin of Spatial Variation in US East Coast Sea-Level Trends during 1900–2017,” *Nature*, 2018.

³Annual Estimates of the Resident Population for Counties in Virginia: April 1, 2010 to July 1, 2019 (COEST2019-ANNRES-51) Source: U.S. Census Bureau, Population Division. Release Date: March 2020

⁴“National Coastal Population Report: Population Trends from 1970 to 2020.” (U.S. Department of Commerce, NOAA’s Office of Coastal Management, 2018).

But that is changing. The engagement ongoing engagement of the Corps in developing Virginia's Coastal Master Plan is encouraging. In addition, federal changes in WRDA 2020 support this engagement. For example, step in WRDA 2020 to ensure the Corps will accurately assess and quantify efforts to address potential sea level rise or inland flooding when doing cost-benefit analyses for future water resources projects will provide helpful in aligning the Army Corps' and Virginia's planning efforts.

Reprioritizing Corps projects to address the resilience challenges of coastal states, reducing the backlog of outdated Corps projects, and increasing federal funding will all further align and hasten joint resilience efforts. Additionally, ensuring that other federal grant and direct spending programs, including those for transportation, housing, economic development, and military construction are required to factor in climate resilience will be extremely beneficial.

Question 3. Your testimony notes Virginia's robust flood elevation standard. How is the Commonwealth communicating these standards to vulnerable communities?

- Have you encountered any concerns from Virginians who are more aware of the BFE requirements in their NFIP policy?
- How would the state respond to a situation where homeowners are not eligible for disaster aid made available through the CDBG-DR program because the BFE standard for CDBG differs from that of homeowner NFIP policies? Do you think this is confusing?

ANSWER. Virginia's Flood Risk Management Standard allies to new and modified state buildings and facilities. It does not impact privately owned and ensured structures, though we are encouraging localities to adopt it.

I am not aware of concerns regarding base flood elevations for state owned buildings or those adopted by local ordinance.

I am also not aware of any conflicts with our existing state or local standards and CDBG-DR. We would not favor a situation where a stronger and more resilient standard disqualified Virginians from receiving federal disaster relief in any form.

QUESTIONS FROM HON. GRACE F. NAPOLITANO TO CHAD BERGINNIS, C.F.M.,
EXECUTIVE DIRECTOR, ASSOCIATION OF STATE FLOODPLAIN MANAGERS

Question 1. Your testimony concerns the problem that the Corps is underfunded to perform their many necessary projects across the country, as well as implement provisions from WRDA 2020 and past WRDA bills. Can you discuss what impact a lack of funding has on:

- a. flood protection, navigation, and environmental mitigation projects so important to local communities;

ANSWER. To this point, the Corps staff is occupied constructing traditional large flood control projects, which is what Congress has provided the majority of its funding for. Many communities, especially those that are small or economically disadvantaged, do not qualify for those projects because they have low value properties that are flooded, because they cannot provide the required cost share, or because they understand such projects are not sustainable in light of increasing future flood risk.

- b. increasing resiliency and protection for communities already facing climate impacts;

ANSWER. Communities in coastal areas or where rainfall is significantly increasing are among those already facing climate impacts. A vast majority of those communities need Corps technical assistance to even understand their current and future risk and understand the range of options they might have to address these issues.

- c. implementing new policies that may improve Corps' projects and lead to better outcomes?

ANSWER. ASFPM believes that the most impactful new approach that the Corps can implement is to have a robustly staffed technical assistance function not tied to any specific project. Corps staff provides assistance on large projects because they have a funding source they can charge their time and expenses to. The Corps struggles to provide technical assistance to communities outside of the congressionally authorized projects, because there is not a dedicated funding source to consistently have staff available for that function, nor has the Corps ever been organized and/or budgeted in this way. Such an approach will take both Congressional and Corps leadership—Congress providing funding and priority for general technical assistance programs/staffing, and for the Corps to build dedicated staff capacity and leadership to do this kind of technical assistance—and we are not talking about “assigning” staff with the function as an “other duty as assigned.”. Corps leaders acknowledge

this problem and seem interested in effectively addressing it, likely through the FPMS and PAS and other Continuing authorities. In WRDA 2020 Congress provided some positive direction for natural and nature-based approaches to managing flood risk as well as using non-structural approaches.

QUESTIONS FROM HON. GARRET GRAVES OF LOUISIANA TO CHAD BERGINNIS, C.F.M.,
EXECUTIVE DIRECTOR, ASSOCIATION OF STATE FLOODPLAIN MANAGERS

Question 1. Why should the Corps make completing the Lower Mississippi River Comprehensive Study a priority?

ANSWER. Watershed based comprehensive studies are important to managing those systems as opposed to only looking at projects or solutions for part of a basin. In our testimony we highlighted the importance of the lower and upper Missouri River comprehensive projects for example.

Question 2. The primary benefit of funding a USACE project is the decrease in flood risk, but a secondary benefit is the decrease in the costs of flood insurance for the surrounding community. However, in my experience, FEMA and USACE do not seem to have firm channels of communication to ensure that the federal right and left hands are in coordination—including ensuring that the decrease in flood risk is communicated to the NFIP through project implementation or improved credentialing for a levee—results in a change to insurance costs.

Could you comment on the relationship between these two agencies? Do you see any opportunities to improve and formalize communications and goals of these two entities?

ANSWER. Over time ASFPM has seen this relationship ebb and flow. At one point in the early 2000's ASFPM and another organization facilitated meetings between the Corps and FEMA in particular on levee issues. Over time that relationship has improved significantly. In a recent briefing, we learned that for Risk Rating 2.0, the Corps was instrumental in assisting with FEMA's methodology and approach for levees which we believe will provide a true risk-based rating for many levee scenarios. Also, we are pleased to give our impression that FEMA and the Corps are working together on other levee safety issues as FEMA. This progress in communication is good and welcome.

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