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EXAMINING THE BENEFITS OF INVESTING IN USACE WATER INFRASTRUCTURE PROJECTS

HEARING

BEFORE THE

COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS

UNITED STATES SENATE

ONE HUNDRED SEVENTEENTH CONGRESS

FIRST SESSION

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COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS

ONE HUNDRED SEVENTEENTH CONGRESS

FIRST SESSION

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C O N T E N T S

EXAMINING THE BENEFITS OF INVESTING IN USACE WATER INFRASTRUCTURE PROJECTS

WEDNESDAY, JULY 28, 2021

U.S. SENATE,
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS,
Washington, DC.

The Committee, met, pursuant to notice, at 10:05 a.m., in room 406, Dirksen Senate Office Building, Hon. Thomas R. Carper (Chairman of the Committee) presiding.

Present: Senators Carper, Capito, Cardin, Whitehouse, Duckworth, Kelly, Padilla, Inhofe, Cramer, Boozman, Wicker, Sullivan, and Ernst.

OPENING STATEMENT OF HON. THOMAS R. CARPER, U.S. SENATOR FROM THE STATE OF DELAWARE

Senator CARPER. Good morning, everyone. I am pleased to call this hearing to order.

I want to start by taking a moment to thank our Ranking Member, Senator Capito, and her staff and other members of our Committee here today for joining us to kick off this discussion for the development of the next Water Resources Development Act, affectionately known as WRDA.

I am very proud of our successful bipartisan work on water infrastructure so far this Congress, including passage of our Drinking Water and Clean Water Bill by a margin of 89 to 2 in the Senate. Negotiations, I think, continue with respect to a bipartisan infrastructure package. Color me more hopeful today than I have been in a while, so we will see how that works out.

I am grateful for the opportunity that WRDA affords us to review the Army Corps' operations every 2 years. This is an agency facing an extraordinarily important and difficult task with a list of worthy projects far outstripping the resources that are available to it.

Indeed, due to a rampant underfunding for a number of years, the backlog of authorized but not completed projects has grown to over $100 billion. I think the number is $109 billion, and that is more than 15 times the agency's annual operating budget, which should be of concern to all of us.

Clearly, there is something wrong with this picture, and when demand for projects so outstrips the supply of resources, the Corps is placed in an untenable position. Moreover, its decisionmaking process is growing far more difficult as we all struggle to address the needs of small, rural, and often disadvantaged communities, as well as the infrastructure straining impacts of sea level rise, more

intense storms, pervasive droughts, and other climate change consequences.

My hope is that today's hearing will provide us with important insights into all of these challenges as we begin to work on the next WRDA Bill. I look forward to hearing testimony, we look forward to hearing testimony from our stakeholders today about their experiences with the Corps to inform us as we set priorities for the next authorization bill.

Understanding that our concerns with the adequacy of Corps funding are universal and will be a key focus of negotiations with the Administration and our colleagues on the Appropriations Committee, I would like to focus today on the upcoming challenges presented by small, worthwhile, but oftentimes overlooked projects and the magnifying problems associated with changing climate.

For some time, I have spoken about how the current process for evaluating benefits and costs of the Corps projects shortchanges our abilities to address the critical needs in smaller, economically disadvantaged communities, including those in rural and tribal areas, sometimes referred to as "the least of these."

Because the benefit to cost ratio, affectionately referred to as BCR, does not account for the regional and local economic benefits of a project, a number of communities that need Federal investment the most are the last to receive it because the benefits associated with the construction of projects in these areas are not great enough to register as significant on a national scale.

Thus, from the perspective of the White House Office of Management and Budget, these projects oftentimes don't make the cut.

In the 2020 WRDA law, our Committee provided the Corps with flexibility and the authority to partner with rural and economically disadvantaged communities; however, those 2020 provisions were just the tip of the iceberg of what is needed. We need to do more for communities that depend on Federal investment for essential flood and storm protection.

Along with a number of other States, Delaware and West Virginia and Rhode Island have oftentimes ended up on the short end of the stick when it comes to Federal investments in Corps projects, Corps infrastructure.

We will continue to explore ways to expand the Corps' programs to better reach the small, rural communities in States that all of us represent.

We witness on an almost daily basis how the States of all of us on this dais are being increasingly hammered by increasingly powerful storms, more devastating floods, encroaching sea levels, and seemingly endless droughts. The Corps has been thrust into the position of prime defender against these all too frequent and increasingly costly disasters.

To be better able to respond to climate change, the Corps needs to update its economic assessments as well as its engineering standards to ensure the Nation's infrastructure is resilient to these impacts of climate change. In short, the Corps needs to take a longer view with climate consequences in clear focus.

As my colleagues frequently hear me say, maybe too frequently hear me say, the State of Delaware is the lowest lying State in the Nation, as Collin knows. Our highest point of land is a bridge, and

we are acutely aware of the need to develop solutions that not only work today, but also will protect us well into the future.

Incorporating natural infrastructure into our resilience efforts in Delaware has proven a critical element of those long term solutions. We would like to see the Corps embrace and use natural infrastructure solutions more broadly as a tool to respond to climate change.

We also need for the Corps to plan for the new climate reality that we face. Failure to do so is extremely costly. From 1990 through 2019, the Corps received $53.9 billion, that is $53.9 billion in supplemental appropriations. The majority of that money was for flood risk projects, typically in response to flooding disasters and severe storms.

Over the last decade, these funds have more than doubled the Corps' construction program for flood risk reduction projects. We shouldn't be waiting for the storms to address these projects; we should be addressing these initiatives before the storms ever arrive. The trick is to prevent these massive losses in the first place.

So, let's begin our work on WRDA this year with equity and climate goals more in mind than before.

With that, I want to turn over to Senator Capito for her opening remarks, and say how much we look forward to working on this legislative project together with her and members of this Committee on both sides of the aisle, from Iowa all the way to Rhode Island and back.

Thank you.

Senator Capito.

OPENING STATEMENT OF HON. SHELLEY MOORE CAPITO, U.S. SENATOR FROM THE STATE OF WEST VIRGINIA

Senator CAPITO. Yes, thank you, Mr. Chairman. I look forward to working on this, as well.

It is that time again when the Committee begins the biennial process of crafting water resources legislation. As the Chairman said, WRDA, the Water Resources Development Act, authorizes water resource projects and sets national policies for the Civil Works Program of the U.S. Corps of Engineers.

The Corps' main mission area of navigation, flood risk management, and ecosystem restoration support the lives and livelihoods of millions of Americans and facilitates commerce throughout this country and internationally.

As I noticed in the previous hearing, 2.3 billion short tons of goods and commodities were transported over water in the United States in just 1 year. This is made possible by the Nation's ports and inland waterway systems constructed and maintained by the Corps.

According to the Corps' own estimates, its flood risk management projects have prevented over $1 trillion in riverine and coastal flood damages, mostly within the last 35 years.

These projects and activities, in addition to other important mission areas, are authorized and directed by Congress under WRDA. The most recent WRDA legislation enacted by Congress in 2020 included several provisions that are important to the country and my home State of West Virginia.

Importantly, the legislation changed the cost share for projects on the inland waterways system, included provisions to support the development of projects in rural and economically disadvantaged communities, and provided assistance to non-Federal sponsors on identifying flood risk management project deficiencies.

I was glad to secure an increase in authorization of $160 million for West Virginia's two environmental infrastructure programs under the Corps, which help support our drinking water and wastewater projects in the State.

But there is much more to do, as you said, Mr. Chairman, and I look forward to working with the Chairman and my colleagues to develop the next WRDA Bill. It is important that future WRDA legislation supports the development and delivery of water resources projects in communities that need them, while continuing to meet our national priorities.

This is underscored by events such as the 2016 flood in West Virginia, which claimed 23 lives and destroyed over 1,000 homes. We are still waiting on initial funding for a comprehensive study by the Corps to assess existing flood protection gaps and inform future projects in the Kanawha River Basin where most of the damage in the 2016 flood occurred.

While I fully intend to see that this study receives a new start, it will do little good if recommended projects are held up due to analyses that sort of disregard the needs of certain communities. In that same vein, it is also important that Congress promote efficiencies in the Corps' project delivery process to support its central missions.

The Corps decisionmaking process is often perceived as a black box by non-Federal sponsors without the requisite expertise or experience, and this should change. The Congress should continue to encourage and enhance assistance on the part of the Corps to communities and non-Federal sponsors.

People on the ground know what their water resource challenges are, and the experiences and expertise of the hard working men and woman at the Corps can help inform them of paths forward to address those challenges.

As we make these changes and other changes, however, it is important that we do not become too overly prescriptive. Our Nation's water resources are diverse.

As I said, communities know better about their unique needs than policymakers here. So we must preserve the important role of non-Federal sponsors in the development and delivery of projects.

In closing, let me reiterate my gratitude for our witnesses for being here today, and I thank Chairman Carper for having this hearing. The mission of the Corps is more critical than ever, and the testimony we hear today will inform this Committee as it continues its integral role.

Mr. Chairman, I would like to take a point and introduce a friend of mine, but also a great West Virginian, who is on our panel before we begin our testimony.

Senator CARPER. I am not going to ask the witnesses to stand up, but we have a couple really tall guys here, and you are right between them. Take it away.

Senator CAPITO. Take it away. I am really pleased to have with us today Robert McCoy from Sissonville, West Virginia. Robert and I have known each other for several years. He is the President and CEO of Amherst Madison, which employs over 350 people.

They are a marine transportation construction and repair business. It has been in business since 1893.

Robert is a father of two, a daughter who is at the University of Charleston, and a 14 year old son. He went to West Virginia State University. He was born in Matewan, and we are really happy, Robert, that you are here.

Mr. Chairman, you have to know, since you are the one who can crack the funniest jokes, this is the real McCoy, right here.

[Laughter.]

Senator CAPITO. I know. He has probably heard it a hundred times.

Anyway, welcome Robert, and all the other witnesses.

Thank you.

Senator CARPER. That was good. I understand we have been joined by Mario Cordero remotely. Is that correct? He is Executive Director of the Port of Long Beach, California. He is also an attorney and the current Chairman of the Board of the American Association of Port Authorities.

Mario, I was a midshipman many, many years ago in the Navy. I was stationed on a big, 1,000 foot long jumbo oiler Navy ship at the Long Beach Naval Station. So I have some fond memories of Long Beach and the time that I spent there that year.

Mr. Cordero is also an attorney and current Chairman of the Board of the American Association of Port Authorities.

Welcome. Bienvenido.

Our second witness is Mr. Collin O'Mara. Collin is the President and Chief Executive Officer of the National Wildlife Federation, America's largest wildlife conservation organization with 53 State and territorial affiliates and nearly 6 million hunters, anglers, birders, gardeners, hikers, paddlers, and wildlife enthusiasts. That is a lot of people.

Prior to leading the National Wildlife Federation, Collin led the Delaware Department of Natural Resources and Environmental Control as our Cabinet Secretary from 2009 to 2014. He did a great job. I have very fond memories of his service in our State. I am proud to claim him as our own.

The third witness is Amy Larson. Amy is the Founding Partner of Larson Strategies LLC and has more than 25 years of water resources and waterways transportation policy and funding expertise.

Now, we look forward to hearing from our panel, our witnesses.

We are going to start with Mario Cordero.

Mr. Cordero, you are recognized for your statement. Please proceed.

STATEMENT OF MARIO CORDERO, EXECUTIVE DIRECTOR, PORT OF LONG BEACH

Mr. CORDERO. Chairman Carper, Ranking Member Capito, and members of the Committee, I want to thank you for the opportunity to provide remarks to the Environment and Public Works

Committee on Examining the Benefits of Investing in USACE Water Infrastructure Projects.

I am Mario Cordero, Executive Director of the Port of Long Beach. The Port of Long Beach is the second largest containerized cargo port in the United States and is a major economic contributor to our local, State, and national economy. Maritime traffic moves in excess of 80 million tons annually through the port, which drives $200 billion in annual economic activity and supports 2.6 million U.S. jobs and more than 576,000 jobs in Southern California.

I am speaking on behalf of the American Association of Port Authorities, AAPA, as its chairman. My remarks today will focus on port experiences partnering with the Corps, planning for resiliency, sea level rise, and priorities for future legislation.

AAPA members appreciate that Congress understands the importance of our seaports' role in the U.S. economy. Seaports and their maritime partners sustain 31 million jobs and generate economic activity representing 26 percent of the U.S. economy. Constructing and maintaining the Nation's 21st century maritime infrastructure is essential to the Nation's economic future.

Public ports and their private sector partners are committed to this challenge, with plans to invest upwards of $155 billion by 2025 in port related facilities. These investments can only be fully realized when the Federal navigation assets managed by the Corps of Engineers are kept modern and in a state of good repair.

I thank the Environment and Public Works Committee members for their landmark WRDA 2020 legislation, which resolved the long standing issue of the full use of the Harbor Maintenance Trust Fund with equitable distribution for all ports: Small ports, national defense ports, and donor and energy transfer ports.

AAPA members are pleased that the House Fiscal Year 2022 Energy and Water Development appropriations bill has established a precedent for supporting this funding level. We look forward to the WRDA 2020 funds distribution approach when full implementation is effective in September 2022.

Federal navigation channels are the foundation of global freight movement. We have all witnessed the important role of ports and the supply chain through the COVID-19 pandemic, where ports and our labor partners were able to stay open and safely move freight, like personal protective equipment. These channels and port facilities must keep pace with the increasing size of the global fleet of ships. If we don't, we risk losing the water transportation cost savings that makes products like agricultural exports competitive in the global marketplace.

At the Port of Long Beach, our Deep Draft Navigation Improvements Feasibility Study, performed in collaboration with the United States Army Corps of Engineers, was conducted to identify opportunities to remove constraints, improve efficiencies, and reduce transportation costs.

Based on fiscal year 2021 discount rate of 2.5 percent and a 50 year period of analysis, the equivalent annual benefits and costs are estimated at $20 million and $5 million, respectively. The project is estimated to provide annual net benefits of $15 million and a benefit to cost ratio of 3.6.

In addition to navigation improvements, we are embarking on a $5 million project to repair wharves and have identified approximately $140 million in maritime infrastructure repair and replacement projects, including wharves, rock dikes, bulkheads needed to prevent potential impacts to critical port business operations.

The Port of Long Beach has been proactive in strategically preparing for and adapting to climate change, including impacts associated with sea level rise and coastal hazards through our Climate Adaption and Coastal Resiliency Plan. This plan, the first of its kind of a North American seaport, includes adaptive measures to address sea level rise and other risks to ensure continuity for port operations and protection to local communities surrounding the port.

AAPA members report that WRDA legislation has led to profound improvements in Corps processes. For example, the 3 year feasibility study process, partnering improvements with non-Federal sponsors being actively involved in the Corps, and aligning dredge projects will fill projects for the beneficial reuse of dredged material.

AAPA has three key issues for the WRDA as follows. One: Authorize for both new studies for navigation channel improvements and proceed to as well as construct navigation project improvements recommended by the Chief of Engineer reports. Two: Visibility of the Corps' plans to restore and properly maintain Federal navigation projects with the increased funding for full use of Harbor Maintenance Trust Fund revenues established by WRDA 2020. Three: Continue to identify process improvements for improved product delivery. AAPA will submit the list of specific streamlining improvements soon.

Finally, I want to thank the Committee leaders, members, and staff for their efforts to ensure that port related infrastructure like Federal navigation channels, jetties, and breakwaters are a part of any infrastructure investment legislation being developed. AAPA estimates that $3 billion would provide completion for funding of the Federal share of current level navigation and channel improvements.

I commend the Committee and leadership for recognizing the nexus between water resources development and economic prosperity. I urge you to develop and pass both an infrastructure package and WRDA legislation at the earliest possible time.

I am happy to address any questions you may have.

Thank you so much for this opportunity to speak on behalf AAPA.

[The prepared statement of Mr. Cordero follows:]

Testimony by
Mr. Mario Cordero
Executive Director, Port of Long Beach, CA
Chairman of the American Association of Port Authorities (AAPA)
Before the
U.S. Senate Committee on Environment & Public Works
Hearing on
Examining the Benefits of Investing in USACE Water Infrastructure Projects
Wednesday, July 28, 2021
406 Dirksen Senate Office Building
10:00 AM EST

Chairman Carper, Ranking Member Capito and Members of the Committee, I want to thank you for the opportunity to provide remarks to the Environment and Public Works Committee on "Examining the Benefits of Investing in USACE Water Infrastructure Projects." I'm Mario Cordero, Executive Director of the Port of Long Beach. The Port of Long Beach is the second largest containerized cargo port in the United States and is a major economic contributor to our local, state and national economy. Maritime traffic moves in excess of 80 million tons annually through the port, which drives $200 billion in annual economic activity and supports 2.6 million U.S. jobs and more than 576,000 jobs in Southern California.

I'm also speaking on behalf of the American Association of Port Authorities, AAPA, as its Chairman. My remarks today will focus on port experiences partnering with the Corps, planning for resiliency, sea level rise and priorities for future legislation.

AAPA members appreciate that Congress understands the importance of our seaports role in the U.S. economy. Seaports and their maritime partners sustain 31 million jobs and generate economic activity representing 26% of the U.S. economy. Constructing and maintaining the Nation's 21st century maritime infrastructure is essential to the Nation's economic future. Public ports and their private-sector partners are committed to this challenge, with plans to invest upwards of $155 billion by 2025 in port-related facilities. These investments can only be fully realized when the Federal navigation assets, managed by the Corps of Engineers, are kept modern and in a state of good repair.

I thank the Environment and Public Works Committee members for their landmark WRDA 2020 legislation which resolved the long-standing issue of full use of the Harbor Maintenance Trust Fund with equitable distribution for all ports – small ports, national defense ports, and the donor and energy transfer ports. AAPA members are pleased that the House fiscal year 2022 Energy and Water Development appropriations bill has established the precedent of supporting this funding level. We look forward to the WRDA 2020 funds distribution approach when full implementation is effective in September 2022.

Federal navigation channels are the foundation of global freight movement. We have all witnessed the important role of ports and the supply chain throughout the Covid-19 pandemic, where ports and our labor partners were able to stay open and safely move freight like personal protective equipment. These channels and port facilities must keep pace with the increasing size of the global fleet of ships. If we don't, we risk losing the

water transportation cost savings that makes products like agricultural exports competitive in the global marketplace.

At the Port of Long Beach, our Deep Draft Navigation Improvements Feasibility Study, performed in collaboration with the United States Army Corps of Engineers, was conducted to identify opportunities to remove constraints, improve efficiencies, and reduce transportation costs. Based on a FY 2021 discount rate of 2.5 percent and a 50-year period of analysis (2027-2076), the equivalent annual benefits and costs are estimated at $20,960,000 and $5,868,000, respectively. The project is estimated to provide annual net benefits of $15,092,000 and a benefit-to-cost ratio of 3.6.

In addition to navigation improvements, we are embarking on a $5 million project to repair wharves, and have identified approximately $140 million in maritime infrastructure repair and replacement projects including wharves, rock dikes, and bulkheads needed to prevent potential impacts to critical Port business operations essential to the Nation’s economic future. The Harbor Maintenance Trust funds authorized through WRDA 2020 legislation will be used to fund these projects.

The Port of Long Beach has been proactive in strategically preparing for and adapting to climate change, including impacts associated with sea level rise and other coastal hazards through our Climate Adaption and Coastal Resiliency Plan. This plan, the first of its kind for a North American seaport, includes adaptive measures to address sea level rise and other

risks to ensure the continuity of Port operations and protection to local communities surrounding the Port.

AAPA members report that WRDA legislation has led to profound improvements in Corps processes. For example, the 3-year feasibility study process, partnering improvements with non-Federal sponsors being actively involved with the Corps; and aligning dredge projects with fill projects for the beneficial reuse dredged material.

AAPA's three key issues for the next WRDA are as follows:

1. Authorize for both (1) new studies for navigation channel improvements; and (2) proceed to as well as construct navigation project improvements recommended in Chief of Engineer's reports.

2. Visibility of the Corps plans to restore and properly maintain Federal navigation projects with the increased funding from full use of Harbor Maintenance Trust fund revenues as established in WRDA 2020.

3. Continue to identify process improvements for improved product delivery. AAPA will submit a list of specific streamlining improvements soon.

Finally, I want to thank Committee leaders, members and staff for their efforts to ensure that port related infrastructure like Federal navigation channels, jetties and breakwaters are a part of any infrastructure investment legislation being developed. AAPA estimates that $3 billion

would provide completion funding of the Federal share of current Federal navigation channel improvement projects. AAPA estimates $1.5 billion would rehabilitate the roughly 140 critically deficient navigation structures improving their ability to serve their function of enabling safe navigation, while addressing resilience issues associated with climate change and sea level rise.

AAPA believes a significant federal investment would grow the U.S. economy, increase family-wage supporting jobs, enhance America's international competitiveness and address environmental issues generate additional tax revenues.

I commend the Committee leadership for recognizing the nexus between water resources development and economic prosperity. I urge you to develop and pass both an infrastructure package and WRDA legislation at the earliest possible time. I'm happy to address any questions you have for me.

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Senator CARPER. We appreciate very much your joining us.

Thank you for that testimony, Mr. Cordero.

Next is Collin O'Mara.

Collin, you may begin when you are ready. Please proceed. Thank you.

STATEMENT OF COLLIN O'MARA,
PRESIDENT AND CEO, NATIONAL WILDLIFE FEDERATION

Mr. O'MARA. Thank you, Chairman Carper, Ranking Member Capito. It is great to be with all of you today.

Thank you for the invitation to testify on the vital issues of improving the resilience of our water resources and the communities and wildlife those resources sustain.

This conversation comes at a critical time. The flooding that we are seeing, the above average hurricane season, and it is time for some real talk, because we are facing real risks. The Ranking Member talked about the flood of 2016; we can talk about Hurricane Sandy. It is hitting every part of the country. It is affecting lives, livelihoods, perpetuating historic inequalities.

At the same time, we are seeing in places where we have healthy wetlands, streams, rivers, shorelines, they are protecting us from these extreme weather events. We are also seeing the devastating consequences when these systems have been paved over or degraded.

Unfortunately, despite this escalating damage that we are seeing, resilience investments that are proposed are only maybe 1, maybe 2 percent of the infrastructure package, both bipartisan piece and what comes after. This is woefully inadequate. There is virtually nothing for the Army Corps in many of these proposals right now of any magnitude. We believe we need at least $36 billion to make these investments in the coming years.

This is just simply pound foolish, as the Chairman laid out. We know that every dollar that we spend in resilience is going to save us $6 to $8 in avoided damages, avoided costs.

But because of our budget rules, we score the $1, we don't account for the $6, and then you all fight with Appropriations trying to get resources. It is costing us hundreds of billions of dollars in impacts.

Because of these rules, it is easier to spend hundreds of billions of dollars after the fact, after the disaster occurs, than it is to invest in that ounce of prevention that could have mitigated the damage in the first place.

As a result, we spent almost $300 billion in the last 10 years on supplemental disaster appropriations, a fraction of which could have funded a lot of the backlog, a third of which could have funded the backlog that Senator Carper talked about.

The evidence is incredibly clear that the best way to protect communities most cost effectively is to restore the natural systems. It is hard to believe that Hurricane Sandy was almost 10 years ago, but since then, coastlines and flood plain communities have been pummeled by disaster after disaster.

As we have shown in a recent report, The Protective Value of Nature, prioritizing the protection and restoration of wetlands and

other natural systems would have saved billions upon billions of dollars in the past, and would save even more in the years ahead.

As Senator Whitehouse said just yesterday, this year is the worst year of the last 10. It is going to be the best year of the next 10. We need to avoid the unintended consequences, also, that can be created by structural solutions that just push the floodwater into other communities.

As we experience more frequent weather events, the Army Corps really needs a new playbook, one that treats nature as an ally. The Army Corps has been asked to fight against nature for almost two centuries, embedding this approach into its organizational structure and its very DNA. But we know now that healthy systems are essential for our well being and our survival.

Building upon the important provisions from the previous Water Resources Development Act and ones before that, we must accelerate this thinking toward natural systems, as Senator Carper mentioned. We must overcome the Corps' entrenched over reliance on structural solutions, overhaul the siloed approach to project planning, and establish an integrated approach that works with nature to bolster resilience and protect communities.

We have four specific recommendations. First, we urge the Committee to make critically needed reforms to the Corps cost-benefit analysis, the benefit-cost analysis process. It is a process that is fundamentally broken in several ways.

To make the best choice among alternatives, the Corps must properly account for all costs and all benefits, including risk reduction from flooding, water quality improvements, soil stabilization, carbon sequestration, wildlife habitat, expanded recreational opportunities. If these benefits are lost to a project, they should also be counted as a project cost.

Second, we encourage the Committee to continue to focus on environmental justice, as you have in the SRF debates a few months ago, by directing the Corps to focus more on remediating toxic pollution in industrial and urban waterway projects in places like the Ohio River, the Delaware River, the Lower Mississippi.

We encourage expanding the pilot projects in economically distressed communities, as Senator Capito just mentioned.

We suggest establishing a senior advisor for environmental justice and an environmental justice advisory council, advancing innovation in this space, and hiring more folks of color and contracting more minority businesses across the Corps.

Third, we urge Congress to establish a resilience directorate to ensure that resilience measures, especially the restoration of natural systems, are fully integrated and leveraged across flood protection, navigation, ecological restoration business lines, which is really essential to protect communities, advance equitable solutions, and protect wildlife. To be effective, this kind of inter-departmental directorate should be within the Office of the Chief of Engineers and have significant budget authority.

Fourth, we must vastly improve the condition and collaboration with the Fish and Wildlife Service and State, territorial, and tribal wildlife agencies to recover thousands of at risk fish and wildlife species that live in Corps project areas.

These reforms will take concerted bipartisan push to shift centuries of planning and practices of the Corps, but they will bear immense benefits to people and wildlife alike, saving lives and money in the process.

On behalf of the National Wildlife Federation, I just want to thank you for committing to making these types of reforms and leveraging nature as an ally. I look forward to your questions.

Thank you.

[The prepared statement of Mr. O'Mara follows:]

Testimony of Mr. Collin O'Mara
President and CEO of the National Wildlife Federation
Before the United States Senate
Committee on Environment and Public Works
"Examining the Benefits of Investing in USACE Water Infrastructure Projects"

July 28, 2021

Chairman Carper, Ranking Member Capito, and Members of the Committee, thank you for the opportunity to testify before you today on the vital issue of improving the resilience of our nation's water resources and the communities and wildlife those resources sustain.

The National Wildlife Federation is the nation's largest conservation advocacy organization with more than six million members and supporters and 53 state and territorial affiliates. Our members represent the full spectrum of people who care deeply about wildlife: they are bird and wildlife watchers, hikers, gardeners, anglers, hunters, forest stewards, 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.

Today, the resilience of America's communities and infrastructure is being tested like never before. Increasingly severe storms and floods, extreme droughts, massive wildfires, and record high temperatures—fueled by a rapidly changing climate—are wreaking havoc on people and wildlife alike. They're also exacerbating historic inequities among vulnerable populations. The changing climate, combined with historic and ongoing degradation of vast swaths of habitat, have thrust America's wildlife into crisis. Our freshwater species, which are most affected by water resources projects, have been particularly hard hit. The overwhelming societal and economic toll of these crises affects us all.

The Army Corps of Engineers (Corps) plays an integral role in our nation's response to these interconnected crises, bolstering community resilience, in addressing generational inequities, and securing clean and healthy waters for people and wildlife alike. But to do this—and break the cycle of suffering caused by natural disasters—the Corps needs a new playbook that sees nature as our ally and not our enemy.

The Corps has been asked to fight against natural systems for more than 200 years, embedding this approach into its organizational structure and its very DNA. But we now know that healthy natural systems are essential for our well-being and our very survival. As we struggle to adapt to the increasingly dire effects of a changing climate, the Corps must much more to embrace nature as an essential ally. And this change must happen quickly. We do not have the time for incremental evolution if our communities, economy, and wildlife are to survive and thrive. The Corps must be quickly transformed into an agency that protects and uses nature to build resilience into projects, operations, and planning across all Corps business lines.

Recent bipartisan water resources bills developed by this Committee and passed by Congress have made important strides to this end, directing the Corps to modernize its approach to project planning, including by protecting and leveraging the risk-reduction potential of our natural defenses like healthy wetlands and floodplains. Congress has also directed the Corps to improve its engagement with environmental justice and Tribal communities—a critical step toward more equitable project delivery. The next water resources development bill comes at a pivotal moment and presents an opportunity to build upon this momentum to increase the Corps' capacity to contribute strategically to our nation's overall resilience before disasters strike.

This conversation comes at a critical time as Congress debates infrastructure investments. Despite the devastating and escalating drought, fires, flooding, and hurricanes of recent years, resilience investments continue to receive woefully inadequate attention (currently only 1-2% of overall proposed infrastructure spending and virtually nothing for the resilience and ecological restoration programs of the Corps). This is simply inadequate, especially when we know that every $1 that we spend on pre-disaster mitigation will save $6 to $8 in avoided costs and damages, including hundreds of billions of dollars in future federal debt. We believe that the root of the problem is archaic budgetary rules that make it much easier to spend after a disaster through a supplemental appropriation than it is to invest in the ounce of prevention that could have mitigated the damage in the first place. The fundamental disconnect is that CBO rules currently score the $1 of mitigation, but does not account for the long-term federal savings from avoided expenditures on disaster relief and recovery. This is particularly shortsighted when considering that we have spent nearly $300 billion in disaster supplementals over the past decade, much of which could have been avoided, and that number will grow significantly in the next decade. We would strongly encourage this committee to work with other committees of jurisdiction and Leadership to allow resilience investments with a demonstrated long-term savings to be exempted from such rules to allow the level of investment necessary to protect communities and wildlife from floods, hurricanes, fires, drought, and extreme temperatures. While we appreciate the proposed $50 billion investment in resilience, we believe that the level needed to keep communities safe should be on the order of $200-$250 billion (including at least $36.5 billion for the resilience and restoration programs of the Corps and EPA and $10 billion for NOAA's resiliency grants program). This would prevent the need nearly a trillion dollars of post-disaster federal spending in the coming decade.

In the testimony below, we provide additional details about the crises facing our communities and wildlife and outline recommendations for alleviating these crises by: leveraging all Corps programs to improve resilience; removing outdated technical barriers to resilience planning; improving planning for fish and wildlife resilience; and advancing resilient solutions to redress environmental injustices. The National Wildlife Federation urges Congress to implement these recommendations to advance the resilience of our nation's water resources.

Increasingly Severe Storms and Floods Are Wreaking Havoc on Communities

The nation is facing increasingly severe storms and floods, extreme droughts, massive wildfires and record high temperatures, fueled by a rapidly changing climate.[1] We have suffered more billion-dollar

[1] For example, a recent study concludes that climate change-induced sea level rise accounted for 13% of the damage caused by Hurricane Sandy (approximately $8.1 billion of the $62.5 billion in total damages) and 54% of the people affected (71,000 people out of the total of 131,000 people affected). Strauss, B.H., Orton, P.M., Bittermann, K. et al Economic damages from Hurricane Sandy attributable to sea level rise caused by anthropogenic climate change. Nat Commun 12, 2720 (2021). https://doi.org/10.1038/s41467-021-22838-1.

inland flood disasters in the last decade than in the prior three decades combined. We have endured more billion-dollar hurricane disasters in the last five years than in the decade before.[2] The human suffering caused by these and many smaller disasters is unfathomable, with low-income and frontline communities bearing a disproportionate share of the harm.

The ever-mounting toll of human suffering and economic loss from natural disasters shows no sign of abating and every sign that it will continue to grow. Research shows that both the intensity and number of extreme storms will continue to increase appreciably as our climate warms. In some locations, future extreme events could be twice as intense as historical averages.[3] By 2100, previously rare extreme rainstorms could happen every two years.[4] By 2050, high tides could cause "sunny day" flooding in coastal communities 25 to 75 days a year.[5] By the end of the century, homes and commercial properties currently worth more than $1 trillion could be at risk of chronic flood inundation.[6]

Storms and floods in the U. S. disproportionately harm Black, Latinx, Indigenous, low-income, and frontline communities. For example, the neighborhood that suffered the worst flood damage during Hurricane Harvey was in an area of southwest Houston where 49 percent of the residents are people of color. Damage from Hurricane Katrina was most extensive in the region's Black neighborhoods. In four of the seven ZIP codes that suffered the costliest flood damages from Hurricane Katrina at least 75 percent of residents were Black.[7] Over the next 30 years, the "risk of coastal floods damaging or destroying low-income homes will triple" resulting in the flooding of more than 25,000 affordable housing units each year.[8]

In addition, "while severe storms fall on the rich and poor alike, the capacity to respond to and recover from flooding is much lower in socially vulnerable populations that even in the best of times are struggling to function."[9] Even low levels of flooding can wreak havoc on buildings and the residents who live in them, damaging belongings, disrupting electrical equipment, contaminating water sources and septic systems, and generating mold. These impacts can "cause profound disruptions to families already struggling to make ends meet" and can be particularly challenging to remedy in affordable housing units, which are often in poor repair to begin with.[10]

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[2] NOAA National Centers for Environmental Information (NCEI) U.S. Billion-Dollar Weather and Climate Disasters (2021) (https://www.ncdc.noaa.gov/billions/), DOI: 10.25921/stkw-7w73 (inland flooding "caused by billion-dollar hurricanes (i.e., Harvey, Florence, Matthew) has also increased").

[3] E&E News, Anne C. Mulkern, Climate drives rise in global damage from storms — study, July 12, 2021; Madakumbura, G.D., Thackeray, C.W., Norris, J. et al. Anthropogenic influence on extreme precipitation over global land areas seen in multiple observational datasets. Nat Commun 12, 3944 (2021). https://doi.org/10.1038/s41467-021-24262-x.

[4] Inside Climate News, New Study Shows Global Warming Intensifying Extreme Rainstorms Over North America, June 2, 2020; Megan C. Kirchmeier-Young, Xuebin Zhang, Human influence has intensified extreme precipitation in North America, Proceedings of the National Academy of Sciences Jun 2020, 117 (24) 13308-13313; DOI:10.1073/pnas.1921628117.

[5] NOAA High Tide Flooding Report, 2021 State of High Tide Flooding and Annual Outlook.

[6] Union of Concerned Scientists. Underwater: Rising Seas, Chronic Floods, and the Implications for US Coastal Real Estate (2018).

[7] Thomas Frank, Flooding Disproportionately Harms Black Neighborhoods, Scientific American (June 2, 2020).

[8] Maya K Buchanan *et al*, Sea level rise and coastal flooding threaten affordable housing, *Environ. Res. Lett.*, 15 124020/ (2020).

[9] National Academies of Sciences, Engineering, and Medicine 2019. Framing the Challenge of Urban Flooding in the United States. Washington, DC: The National Academies Press. https://doi.org/10.17226/25381.

[10] Buchanan *et al*, Sea level rise and coastal flooding threaten affordable housing (see footnote 8).

The Changing Climate and Massive Habitat Losses Have Pushed Wildlife to the Brink

The changing climate, combined with historic and ongoing destruction and degradation of vast swaths of habitat, have pushed America's wildlife into crisis, helping to drive the planet's ongoing 6th Mass Extinction of species.[11] As many as one-third of America's plant and wildlife species are vulnerable, with one in five imperiled and at high risk of extinction.[12]

America's freshwater species, which are most affected by water resources projects, have been particularly hard hit. Approximately 40 percent of the nation's freshwater fish species are now rare or imperiled.[13] Nearly 60 percent of the nation's globally significant freshwater mussel species are imperiled or vulnerable, and an additional 10 percent are already extinct.[14]

Our wildlife crisis extends well beyond rare and endangered species, and now affects many widespread and previously abundant creatures, such as the little brown bat, monarch butterfly, and many of our most beloved songbirds. State fish and wildlife agencies have identified more than 12,000 species nationwide in need of conservation action, and fully one-third of North America's bird species require urgent conservation attention.[15] The best way spur collaborative, proactive recovery efforts to save these thousands of species of greatest conservation need is to pass the bipartisan Recovering America's Wildlife Act (S.2372) and we respectfully encourage this committee to take immediate action.

The historic loss and degradation of wildlife habitat across the country makes each additional acre of wetland lost or natural stream segment channelized even more consequential for the long-term viability of our nation's fish and wildlife. At least ten states have lost more than 70 percent of their wetlands, which provide essential fish and wildlife habitat, while 22 states have lost 50 percent or more of their original wetland acreage.[16] The construction of levees to reduce the frequency and duration of flooding

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[11] Gerardo Ceballos, Ehrlich Paul, Raven Peter, Vertebrates on the brink as indicators of biological annihilation and the sixth mass extinction. Proceedings of the National Academy of Sciences Jun 2020, 117 (24) 13596-13602; DOI: 10.1073/pnas.1922686117 ("The ongoing sixth mass extinction may be the most serious environmental threat to the persistence of civilization, because it is irreversible. . . . the sixth mass extinction is human caused and accelerating. . . . species are links in ecosystems, and, as they fall out, the species they interact with are likely to go also. . . . Our results reemphasize the extreme urgency of taking massive global actions to save humanity's crucial life-support systems.")

[18] U.S. Geological Survey, Ecological Health in the Nation's Streams, Fact Sheet 2013-3033 (July 2013); Carlisle, D.M., Meador, M.R., Short, T.M., Tate, C.M., Gurtz, M.E., Bryant, W.L., Falcone, J.A., and Woodside, M.D., 2013, The quality of our Nation's waters—Ecological health in the Nation's streams, 1993–2005: U.S. Geological Survey Circular 1391 (120 pp).

[12] Stein, B. A., L. S. Kutner, J. S. Adams eds. 2000. Precious Heritage: The Status of Biodiversity in the United States. New York: Oxford University Press.

[13] Jelks, H. L., S.J. Walsh, N.M. Burkhead, et al. 2008. Conservation status of imperiled North American freshwater and diadromous fishes. Fisheries. 33: 372-407.

[14] Williams, J. D., M. L. Warren, K. S. Cummings, J. L. Harris, and R. J. Neves. 1993. Conservation status of freshwater mussels of the United States and Canada. Fisheries 18: 6–22; Lydeard, C., R. H. Cowie, W. F. Ponder, et al. 2004. The global decline of nonmarine mollusks. BioScience 54 321-330.

[15] Stein, B. A., N. Edelson, L. Anderson, J. Kanter, and J. Stemler. 2018. Reversing America's Wildlife Crisis: Securing the Future of Our Fish and Wildlife. Washington, DC: National Wildlife Federation.

[16] T.E. Dahl and S.M. Stedman. 2013. Status and trends of wetlands in the coastal watersheds of the Conterminous United States 2004 to 2009. U.S. Department of the Interior, Fish and Wildlife Service and National Oceanic and Atmospheric Administration, National Marine Fisheries Service. (46 pp); Dahl, T.E. 2006. Status and trends of wetlands in the conterminous United States 1998 to 2004. U.S. Department of the Interior, Fish and Wildlife

in the lower Mississippi River Valley is the single largest contributor to wetland losses in the country, according to the Department of the Interior.[17] Fish and wildlife have also been severely harmed through the pervasive alteration of natural stream flows, including from reservoirs and locks and dams, which have occurred in 86 percent of the almost 3,000 streams assessed by the U. S. Geological Survey.[18]

It is past time that we turn to the most ingenious engineer on the planet—nature—to help protect people and wildlife alike with natural infrastructure.

A New, More Effective and Fiscally-Responsible Approach is Urgently Needed

If our communities, economy, and wildlife are to survive and thrive, we must quickly implement a new approach to managing the nation's water resources. Maintaining the status quo, relying on incremental change, or trusting in vague promises of future changes to entrenched planning processes, will relegate our communities and wildlife to repeated cycles of ever-increasing hardship and loss. This in turn will lead to calls for more and more water resources projects that will be forced to compete for construction dollars with the Corps' already significant $109 billion backlog of projects.

A new approach that prioritizes nature-based pre-disaster mitigation and resilience will save taxpayers money and make our communities safer. Far too often, we approach water resources planning through the lens of disaster response and recovery rather than through proactive efforts to increase the resilience of vulnerable communities and water resources before disaster strikes, as evidenced by the Corps' history of supplemental appropriations. From 2005 to 2016, the Corps received $31. 4 billion in supplemental funding, which amounts to almost half of the agency's annual discretionary appropriations over that same period.[19] Of those supplemental funds, 87 percent ($27.2 billion) was provided to respond to flooding and other disasters. With ever increasing effects from storms, these emergency supplemental appropriations have also dramatically increased over time, with the Corps receiving "$1.1 billion in the 1990s, $19.2 billion in the 2000s, and $29.0 billion in the 2010s."[20] Many of these expenditures could have been avoided, if we had invested in the necessary resilience projects. Even though we know that ever $1 we invest in pre-disaster mitigation, will save us $6 is avoided costs, Congressional budgetary rules continue to make it much easier to fund an emergency supplemental

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Service, Washington, D.C. (112 pp); Dahl, T.E. 2000. Status and trends of wetlands in the conterminous United States 1986 to 1997. U.S. Department of the Interior, Fish and Wildlife Service, Washington, D.C. (82 pp); Dahl, T.E., and Johnson, C.E., 1991, Status and trends of wetlands in the conterminous United States, mid-1970's to mid-1980's. U.S. Department of the Interior, Fish and Wildlife Service, Washington, D.C. (28 pp).

[17] Report to Congress by the Secretary of the Interior, The Impact of Federal Programs on Wetlands, Volume II, at 145 (1994). Approximately 80 percent of the bottomland hardwood wetlands in the lower Mississippi River basin have already been lost approximately. Report to Congress by the Secretary of the Interior, The Impact of Federal Programs on Wetlands, Volume I at 39.

[18] U.S. Geological Survey, Ecological Health in the Nation's Streams, Fact Sheet 2013-3033 (July 2013); Carlisle, D.M., Meador, M.R., Short, T.M., Tate, C.M., Gurtz, M.E., Bryant, W.L., Falcone, J.A., and Woodside, M.D., 2013, The quality of our Nation's waters—Ecological health in the Nation's streams, 1993–2005: U.S. Geological Survey Circular 1391 (120 pp).

[19] Congressional Research Service, Army Corps Supplemental Appropriations: History, Trends, and Policy Issues, Updated January 3, 2018.

[20] Congressional Research Service, Supplemental Appropriations for Army Corps Flood Response and Recovery, February 20, 2020. Of the $29.0 billion in supplemental funding provided in the 2010s, $18.6 billion was for completing new or ongoing flood risk reduction projects. During the same period, construction funding for flood risk reduction projects through the regular appropriations process averaged $8.4 billion a year. Id.

appropriation after a disaster than to invest in the ounce of prevention that could have saved money and reduced damage in the first place.

We must implement a system that can break the cycle of disaster suffering, including by building resilience into Corps projects, operations, and planning across all Corps business lines. A resilient system can withstand changing conditions and readily recover from extreme floods, storms, and droughts. Working with nature is an indispensable part of resilience because healthy natural systems provide free and self-sustaining protections and benefits, including reducing flood risks, sustaining fish and wildlife, improving water quality, regulating sediment loading, stabilizing soil, sequestering carbon, and providing recreational opportunities.

Building resilience into Corps planning means protecting our wetlands and rivers, along with the hydrologic processes that maintain these systems. It means restoring critical natural systems that have been lost or damaged. It means pre-planning to ensure that disaster response activities will build community resilience for future storms and increase habitat for wildlife. Critically, it means making the use of natural infrastructure the rule for Corps projects rather than the exception.

The value and importance of natural infrastructure is well recognized, as evidenced by the numerous tools and authorities to drive its use enacted in the bipartisan Water Resources Development Act of 2020. These provisions elevate consideration of nature's potential to improve our nation's resilience, and 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. Notably, the diverse environmental benefits provided by sustainable and cost-effective natural infrastructure can be particularly valuable for under-served communities suffering from flooding and other cumulative 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.

An Ounce of Prevention is Worth a Pound of Cure

The value of natural systems for protecting communities is well recognized, and evidence of their effectiveness in reducing flood and storm damages continues to mount, as highlighted in the National Wildlife Federation's report on The Protective Value of Nature[21] and in the examples provided as an attachment to this testimony. 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."[22]

As an 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

[21] Glick, 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.

[22] Restore America's Estuaries, Jobs & Dollars BIG RETURNS from coastal habitat restoration (September 14, 2011).

coverage.[23] The forest and other conservation lands that make up the 28,000 acre Meramec Greenway along the Meramec River in southern Missouri contribute about $6,000 per acre in avoided flood damages annually.[24] Wetlands in the Eagle Creek watershed of central Indiana reduce peak flows from rainfall by up to 42 percent, flood area by 55 percent, and maximum stream velocities by 15 percent. [25] 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.[26]

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.[27] Natural infrastructure also has the significant added benefits of being self-sustaining and avoiding the risk of catastrophic structural failures. Importantly, natural infrastructure can work both alone and in combination with more traditional grey infrastructure to reduce flood and storm risks.

Structural solutions, while necessary in some places, can cause significant damage in other locations. For example, a study published just this month found that building one large seawall in a small portion of California's San Francisco Bay could significantly increase flooding in other areas, causing up to $723 million of flood damages to those areas during each flood event[28]—an estimate that is highly conservative as it "doesn't account for potential damage to ecosystems and fisheries."[29]

Recommendations

Through our extensive experience with Corps projects across the country—and with communities affected by those projects—it is clear that community and water resources resilience will only be achieved if the Corps embraces a shift in its approach to project design and planning to prioritize

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[23] Narayan, 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.
[24] Kousky, C., M. Walls, and Z. Chu. 2014. Measuring resilience to climate change: The benefits of forest conservation in the floodplain. p 345–360. In: V.A. Sample and R.P. Bixler, eds. Forest Conservation and Management in the Anthropocene: Conference Proceedings. Proceedings RMRS-P-71. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station.
[25] Javaheri, A., and M. Babbar-Sebens. 2014. On comparison of peak flow reductions, flood inundation maps, and velocity maps in evaluating effects of restored wetlands on channel flooding. Ecological Engineering 73: 132–145.
[26] Bob 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).
[27] Borja 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.
[28] Michelle Hummel, Griffin R., Arkema K., Guerry A., PNAS 2021 Vol. 118 No. 29 e2025961118, Economic evaluation of sea-level rise adaptation strongly influenced by hydrodynamic feedbacks https://doi.org/10.1073/pnas.2025961118 (July 2021) (documenting that the seawall would divert 36 million cubic meters of flood waters (9.5 billion gallons) onto other communities, and demonstrating the value of natural infrastructure for alleviating flooding and damages along other stretches of the coastline.).
[29] Matt Simon, Be very careful where you build that seawall, WIRED (July 14, 2021).

protecting, restoring, and using healthy natural systems to bolster community resilience. To help the Corps achieve these vital goals, the National Wildlife Federation respectfully urges Congress to enact the policy reforms outlined below in the next Water Resources Development Act (WRDA).

We also urge Congress to ensure that the Corps continues to swiftly advance important ecosystem restoration efforts, including those designed to restore America's Everglades, coastal Louisiana, and the Ohio River, the Delaware, and the effort to stem the ongoing threat and harm from invasive carp through the Brandon Road Lock and Dam project. The National Wildlife Federation greatly appreciates the committee's role in advancing and overseeing the Corps' implementation of these projects that are so vitally important to the health, well-being, and resilience of people and wildlife.

1. Remove Outdated Technical Barriers to Resilience Planning

The Water Resources Development Act of 2020 enacted a suite of planning reforms that provide critical tools for improving the resilience of our vital natural infrastructure—our rivers, streams, floodplains, wetlands, and coasts—and the wildlife and communities that rely on those resources. However, Corps planners remain hampered by a suite of outdated technical barriers to effective resiliency planning. To help remove these barriers and advance strategic resiliency planning, Congress should modernize the Corps' assessment of project benefits and costs and provide tools needed to advance resilient solutions.

Modernize the Corps' Assessment of Project Costs and Benefits

One of the key barriers is the Corps' current approach to calculating project benefits and costs—a process that in many ways is fundamentally broken. Among other things, the outdated procedures used by the Corps: (1) fail to capture critical benefits provided by natural infrastructure, especially when that infrastructure can lessen the impact of a future storm or natural disaster; (2) fail to equitably evaluate flood damage benefits provided to disadvantaged and low-income communities; and (3) fail to account for the inherent limitations on the use of benefit-cost analysis as a precise decision tool. These problems are magnified by the Corps' tangled array of outdated guidance documents and directives that add to the unwieldiness of the Corps' current approach.

While the Corps' upcoming interagency guidelines for implementing the Planning Principles, Requirements, and Guidelines should, if properly implemented, provide important guidance for addressing some of these problems, Congressional action would ensure that the Corps accurately quantifies the full array of benefits whenever possible and fully accounts for all project costs, including by directing the Corps to:

- Comprehensively evaluate and include as benefits the value of: ecosystem services gained as a result of project construction and operation; and federal subsidies and/or federal disaster payments that would be avoided if a project reduces or eliminates uses that would trigger such payments.[30] Congress should also prohibit the Corps from counting project benefits produced by draining or degrading wetlands and from counting flood damage reduction benefits on conservation lands, and lands subject to flood easements.

- Equitably account for the benefits provided to disadvantaged and low-income communities. The Corps' current practice of calculating flood damage reduction benefits based on home prices can

[30] Ecosystem services include, but are not limited to, flood risk reduction, wildlife habitat, water quality, sediment regulation, soil stabilization, carbon sequestration, and recreation.

create significant barriers to the approval of flood projects critical to the safety and well-being of such communities.

- Accurately account for the true costs of a project by incorporating site-specific conditions and challenges into the assessment of project cost[31]; including the value of ecosystem services lost as a result of project construction and operations as a project cost; include full life-cycle costs into the cost assessment, including the costs of any future rehabilitation; and accounting for sub-optimal funding streams. This information is essential for establishing the true cost of a particular alternative.

- Apply the discount rate in a manner that accounts for the multigenerational benefits delivered by natural and nature-based projects that reduce future risks and restore ecosystems that will grow and build over time.

These changes are vitally important for improving Corps planning. However, no amount of tinkering with the benefit cost analysis process can compel the Corps to find the most equitable and environmentally-protective solution to a particular water resources problem, as explicitly required by longstanding federal law and policy.[32] Nor will benefit-cost changes compel Corps planners to meaningfully explore—and where appropriate recommend—the protection and use of natural systems to solve water resources problems. To address these problems, Congress should establish clear criteria to ensure that only projects that fully account for such legal and policy requirements are being compared through the benefit-cost analysis process, and enact the other reforms outlined in this testimony.

Provide Critical Tools for Resilient Solutions

Congress should ensure that the Corps has the tools it needs to develop and implement resilient solutions, including by:

- Eliminating an arbitrary, perceived barrier to comprehensive resilience planning by making "community and natural systems resilience" a co-equal project purpose for every water resources project. It is our experience that Corps planners typically believe they are prohibited from advancing activities that would increase resilience if those activities do not fall under a project's authorized purpose.

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[31] The failure to meaningfully assess conditions on the ground can lead to significant cost increases that add to the financial burdens on non-federal sponsors and federal taxpayers. In 2013, the Government Accountability Office found that at least two-thirds of the 87 Corps flood control projects budgeted for construction between FY2004 and FY2012 experienced cost increases. One project cost $10 million more than the authorized estimate because the construction site could not be accessed without carrying out major rehabilitation of a tunnel access point. The cost of a pumping plant required by a second project increased from the original estimate of $800,000 to $10.7 million due to design changes required to handle the actual site conditions. Government Accountability Office, Army Corps of Engineers, Cost Increases in Flood Control Projects and Improving Communication with Nonfederal Sponsors, GAO-14-35 (December 2013) at 11, 14, 15.

[32] These are among the well-recognized, inherent limitations of the benefit-cost analysis process which include: the inability to fully capture equity considerations and other relevant costs and benefits through quantitative assessments; the inability of the process to account for requirements and restrictions established by federal law and policy; and the inherent uncertainties associated with fully assessing project benefits and costs. National Research Council, Analytical methods and Approaches for Water Resources Project Planning, 2004 at 43 (National Academies Press).

- Facilitating the Corps' ability to focus on activities that increase resilience by: establishing a non-federal cost share for operation and maintenance of low use segments of the Inland Waterway System to minimize damage to those river segments if continued maintenance is not a priority for the non-federal sponsor; and accelerating the deauthorization and disposition of outdated infrastructure.

- Directing the Corps to map the many flood easements that the agency has already purchased across the country to facilitate consideration of those easements when planning future projects, and directing use of flood easements as an appropriate natural infrastructure solution.

2. Redress Environmental Injustices Through Resilient Solutions

The National Wildlife Federation appreciates the important provisions enacted in the Water Resources Development Act of 2020 that direct the Corps to improve consultation and coordination with Tribes and disadvantaged communities, prioritize resiliency planning for economically disadvantaged communities, and establish an important pilot program to facilitate effective flood risk management planning for underserved communities. However, much more needs to be done to redress pervasive environmental injustices that are deeply embedded in our systems and policies, and to ensure accountability within the agency as it seeks to better serve the most vulnerable communities. To that end, we urge Congress to take at least the following steps to build on the important progress made in WRDA 2020:

- Incorporate toxics remediation into ecological restoration, navigation, and flood resilience projects: For too long, Corps projects have failed to sufficiently remediate toxics in their project areas. We see this when some dredging project stir up heavy metals and polychlorinated biphenyls (PCBs) or when flood mitigation projects fail to consider the potential for inundation of heavily contaminated sites as we've recent recently during hurricanes impacting Texas. Significant opportunities exist to pilot the integration of toxic pollution remediation into ecological restoration, navigation, and flood resilience projects, such as in the Ohio River, the Delaware River (especially the Christina River), or the lower Mississippi (especially Cancer Alley). When conducting work in waterways or regions with high levels of pollutants, Congress should direct the Corps to coordinate closely with EPA, state environmental agencies, and regional coordinating bodies, such as the Delaware River Basin Commission or the Ohio River Valley Water Sanitation Commission, to maximize remediation of toxics to the greatest extent practicable. One effective model that could be replicated nationally is Delaware's Watershed Approach to Toxics Assessment and Restoration (WATAR) that works across brownfield and aquatic remediation programs at the state and federal levels to determine the source of persistent, bioaccumulative, and toxic substances (PCBs, dioxins and furans, mercury, organochlorine pesticides, etc.) and to implement innovative remediation strategies in urban and industrial areas. Ensuring sufficient funding for these efforts is critical because these working or industrial urban waterways historically only receive a fraction of the restoration investments of destination waterbodies like the Great Lakes or Chesapeake Bay.

- Increase Opportunities for Assistance: Congress should greatly expand the ten-community Pilot Program for Economically Disadvantaged Communities established by Section 118(b) of WRDA 2020. Congress should establish a separate program within the Corps to provide resiliency planning for Tribes, economically disadvantaged communities, and communities of color. Congress should direct the Corps to utilize existing mapping tools—such as the EPA's EJSCREEN

and FEMA's National Risk Index—to assist in identifying those communities most in need and at risk. Congress should enact criteria to ensure that the Corps' benefit-cost analyses fully account for, and allow projects to move forward to redress, systemic environmental and racial injustices.

- Increase Capacity and Expertise Within the Agency: Congress should establish a new position of Senior Advisor for Environmental Justice within the Office of the Chief of Engineers to increase the Corps' capacity to redress environmental injustice. Among other key issues, the Senior Advisor should revisit the way the Corps applies its "ability to pay" provision; address other barriers to access and participation in Corps programs; ensure culturally competent messaging in education and outreach materials; and assist in identifying and engaging with communities suffering from environmental injustice.

- Establish a Federal Advisory Committee on Environmental Justice: Congress should also establish a standing Federal Advisory Committee on Environmental Justice, in accordance with the Federal Advisory Committee Act, to advise the Chief of Engineers and the Assistant Secretary of the Army (Civil Works) on activities and actions that should be undertaken by the Corps to ensure more equitable delivery of services, projects, and project benefits through all Corps programs.

- Advance Environmental Justice Innovation: Congress should establish an Environmental Justice Innovation Center tasked with developing and training Corps staff to deliver innovative community-scaled solutions to water resources problems that are environmentally sustainable and cost-effective. The Innovation Center should prioritize working with smaller communities facing multiple, or particularly unique, water resources challenges. For example, the Innovation Center could work with a community and outside experts to incorporate bio-remediation or groundwater recharge maximization measures into a natural infrastructure project to increase water quality improvement co-benefits.

- Support Minority-Owned Businesses: Congress should direct the Corps to increase collaboration, contracting, and subcontracting with minority-owned businesses to improve gender-based and race-based outcomes. Many companies profit greatly from contracting with the Corps, including for post-disaster recovery work, and Congress should ensure that these benefits are inclusive of and prioritize minority-owned businesses. The distribution of funds should be tracked and reported to assess who benefits from economic opportunities.

3. Establish A Resilience Directorate to Leverage All Corps Programs

The Corps' historic focus on controlling nature combined with the programmatic silos created by the Corps' organizational structure prevent the agency from taking advantage of the full array of Corps programs and authorities to improve community and water resources resilience, including by leveraging the many free services provided by natural systems. These silos also promote piecemeal planning that has increased flood risks and flood recovery costs for some communities.

To help address these significant problems, Congress should establish a Resilience Directorate within the Office of the Chief of Engineers tasked with ensuring that the Corps takes full advantage of existing programs, authorities, and operations to leverage natural systems alone or in concert with structural solutions to: protect communities from floods; minimize expenditures for emergency response and

rebuilding; formulate resilience solutions for the most at-risk communities; and maximize co-benefits to communities including improved water quality and groundwater recharge, restored wildlife habitat, and a strengthened outdoor-based economy. The Directorate should have the resources and budgetary authority needed to transform the Corps into an agency that views nature as an ally, and prioritizes protecting and using natural systems in all Corps business lines to increase resilience.

A Resilience Directorate could: (1) infuse resilient approaches—including natural infrastructure—and best management practices into all Corps programs and activities; (2) facilitate multi-benefit projects, including through coordination across Corps business lines where appropriate; (3) identify and provide support to marginalized and economically disadvantaged communities, including through implementation of the pilot program authorized by Section 118 of WRDA 2020 and in coordination with the Senior Advisor for Environmental Justice (recommended above); (4) develop and implement resilience training for Corps leadership and staff; (5) analyze cost savings provided by natural infrastructure and improved resilience; (6) facilitate coordination and collaboration across mission areas, business lines, and districts to ensure that the Corps takes full advantage of all existing authorities to improve the resilience of the nation's water resources; and (7) enhance the Corps' coordination with other Federal agencies that have a role in community health and resilience (such as the EPA and FEMA) to promote holistic solutions that protect human health and the environment.

For example, the Resilience Directorate could coordinate, focus, and leverage the multiple planning processes and projects on the Mississippi River to improve the resilience of the Mississippi River from its headwaters to the Gulf.[33] The Resilience Directorate could also coordinate with other federal agencies to facilitate remediation of toxic contamination in rivers, like the Ohio, that run through highly industrialized watersheds. Such approaches would reduce flood risks and improve water quality for millions of people, and improve habitat for hundreds of species of fish and wildlife.

The Resilience Directorate could also provide important input into necessary updates to dam and reservoir operating procedures,[34] including, for example, the updates required for the "extremely high risk" Addicks and Barker's reservoirs in Houston.[35] Infusing strategic resiliency planning into these updates would better protect Houstonians during future flood events and improve the ability of the region's streams, bayous, and wetlands to provide natural flood protection benefits. During Hurricane Harvey, the Corps released at least 13,000 cubic feet of water per second from these reservoirs to reduce the risks of overtopping and protect homes upstream. But those same releases flooded some 4,000 homes downstream that would otherwise have remained dry despite Harvey's onslaught.[36]

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[33] Planning processes currently underway or available to the Corps for the Mississippi River include: disposition studies for the river's uppermost locks and dams; updates to lock and dam water control manuals and navigation operation and maintenance plans, many of which are more than 40 years old; the Upper Mississippi River Comprehensive Plan; assessment of alternative management regimes for the Old River Control Structure; studies examining raising the Mississippi River mainline levees; a series of feasibility studies assessing restoration along the lower Mississippi River; the Lower Mississippi River Comprehensive Management Study; and assessments of projects to restore Louisiana's coastal wetlands, including through Mississippi River sediment diversions.

[34] The Corps operates 707 dams that it owns across the country and manages flood control operations at 134 dams constructed or operated by other federal, non-federal, or private agencies. Government Accountability Office, Army Corps of Engineers, Additional Steps Needed for Review and Revision of Water Control Manuals, GAO-16-685, July 2016. Many of these dams are relying on decades-old water control manuals.

[35] The reservoirs' dams have been classified by the Corps as being at "extremely high risk."

[36] KHOU.com, Houston Texas, Buffalo Bayou to remain at record level; Barker, Addicks reservoirs have peaked (September 1, 2017).

Upstream homes also flooded, including more than 5,000 of the 14,000 homes located *inside* the Corps reservoirs.[37]

4. Improve Planning for Fish and Wildlife Resilience

For decades, Congress has required mitigation for adverse impacts to fish and wildlife caused by Corps water resources projects. To assist the Corps in properly evaluating fish and wildlife impacts and needed mitigation, Congress also requires the Corps to consult with the U. S. Fish and Wildlife Service on fish and wildlife impacts from individual Corps projects and on opportunities for mitigating any such impacts. State fish and wildlife agencies are also encouraged to consult with the Corps on project-specific impacts and mitigation opportunities. The Corps is directed to give "full consideration" to these expert recommendations, that if followed would greatly improve Corps planning and mitigation.

All too often, however, the Corps fails to adhere to these important requirements, leading to projects and long-term project operations that cause profound harm to the nation's fish and wildlife. To address these problems, Congress should:

- Require the Corps to evaluate fish and wildlife impacts and mitigation opportunities in a manner consistent with Fish and Wildlife Coordination Act review recommendations that derive from the special expertise of federal and state fish and wildlife experts (e. g., recommendations regarding methods and metrics for assessing wildlife impacts; assessments and determinations of wildlife impacts; and methods for effectively mitigating wildlife impacts).

- Direct Corps planners to coordinate with State, Territorial, and Tribal Fish and Wildlife Agencies and ensure projects are consistent with the State Wildlife Action Plans or similar state-developed wildlife recovery plans.

- Close loopholes that have been used by the Corps to evade mandatory mitigation requirements.

Complying with existing mitigation requirements and utilizing carefully-developed recommendations from federal and state fish and wildlife experts, are cost-effective, common sense ways to improve the health and resilience of the nation's fish and wildlife resources and avoid impairing the flood risk and other resilience benefits provided by healthy natural systems.

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 implement the reforms outlined in this testimony to make communities safer, ensure best uses of taxpayer dollars and allow the nation's treasured wildlife to thrive—and we stand ready to help make these recommendations a reality. Thank you again for the opportunity to testify before you today, and I look forward to your questions.

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[37] The in-reservoir homes were built on 8,000 acres of land that the Corps opted not to buy when the reservoirs were constructed in the 1940s, even though the Corps knew the land would flood during large flood events. Al Shaw, Lisa Song, Kiah Collier, Neena Satija, How Harvey Hurt Houston, in 10 Maps, ProPublica (January 3, 2018).

NATURAL INFRASTRUCTURE SUCCESS STORIES

The projects highlighted below used natural infrastructure solutions—including ecosystem restoration, levee setbacks, and voluntary relocations—to protect communities and the environment.

Notably, wetlands prevented $625 million in flood damages in the 12 coastal states affected by Hurricane Sandy and reduced damages by 20% to 30% in the four states with the greatest wetland coverage. During Hurricane Katrina, coastal wetlands reduced storm surge in some New Orleans neighborhoods by two to three feet, and levees with wetland buffers had a much greater chance of withstanding Katrina's fury than those levees without wetland buffers.

In the **Gulf Coast regions of Texas, Louisiana, Mississippi, and Florida**, nature-based solutions to reduce coastal flood risks are significantly more cost effective than structural solutions. A 2018 study shows that in this region, the average benefit-cost ratio for nature-based solutions is 3.5 while levees and dikes have a negative benefit-cost ratio of 0.26. Restoring wetlands could *prevent $18.2 billion in losses* while costing just $2 billion to carry out. Spending $1.3 billion to restore oyster reefs could *prevent $9.7 billion in losses*. Spending $1.2 billion to restore barrier islands could *prevent $5.9 billion in losses*.[1]

In **southern California**, the Surfers' Point Managed Shoreline Retreat Project will restore is restoring 1,800 feet of shoreline with cobble beach and vegetated sand dunes east of the mouth of the Ventura River to "provide resilience and offset risk from sea level rise and storms for 50 years" while maintaining beach access and other coastal resources. Since the project began, Surfers' Point has become Ventura County's most visited beach. Even with only one of two phases completed, the restored beach and dunes withstood 2015-2016 winter high wave conditions without damage, while other locations such as the Ventura Pier and promenade were damaged and the Pierpont neighborhood east of the project site was inundated.[2]

In **northern California**, the Napa Valley Flood Control Project is using a community-developed "living river" plan to reduce flood damages along the flood-prone Napa River. This plan replaces the Corps' originally-proposed floodwalls and levees with terraced marshes, wider wetland barriers, and restored riparian zones. The Project will restore more than 650 acres of high-value tidal wetlands of the San Francisco Bay Estuary while protecting 2,700 homes, 350 businesses, and over 50 public properties from 100-year flood levels, saving $26 million annually in flood damage costs.[3] Though only partially complete, the project was credited for lowering flood levels by about 2 to 3 feet during the 2006 New Year's Day flood.

In **Florida**, the Corps is using wetland restoration in the Upper St. John's River floodplain to provide important flood damage reduction benefits. The backbone of this project is restoration of 200,000 acres of floodplain which will hold more than 500,000 acre-feet of water—enough to cover 86 square miles with 10 feet of water—and will accommodate surface water runoff from a more than 2,000 square mile area. The Corps predicts that this $200 million project will reduce flood damages by $215 million during a 100-year flood event, and provide average annual benefits of $14 million. This project was authorized by Congress in 1986 to reduce flood damages along the river.

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In **Illinois**, a 2014 study conducted for the Chicago Wilderness Green Infrastructure Vision, found that natural systems are the least costly and most efficient way to control flooding. Wetlands in the seven-county Chicago metropolitan area provide an average $22,000 of benefits per acre each year in water flow regulation. This study also found that watersheds with 30 percent wetland or lake areas saw flood peaks that were 60 to 80 percent lower than watersheds without such coverage, and that preventing building in floodplain areas could save an average of $900 per acre per year in flood damages.[4]

In **Iowa**, the purchase of 12,000 acres in easements along the 45-mile Iowa River corridor saved local communities an estimated $7.6 million in flood damages as of 2009. The easement purchase effort began after the historic 1993 floods when river communities in east-central Iowa recognized the need for a more effective approach to reducing flood damages.

In **Massachusetts**, a 1972 Corps study showed that upstream wetlands were playing a critical role in reducing flooding in the middle and upper reaches of the Charles River by storing millions of gallons of water and preventing $17 million each year in flood damages. This led the Corps to preserve 8,000 floodplain acres to ensure future flood storage, at a cost of just one-tenth of the structural project it had previously planned to build. This approach was sanctioned by Congress in 1974 when it authorized the Charles River Natural Valley Storage Area. These floodplain wetlands are credited with reducing major floods, including in 1979, 1982, and 2006. The Corps estimates that this project has prevented $11.9 million in flood damages while providing recreational benefits valued at between $3.2 and $4.6 million.[5]

In **New York**, restoration of wetlands and lands adjacent to 19 stream corridors in Staten Island "successfully removed the scourge of regular flooding from southeastern Staten Island, while saving the City $300 million in costs of constructing storm water sewers."[6] Some 400 acres of freshwater wetland and riparian stream habitat has been restored along 11 miles of stream corridors that collectively drain about one third of Staten Island's land area. A 2018 study commissioned by the City of New York found that using "hybrid infrastructure" that combines nature, nature-based, and gray infrastructure together could save Howard Beach, Queens $225 million in damages in a 100-year storm while also generating important ecosystem services.[7]

In **Oregon**, the Portland Bureau of Environmental Services restored 63 acres of wetland and floodplain habitat, restored 15 miles of Johnson Creek, and move structures out of high risk areas to reduce flood damages in the Johnson Creek neighborhood. In January 2012, when heavy rainfall caused Johnson Creek to rise two feet above its historic flood stage, the restored site held the floodwaters, keeping nearby homes dry and local businesses open. An ecosystem services valuation of the restored area found that the project would provide $30 million in benefits (in 2004 dollars) over 100 years through avoided property and utility damages, avoided traffic delays, improved water and air quality, increased recreational opportunities, and healthy fish and wildlife habitat.[8]

In **Texas**, restoration of a 178-acre urban wetland—formerly an abandoned golf course—acted as a sponge to store 100 million gallons of water during Hurricane Harvey, protecting 150 homes in Houston's Clear Lake community from serious flooding. This project will store up to a half billion gallons of water and protect up to 3,000 homes when it is completed in 2021.[9]

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In **Vermont**, a vast network of floodplains and wetlands, including those protected by 23 conservation easements protecting 2,148 acres of wetland along Otter Creek, saved Middlebury $1.8 million in flood damages during Tropical Storm Irene, and between $126,000 and $450,000 during each of 10 other flood events. Just 30 miles upstream, in an area without such floodplain and wetland protections, Tropical Storm Irene caused extensive flooding to the city of Rutland.

Endnotes

[1] Borja 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.

[2] Jean Judge et al., "Surfers' Point Managed Shoreline Retreat Project," in *Case Studies of Natural Shoreline Infrastructure in Coastal California: A Component of Identification of Natural Infrastructure Options for Adapting to Sea Level Rise (California's Fourth Climate Change Assessment).* (The Nature Conservancy, 2017), 9-15, https://scc.ca.gov/files/2017/11/tnc_Natural-Shoreline-Case-Study_hi.pdf.

[3] Napa County California website at https://www.countyofnapa.org/1096/Creating-Flood-Protection.

[4] Will Allen, Ted Weber, and Jazmin Varela, *Green Infrastructure Vision: Version 2.3: Ecosystem Service Valuation.* (The Conservation Fund: 2014), 13-15, https://datahub.cmap.illinois.gov/dataset/c303fd2e-beaf-4a75-a9ec-b27c6da49b69/resource/028c9b69-bb19-425e-bb92-3d33656bea4c/download/tcfcmapgiv23ecosystemservicesfinalreport201412v2.pdf.

[5] American Rivers, Unnatural Disasters, Natural Solutions: Lessons From The Flooding Of New Orleans (2006) (Charles River Valley Natural Storage Area case study); and https://www.arcgis.com/apps/MapJournal/index.html?appid=0bf97d033a8642b18c2e8075d4b5ecfe.

[6] Cooper Union, Institute for Sustainable Design, *The Staten Island Bluebelt: A Study In Sustainable Water Management* (http://cooper.edu/isd/news/waterwatch/statenisland). These effort was started in 1990.

[7] The Nature Conservancy, *Urban Coastal Resilience: Valuing Nature's Role*. (2015), https://www.nature.org/content/dam/tnc/nature/en/documents/urban-coastal-resilience.pdf.

[8] "Johnson Creek Restoration, Portland, Oregon," Naturally Resilient Communities, accessed November 12, 2019, http://nrcsolutions.org/johnson-creek-restoration-portland-oregon/.

[9] Exploration Green, 2018, https://www.explorationgreen.org/.

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Senator CARPER. Thank you. Thank you, Collin. Thanks so much for joining us and for a really excellent testimony.

Our next witness is Amy Larson.

Ms. Larson, you are recognized for your statement. Please proceed. Thank you.

STATEMENT OF AMY LARSON,
FOUNDING PARTNER, LARSON STRATEGIES LLC

Ms. LARSON. Good morning, Chairman Carper, Ranking Member Capito, and members of the Committee. It is a privilege for me to appear before you this morning to testify on the benefits of investing in Army Corps of Engineers water resources infrastructure projects.

My name is Amy Larson. I am currently a consultant, but previously served for 12 years as the President of the National Waterways Conference, an association whose membership includes the non-Federal sponsors of Corps Civil Works projects, as well as the stakeholders who rely upon those projects and the multiple benefits they bring to this Nation.

This morning, I would like to address the importance of flood control and flood risk management measures to small and rural communities. I will touch upon the opportunities those communities may have, as well as impediments they face, and offer suggestions for more effective planning and investment strategies going forward.

We hear a lot about the traditional planning process, and we know that it generally produces the recommended plan as the one that has the greatest net economic benefit consistent with protecting the environment. But a particular challenge with this metric is that the BCR considers the value of real estate in the proposed project area.

What that means is it is a clear detriment to regions with lower property values. If we look at this Administration's emphasis on equity and environmental justice, we know that we need a more focused response to address flood risks in these disadvantaged communities.

An alternative approach could be to consider, for example, the number of homes, structures, and most significantly, lives at stake, rather than simply economic benefits. Consideration of life safety should be paramount, derived from the Corps' focus on risk informed decisionmaking rather than a straight economic analysis.

There is also a major disconnect, though, when it comes to funding projects.

In establishing the Administration's budget priorities, and this goes back over several administrations, OMB uses a BCR of 2.5 to 1 at a 7 percent discount rate. In practical terms, that means many authorized projects simply won't be included in the President's budget. So while the Administration's fiscal year 2022 budget would lower that to two to one, the unrealistic 7 percent remains a huge hurdle for many projects to get started.

There are other alternative funding opportunities that may help these small communities that don't typically avail themselves of the large planning process. So, the Continuing Authorities Program

is designed to plan and implement projects of limited size, scope, and complexity.

Typically, the feasibility study here at $100,000 is 100 percent federally funded, and thereafter, if a decision is made to construct there is a cost share model. If we look at the CAP authorities, the Section 205, which looks at small flood control projects, the cost share is 65 percent Federal, and 35 percent non-Federal.

While that is a great program, if we look at the actuals, it is only estimated that about 20 percent of those projects that go through the study phase go on to construction, and there are pretty much two reasons for this. These small communities simply do not have the funds for their local cost share, and second, they don't have the technical expertise to manage their end of the project.

So, in funding CAP in fiscal year 2021, Congress gave $69.5 million. That is compared to $3 million in the Administration's budget. That is a good step.

And you have mentioned the WRDA 2020 provision, which established a pilot program for these small and rural communities at a 100 percent cost share.

What I would encourage you to do when you are at your town halls is encourage your local communities avail themselves of these CAP opportunities. Go to the local Corps district, express interest in this project, because what happens is they finally get a budget, and then the Corps has to ramp this up. If there is a letter of interest with the Corps district, the communities then will be called by the Corps and be able to work and try to move forward on their CAP programs.

We can't forget, also, long term operation and maintenance activities in order to have sustainable solutions for this. How do they pay for that? That is one of the things that we know falls by the wayside with these small flood control projects, is the O&M.

I have looked at other programs within the Corps and other Federal agencies that may provide this Committee guidance as you seek to help these small and rural communities. The Corps' Tribal Partnership Program, the Corps' CWIFIA Program, EPA's WIFIA, TIFIA, Department of Agriculture, and HUD have zero to low interest loans. They may provide some sort of model so that these communities who are in need can get their cost shares for construction and for O&M.

Thank you for the opportunity to be here today, and I look forward to any questions.

[The prepared statement of Ms. Larson follows:]

Statement of Amy W. Larson, Esq.

Examining the Benefits of Investing in USACE Water Infrastructure Projects

Before the Committee on the Environment and Public Works
United States Senate

July 28, 2021

Good morning Chairman Carper, Ranking Member Capito, and members of the Committee. It is a privilege for me to appear before you this morning to testify on the benefits of investing in U.S. Army Corps of Engineers water resources infrastructure projects.

My name is Amy Larson. I am currently a consultant, but previously served for twelve years as the president of the National Waterways Conference, Inc. (NWC or Conference), an association whose membership includes nonfederal sponsors of Corps Civil Works projects as well as stakeholders who rely upon those projects and the multiple benefits they bring to this nation. In that capacity, I was deeply involved in water resources legislation dating back to the Water Resources Reform and Development Act of 2014 and the subsequent WRDAs in 2016, 2018 and 2020. I am pleased to see the continuation of this Committee's longstanding cooperation and collaboration in addressing our nation's critical water resources needs.

This morning I would like to address the importance of flood control and flood risk management measures to small and rural communities. I'll touch upon the opportunities those communities may have as well as the impediments they face, and offer suggestions for more effective planning and investment strategies going forward.

The Project Planning Process

In recent years, there's been a heightened scrutiny of the benefit-cost ratio, with an increasing degree of frustration about how projects are both authorized and funded. To address these issues, it's helpful to start with how projects are developed to begin with.

The Corps formulates and evaluates studies for major water resources projects under the 1983 Economic and Environmental Principles for Water and Related Land Resources Implementation Studies, known as the Principles and Guidelines, or the P&G. Intended to establish consistent and replicable planning criteria, the P&G provide that the "Federal objective" for project

planning is to contribute to national economic development, referred to a N-E-D, consistent with protecting the environment.

Through the study phase, alternative approaches are evaluated through four accounts:

- The NED, which looks to the economic value of the national output of goods and services,
- Environmental quality (EQ), which looks at non-monetary effects on ecological, cultural and aesthetic resources,
- Regional economic development (RED) – looks at income, employment, output and population, and
- Other social effects (OSE) – considers such things as community impact, health and safety, displacement, and energy conservation

The P&G provides that a discount rate is to be used to convert future monetary values to present values. It is set annually using data from the Department of the Treasury, and it is currently 2.75%.

WRDA 2007 directed the Corps to update the 1983 P&G, contemplating planning founded upon multiple national objectives: economic, environmental, and social well-being, including a public safety objective. Additionally, WRDA 2007 emphasized a watershed approach to planning, recognizing the importance of collaborative planning and implementation. After a protracted process, the result was the issuance of the final Principles and Requirements and draft Implementing Guidelines in 2013. At a hearing this Committee held last month to consider the role of natural and nature-based features in water resources projects, you received testimony from General Galloway who provided a detailed overview of the P&G, noting that concerns limited the Corps from implementing the 2013 effort. Without belaboring those concerns, which I shared at the time, I think it's important to recognize them in order to provide a clear path forward. In a nutshell, first, the 2013 Principles, Requirements and Guidelines did not establish a predictable, consistent and replicable framework to guide the review of potential projects, and second, the proposal did not provide for a balanced approach to the planning, development and management of water resources, and by that I mean balancing environmental and ecological considerations with human and economic uses. These concerns were also identified by the National Research Council's Water Science and Technology Board in a review of the proposed principles, which were not rectified in the final document. These concerns are still relevant today as we as a nation consider how to invest significant funds by the Federal government and nonfederal sponsors alike in our critical water resources infrastructure. As the Corps carries out the directives in the FY21 Energy and Water bill and WRDA 2020, both included in the omnibus enacted in December, to promulgate agency guidance to implement the 2013 Principles and Requirements, it is important to note that notice and an opportunity to comment on the draft guidance must be provided to stakeholders before any guidance is finalized.

Turning to the BCR, generally the recommended plan for projects formulated under the P&G is the one with the greatest net economic benefit consistent with protecting the environment. However, there is a major disconnect when it comes to funding authorized projects. In establishing the Administration's budget priorities, OMB uses a BCR of 2.5 to 1, with a 7% discount rate. In practical terms, that means many authorized projects won't be included in the President's budget.

The Administration's FY22 budget would lower the OMB new start criterion to 2.0 to 1, keeping the 7% discount rate. While this might be viewed as a modest step to allowing economically depressed communities to compete for funding, addressing long-standing concerns and criticisms that wealthier communities with higher home values had a better chance to secure federal funding, the unrealistic 7% rate remains a significant hurdle for many projects. Moreover, recent attempts by OMB to tie new start authorizations to a nonfederal sponsor's willingness to pay higher than the required cost share have been rejected by Congress as "pay to play" attempts.

An additional challenge arises when nonfederal sponsors seek to incorporate multiple benefits in a project. You heard in detail about the challenges in considering multiple benefits at last month's hearing in the testimony provided by Rick Johnson from the Sacramento Area Flood Control Agency about improving the Yolo Bypass. This issue is being addressed at the Corps, based on a directive from the previous Assistant Secretary of the Army for Civil Works, who required the Corps to "identify, analyze, and maximize all benefits" in the different accounts mentioned above.

It is encouraging that efforts are ongoing both to evaluate and quantify benefits beyond the scope of the traditional benefit cost ratio used in project formation, and to capture multiple benefits that can be yielded by these projects. This includes better quantification and demonstration of all benefits accruing from these projects; improved quantification of multi-purpose benefits, as well as improved quantification of flood protection benefits, including in economically distressed areas. A particular challenge in this area is that the BCR considers the value of real estate in the proposed project area. That measure is a clear detriment to regions with lower property values and clearly, in view of this Administration's emphasis on equity and environmental justice, points to the need for a more focused response to flood risks in disadvantaged communities. An alternative approach could be to consider the number of homes, structures, and most significantly lives at stake, rather than simply economic benefits. Consideration of life-safety should be paramount, derived from the Corps' focus on risk-informed decision making, rather than a straight economic analysis.

A couple words of caution: while incorporating multiple benefits may in some instances elevate the BCR to better position that project to compete for federal funds, requiring all projects to "maximize" all benefits could in fact set up a red herring and undermine the planning process by setting up unachievable goals and imposing additional financial obligations on the nonfederal sponsor. Additionally, it is unclear how OMB will make funding decisions with enhanced project benefits. Would OMB decline to fund single purpose projects? Conversely, would too many benefits dilute the federal interest, and unwittingly give OMB an opportunity to choke federal participation in all water projects?

Thus far, I've focused on the traditional planning and project development process. Now I'd like to turn to other opportunities for small and rural communities to address their flood protection needs.

The Corps' Continuing Authorities Program (CAP) is a group of nine legislative authorities under which the Corps can plan, design, and implement certain types of water resources projects without additional project-specific congressional authorization. The purpose of the CAP is to plan and implement projects of limited size, cost, scope and complexity.

Typically, the feasibility study and design phase are covered at federal expense up to $100,000, with the nonfederal sponsor required to cover costs above that amount. Thereafter, if a decision is made to proceed with construction, there are cost-share obligations on the nonfederal sponsor, detailed in the project partnership agreement (PPA). Cost shares vary based on the specific authority utilized. For example, section 205, which establishes the authority to construct small flood control projects, requires that construction costs are 65 percent federal and 35 percent non-federal.

Despite the authorities in place, there are nonetheless challenges to overcome in order to energize this program. It is estimated that after the initial federally-funded study phase, only 20 percent of those studies move forward to construction. Anecdotally, there seems to be two primary reasons for this. First, small communities do not have funds to go forward with their cost share obligations. Second, many do not have the technical expertise to manage their end of the project. For instance, a small community may have one person responsible for public works, or indeed, one person managing multiple departments, one of which is public works. As a consequence, the local flood protection project may not get the attention it needs. I would offer a few suggestions to address these issues. First, in terms of funding, Congress has taken a significant step by funding CAP in FY 21 at $69.5 million, compared to the $3 million budget request. That funding has not been allocated yet as the Corps awaits Administration approval. (The FY22 budget would only fund this program at $3.53 million, with $1 million each for Section 206, aquatic ecosystem restoration, and Section 205, small flood control projects, and $1.53 million for Section 1135, project modifications for improvement of the environment. Hence, Congress will again need to bolster this program with more robust funding).

WRDA 2020 increased the authorization levels for each program, and established a pilot program under the Continuing Authorities Programs for small and disadvantaged communities, with a federal cost share at 100% for projects selected in the pilot program. It is my understanding that guidance to implement this provision is under review, and thereafter funding will be required to implement.

In terms of educating small communities, I would respectfully suggest that members of this Committee, and your colleagues in both chambers, could play an essential role, letting your constituents know about these opportunities – both the increased CAP funding and the newly authorized pilot program. In general, for regular CAP funding, the process starts with a letter of interest from the local community to the Corps district. Your outreach to your constituents can effectively assist their efforts to secure the assistance they need.

Congress's continued support for the CAP authorities will also provide some certainty and stability for the Corps' execution of the program. With paltry budget requests in the $3 million range, the Corps is hamstrung until the actual appropriations are agreed upon, such that staff efforts are directed towards authorized projects and ongoing operation and maintenance (O&M) activities. Regular, robust funding, such as that provided in FY21, will better enable the Corps to ensure that dedicated and experienced program managers are in place to manage the program in an efficient manner.

While the increased funding is certainly welcome in order to address the needs of small and rural communities, I would also add a word of caution. The CAP authorities address study, design and construction. Remember that the local communities are responsible for the long-term operation and maintenance. In order to develop and implement long-term sustainable solutions,

the O&M responsibilities cannot be overlooked. Local communities will need to prioritize this obligation at the local level. WRDA 2020 took a step in this direction requiring the Corps to prioritize technical assistance for resiliency planning to economically disadvantaged communities and communities subject to repetitive flooding.

A review of other funding opportunities may be instructive in developing ways to assist small and rural communities. The Corps "Tribal Partnership Program," established in WRDA 2000, is a CAP-like program dedicated to carrying out the study, design and construction of various water resources projects for federally-recognized tribes. The Corps Water Infrastructure Financing Program (CWIFP), authorized in WRRDA 14 by the WIFIA title, enables local investments in critical infrastructure. That program received its first federal funding in the FY21 energy and water bill, targeted to provide financial assistance for projects to reduce flood damage, notably resulting from the failure of high-hazard dams. Rules to administer that program are forthcoming and could be instructive in setting up a similar program for small and rural communities. Similarly, the EPA's WIFIA program and the TIFIA program may provide a model to establish low interest loans or grants. Other low-or-zero interest loan and grant programs, for instance those administered by the Departments of Agriculture and Housing and Urban Development, may serve as models for programs to assist small and rural communities to meet their cost-share obligations for construction and operation and maintenance in order to achieve the necessary level of flood protection their residents deserve.

Thank you for the opportunity to be here today and I look forward to any questions you might have.

Senator CARPER. You were great to join us. Thank you for that testimony.

Now, the real McCoy.

Mr. McCoy, take it away.

STATEMENT OF ROBERT MCCOY,
PRESIDENT AND CEO, AMHERST MADISON

Mr. MCCOY. Chairman Carper, Ranking Member Capito, and members of the Committee, thank you for the opportunity to speak today on the benefits of investing in the U.S. Army Corps of Engineers water infrastructure projects.

Senator CARPER. If I would close my eyes, I would feel like I am back in my native State of West Virginia. A great sound.

[Laughter.]

Mr. MCCOY. My comments today will highlight the improvements made in the Water Resources and Development Act of 2020, also known as WRDA, and why a comprehensive infrastructure bill that includes significant funding for lock and dam modernization will provide and sustain more jobs, increase efficiency, and make our inland waterway system more resilient.

As Ranking Member Capito said earlier, my name is Robert McCoy. I am the President and CEO of Amherst Madison. Amherst Madison is a 100 percent employee owned company involved in the transportation, construction, and repair business. We are based on the Kanawha River in Charleston, West Virginia.

I also serve as a trustee of the National Waterways Foundation and as a member of the Board of Directors of the Waterways Council. WCI is the national public policy organization that advocates for a modern and well maintained system of inland waterways and ports.

Our Nation's rivers are the fourth R of a critical national multimodal transportation system that also includes roads, rails, and runways. The inland waterways system is comprised of 12,000 miles of navigable waterways in 38 States.

The United States has the largest navigable inland waterway system in the world. Each year, this system typically moves almost 600 million tons of freight, valued at approximately $250 billion. River transportation is the safest, most environmentally responsible and efficient mode of transporting bulk commodities.

I would like to thank this Committee for continuing to prioritize the biennial enactment of WRDAs, and I especially thank you for Section 109 of WRDA 2020.

Section 109 of WRDA 2020 established an important new statutory cost share formula for the construction and major rehabilitation of inland waterways navigation projects receiving an appropriation in the next 10 years. That provision changed the construction and major rehabilitation cost share for inland navigation projects to 65 percent from the General Treasury, 35 percent from the Inland Waterways Trust Fund. When fully appropriated, it will deliver roughly an additional $100 million annually in construction funding for navigation improvements. I cannot thank this Committee enough for your support in adjusting the cost share.

The Inland Waterways User Board is a Federal advisory committee established by Congress to give commercial users a strong

voice in the Corps' investment decisions. I have included with my written testimony a copy of the User Board's most recent report and recommendations.

Congress created the User Board to work with the Corps of Engineers to help prioritize construction projects through what is called the Capital Investment Strategy. In January of this year, the Corps submitted the first update of the Capital Investment Strategy that this Committee called for in WRDA 2014. The Corps' 2020 Capital Investment Strategy Report illustrates that by completing 15 congressionally authorized priority projects valued at $7 billion over a 10 year timeframe rather than the expected 30 year baseline funding scenario, the Corps will save $2.2 billion.

By including capital construction funding for the inland waterways in a positive manner in the comprehensive infrastructure legislation that Congress currently is developing, you will create a sustainable advantage to American industries that ship their products on our waterways, making those industries more competitive at home and in the world market.

Both WCI and the Inland Waterways User Board have recommended at least $3 billion of infrastructure funds should be appropriated in the comprehensive infrastructure investment legislation for the Capital Investment Strategy list of 15 congressionally authorized projects.

That concludes my testimony. Thank you for giving me the opportunity to be here today, and I will be happy to respond to any questions.

[The prepared statement of Mr. McCoy follows:]

Testimony Presented on Behalf of Robert McCoy, President/CEO, Amherst Madison

on behalf of Waterways Council, Inc.

Examining the Benefits of Investing in U.S. Army Corps of Engineers Water Infrastructure Projects

Committee on Environment and Public Works

United States Senate

July 28, 2021

Chairman Carper and Ranking Member Capito, and members of the Committee, thank you for the opportunity to speak today on the benefits of investing in U.S. Army Corps of Engineers (the Corps) water infrastructure projects. My comments today will highlight the improvements made in the Water Resources and Development Act of 2020 (WRDA) and why a comprehensive infrastructure bill that includes significant funding for lock and dam modernization will provide and sustain more jobs, increase efficiency, be safer, and make our inland waterways system more resilient.

My name is Robert McCoy, and I am the President and CEO of Amherst Madison, a Trustee of the National Waterways Foundation, a member of the Board of Directors of Waterways Council, Inc., and a former member of the Inland Waterways Users Board. Amherst Madison is a marine transportation, construction, and repair business located on the Kanawha River in Charleston, West Virginia. We have been in business since 1893 and we are a 100% employee-owned company driven by over 340 loyal, experienced, and well-trained men and women many of whom are 2nd and 3rd generation employees. We are not only a user of the

inland waterways system but also a contractor that maintains, repairs, and builds the infrastructure necessary to keep our inland waterways moving. Our area of operation extends from above Pittsburgh, PA, and includes the full length of the Ohio River and its tributaries.

West Virginia encompasses 680 miles of navigable inland waterways, ranking it 16th in the nation, and is home to three river systems—the Ohio, Monongahela, and the Kanawha Rivers. In 2018, our ports, inland waterways, and inland-waterways-dependent industries supported 138,200 jobs, $8.5 billion in personal income, $15.2 billion in Gross State Product, and $35.8 billion in total output that gave rise to more than $1.3 billion in state & local tax revenue[1]. However, river systems that create recreational and economic opportunities throughout the state are often out of sight, out of mind to many Americans.

What ensures the many national, regional, and local benefits provided by our inland waterway system are the locks and dams on our state's rivers, and the other major inland rivers, that act much like a ladder so vessels can navigate across systems at varying depths and not get stuck or grounded. Football-field-sized tows comprised of multiple barges carry our nation's critical freight to destinations within the U.S. and facilitate competition for shippers to the world export market. The "building block" commodities they carry include energy products, fertilizer, grain and soybeans, sand and salt for icy roads, aggregate materials for the construction industry, booster rockets for NASA, military equipment, and much more. Each of our nation's locks and dams has a different story, but collectively they provide cost advantages that incentivize the

[1] https://waterwayscouncil.org/file/302/HO_WaterwaysProfile_WV.pdf

movement of more than 500 million tons across the entire system. Our Rivers are the fourth "R" of a critical national multimodal transportation system that also includes Roads, Rail, and Runways.

While our river system provides tremendous benefits, more than half of the portion of the system that is operated by the Corps is now more than 50 years old, which is their design life established by the Corps. Some system segments, for example, older portions located on the Upper Mississippi and Illinois Rivers, are relying on outdated 600-foot-long locks that are unable to accommodate today's inland waterways standard 15-barge tows without separating or "breaking" the tow into two sections to pass through the lock. This multistep process decreases efficiency, increases idle times, and endangers the mariners who must break the tows apart and reconnect them with each lock transit. Beyond the need for modernization to improve the system's efficiency and facilitate the nation's economic well-being and security, these locks and dams require constant attention and operations and maintenance funding support to keep them open and functioning.

Reflecting the concept of "Users Pay, Users Say", Congress created the Inland Waterways Users Board (IWUB). The IWUB is a Federal advisory committee established by Section 302 of WRDA 86, to give commercial users a strong voice in the investment decision making they are supporting with their cost-sharing tax payments. The IWUB annually provides recommendations to Congress and the Secretary of the Army through its annual report. The 33rd annual report was transmitted to Congress earlier this year. I have included the report as an appendix below.

Since 2016, the first full year that the newly increased inland waterways diesel fuel tax was in effect, the inland waterways capital investment program (Construction account) has ranged from $409 million at the high end to $323.1 million at the low end. These higher funding levels were achieved through (1) individual cost-share changes for construction of Olmsted Locks and Dam in WRDA 2014 and for the Chickamauga Lock in the FY19 and FY20 Energy and Water, and Related Agencies funding bills, and (2) enactment of industry-supported nine-cent-per-gallon increased in the diesel fuel tax that commercial users of the inland system pay[2]. These policy changes led to quick progress for ongoing construction projects, including Olmsted becoming operational four years ahead of schedule and $275 million below the Post Authorization Change Report estimated cost.

Last year, Section 109 of WRDA 2020 established an important new statutory cost-share formula for the construction and major rehabilitation of any inland waterways system navigation project receiving an appropriation during FY21 through FY31. That provision changed the construction and major rehabilitation cost-share for inland navigation projects to 65% from the General Treasury and 35% from the Inland Waterways Trust Fund (IWTF). This provision, when fully appropriated, will deliver roughly an additional $100 million annually in construction funding for navigation improvements on the inland system. I cannot thank this committee enough for your support in modifying the cost-share. This Committee continues to take meaningful steps to advance our nation's inland waterways transportation system.

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[2] In 2014, the inland barge industry proposed a 45% increase to our own diesel fuel tax, which took effect April 1, 2015. Commercial operators are the only users of the system to pay a dedicated tax for its care and modernization, despite the many industries benefiting from the system.

Also, in January this year, the Corps submitted the first update of the Capital Investment Strategy that this Committee called for in WRRDA 2014. The Corps' 2020 Capital Investment Strategy report illustrates, by completing the 15 highest priority projects (valued at $7 billion) over a 10-year timeframe rather than the more than 30 years under the baseline funding scenario, the Corps will save $2.2 billion, and complete construction 20 years earlier than expected[3]. A study under the sponsorship of the National Waterways Foundation concluded that expediting the construction of the current portfolio of congressionally authorized projects will add 35,000 more jobs to the existing 541,000 jobs, create $14 billion in additional incomes, and decrease overall system construction costs and emissions through greater efficiency[4]. As the most environmentally friendly mode of surface transportation, the barge industry can move cargo 647 ton-miles per gallon of fuel, surpassing other surface modes of transportation (145 ton-miles per gallon of fuel for trucks and 477 ton-miles per gallon of fuel for locomotives). This is incredibly impressive since many of our tows traverse a number of undersized 80-year-old locks and dams, originally built for steamboat traffic and are 600-feet in length

As you continue to work on an infrastructure package and begin working on WRDA 2022, I hope you all remember the strides that have been made to improve the overall inland waterways transportation system. With the adjustments made in WRDA 2020 by this Committee, inclusion in an infrastructure package, and full appropriation of annual IWTF receipts, we

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[3]https://www.iwr.usace.army.mil/Portals/70/docs/IWUB/Inland%20Waterways%20Capital%20Investment%20Strategy%20Report%202020%20Final%20Transmitted%20to%20Congress%204Jan21.pdf?ver=zAvoCiOFncpHG9WgP4JU2g%3d%3d

[4] http://nationalwaterwaysfoundation.org/documents/INLANDNAVIGATIONINTHEUSDECEMBER2014.pdf

can build a more resilient and efficient inland waterways system. Thank you, and I look forward to answering your questions.

INLAND WATERWAYS USERS BOARD
33RD ANNUAL REPORT

To the SECRETARY OF THE ARMY
And the UNITED STATES CONGRESS

December 2020

LaGrange Lock and Dam Major Rehabilitation

Inland Waterways Users Board Organization

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LafargeHolcim Ltd
Mr. Robert J. Innis
Dundee, Michigan

Vice Chairman

Campbell Transportation Company, Inc.
Mr. Michael J. Monahan
Houston, Pennsylvania

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Bruce Oakley, Inc.
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Crounse Corporation
Mr. C. Matthew Ricketts
Paducah, Kentucky

Dow Chemical Company
Mr. Greg Turner (for Mike Fewell)
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Marathon Petroleum Company
Mr. David A. Earl
Catlettsburg, Kentucky

Members continued

Marquette Transportation Company
Mr. Damon S. Judd
Paducah, Kentucky

SCF Marine Inc.
Mr. Timothy C. Power
St. Louis, Missouri

Shaver Transportation Company
Mr. Robert D. Rich
Portland, Oregon

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INTRODUCTION

In order to enhance and sustain our economic and social well-being, the Nation needs, and in fact has, a resilient transportation system. As one of that system's foundational "4 R's" -- roads, rails, runways, and rivers -- the inland waterways as a major transportation system is a key contributor to the overall transportation system's resilience. Of the 4 R's, river transportation is the safest, most environmentally responsible, and most efficient mode of transporting bulk commodities that are critical to our Nation's economy. Each year, approximately one-seventh of the Nation's total intercity commercial tonnage travels on the river transportation system, which, in addition to the economic advantages of river transportation for our Nation, alleviates significant congestion and wear and tear on our national highway system. Additionally, the national infrastructure that creates the pools the river system depends on to support navigation, is essential to providing drinking water for tens of millions of Americans, generates hydropower to meet national energy demand, provides cooling water for manufacturing facilities and controls waterflow to protect communities from flooding and to help grow agricultural products, all of which further sustain the Nation's economy.

America's inland waterways system is comprised of 12,000 miles of navigable waterways in 38 states. The U.S. has the largest navigable inland waterways system in the world. Each year, the system typically moves almost 600 million tons of freight valued at approximately $250 billion over what is, mile-for-mile, the safest and most environmentally responsible mode of goods transport.

The inland waterways offer the lowest carbon footprint among other modes of surface transportation, with little noise or air pollution. Barge transportation is the most fuel-efficient mode of transportation, with towboats moving a ton of cargo 647 ton-miles per gallon of fuel, compared to trucks moving it 145 miles for each gallon of fuel burned and locomotives transporting that cargo 477 ton-miles per gallon. A standard locking river inland configuration of one towboat pushing 15 barges moves as much cargo as 1,050 semi-trucks on our highly congested roadways, or six locomotives pulling 216 rail cars. A single towboat pushing a standard 36 barge tow on the Lower Mississippi River moves the equivalent of 2,520 semi-trucks and 518 rail cars.

The U.S. has long recognized the vital contribution that waterborne transportation makes to overall prosperity. Achieving an ever-more-sustainable and resilient inland waterways system has been a commonly held national goal for more than 200 years. Navigation channels have been created and locks and dams constructed with continually advancing features to increase the system's capacity, improve its performance, and prevent or minimize the risks posed to the system. Just as public expenditures to create and maintain these navigation channels and construct and maintain these locks and dams have been among the Nation's earliest infrastructure investments, similar investments are just as critical today to ensure an efficient 21st century freight system and to maintain the critical competitive advantages the waterways system creates for our Nation's economy.

Numerous studies have documented the enormous value our inland waterways system delivers to the Nation. For example, the U.S. Department of Agriculture (USDA) 2019 report, "Importance

of Inland Waterways to U.S. Agriculture" highlighted in the Users Board's 32nd Annual Report and discussed further in this Annual Report, conclusively makes the case for significant additional investment in the modernization of the Nation's inland waterways system infrastructure. Among its findings, is that "due to its efficiency and lower costs, the inland waterways system saves between $7 billion and $9 billion annually over the cost of shipping by other modes."

Congress continues to embrace the national goal of adding resiliency improvements to the inland waterways system. In recent years, modernization project authorizations like the Navigation and Ecosystem Sustainability Program (NESP), which will add redundant lock capacity at seven existing projects on the Upper Mississippi River and on the Illinois Waterway, and the Upper Ohio River Navigation Project, which will modernize and upgrade the redundancy of the three oldest lock and dam projects on the Ohio River, have been approved. When constructed, these newly authorized projects will enhance throughput on these waterways and provide significant transportation resiliency benefits related to weather conditions, economic circumstances, security considerations, and overall transportation system sustainability. To this end, in addition to the Kentucky Lock Addition and Chickamauga Lock and Dam projects currently under construction, Congress has authorized the construction of 15 priority new modernization projects costing a total of $7.1 billion to be built by the U.S. Army Corps of Engineers (the Corps).

It is very much in the national interest that these high-priority navigation infrastructure projects be built expeditiously considering the critical investments in the Nation's future that they represent. As we noted in last year's Inland Waterways Users Board 32nd Annual Report, our country's international competitors are not inclined to sit back and cede advantage to the United States. On the contrary, foreign competition from countries like Brazil, which is prioritizing the improvement of its internal land and water transportation arteries, and from China, which is investing aggressively in its own and South America's transportation infrastructure, is expected to continue to intensify. China, in particular, currently is engaged in a mammoth worldwide infrastructure investment campaign designed to expand trade links and advance China's openly-stated goal of supplanting the United States as the world's preeminent economic power. Since this "Belt and Road Initiative" began approximately seven years ago, it has been reported that more than 130 countries have signed deals or are pursuing the possibility of participating in the program. The World Bank estimated two years ago that at least $575 billion worth of projects had been built or were at that time progressing.

The United States must meet this challenge.

As outlined in greater detail in this report, in September 2020 the Corps submitted a draft of the Capital Investment Strategy (CIS) for the inland waterways. This report reflects significant partnership and work effort between the Corps and industry during 2020 to evaluate and prioritize the highest priority needs amongst our Nations' overall aging and depleted waterways infrastructure. In accordance with Water Resources Reform and Development Act of 2014 (WRRDA 2014), the Capital Investment Strategy is re-evaluated every five years and is intended to provide the funding priorities for infrastructure projects on the inland waterways. With the prospect of an infrastructure bill, the CIS provides a current roadmap that should be used for allocating additional project funding.

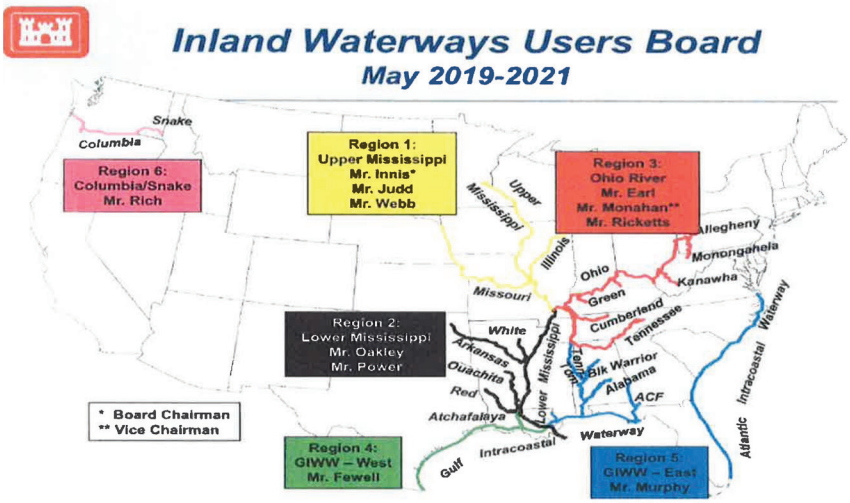
Investment in modernization of the locks and dams of our inland waterways system is not consumptive spending. Instead, it is future-oriented spending that will increase economic activity, employment, and prosperity for our great Nation. These investments are essential to sustain and improve our country's security and standard of living for our children and their children. The Corps has demonstrated that, in partnership with the American worker, if provided efficient funding and appropriate resources to execute projects without interruption, it can and will restore our inland waterways infrastructure to a state that supports the continued prosperity of our Nation. The Users Board believes that to be a matter of high priority for all of us and appreciates the continued support of Congress for this critical infrastructure reinvestment objective.

INLAND WATERWAYS USERS BOARD IN 2020

Users Board Membership

The Inland Waterways Users Board is an independent Federal advisory committee established by Section 302 of Public Law 99-662, the Water Resources Development Act of 1986 (WRDA 86). The Secretary of the Army appoints its eleven representative organizations. For the purpose of making these appointments, the inland waterways subjected to fuel taxes have been subdivided into six geographic regions, with the intent that each region be represented by at least one Board member based on the regional concentration of the respective member's firm's traffic on the waterways. Figure 1 illustrates the Corps-assigned regional representation determinations for the 11 current Users Board Members.

Figure 1: Users Board Membership, May 2019-2021



The Department of the Army is in the process of selecting replacements for five Users Board members whose appointment terms are scheduled to expire on May 27, 2021. Significant preliminary administrative work has been performed, including the solicitation and review of nominations to fill the five expiring appointments. The Board urges the Corps to continue to support as a priority matter the Army Department's efforts to finalize the necessary replacement appointments to the Users Board for the five departing members as soon as possible and in a manner that assures full Users Board membership during 2021.

Meetings

Section 2002 of the Water Resources Reform and Development Act of 2014 (WRRDA) amended Section 302 of WRDA 86 to require (1) the Users Board to "meet not less frequently than semi-annually" and (2) the Secretary of the Army to "communicate not less frequently than once each quarter to the Users Board the status of inland waterways system project activity throughout the nation." Pursuant to this requirement, the Users Board held three formal meetings during calendar year 2020, as follows:

- Meeting No. 93 on February 19th in Fort Smith, Arkansas;
- Meeting No. 94 on July 22nd online virtually; and
- Meeting No. 95 on October 30th online virtually.

On the day preceding Board Meeting No. 93, a project site visit and briefing by the U.S. Army Corps of Engineers was conducted, at Robert S. Kerr Lock & Dam at Sallisaw, OK. No site visit or briefing was held prior to Board Meeting No. 94. On the day preceding Board Meeting No. 95, a project visit to Mississippi River Mel Price Locks and Dam, Alton IL, and Illinois Waterway LaGrange Lock and Dam, IL was hosted and briefings were held by Corps personnel for the Users Board.

Prior public notice of all three Users Board meetings was published in the Federal Register, and all three meetings were open to the public and held under the provisions of the Federal Advisory Committee Act of 1972, as amended.

INLAND WATERWAYS TRUST FUND

Revenues

Annual revenues deposited into the Inland Waterways Trust Fund (IWTF) during Fiscal Year (FY) 2020 declined somewhat from amounts deposited in recent years. According to the Treasury Department's IWTF status report for the month ending September 30, 2020, revenue totaling $112.4 million was deposited into the IWTF during FY 2020, $111.7 million in diesel fuel taxes and $0.7 million in interest. The $112.4 million total constituted an $8.8 million decrease below the annual total for FY 2019 and a $4.4 million IWTF revenue decrease below the total for FY 2018, as reflected in Table 1.

Table 1: Annual IWTF Revenues (Millions of Dollars)

Fiscal Year	Diesel Tax Receipts	Interest	Total Revenues
2014*	$81.7	$0.0	$81.8
2015†	$97.9	$0.0	$97.9
2016	$110.9	$0.2	$111.1
2017	$113.7	$0.7	$114.4
2018	$115.0	$1.8	$116.8
2019	$117.0	$4.2	$121.2
2020	$111.7	$0.7	$112.4

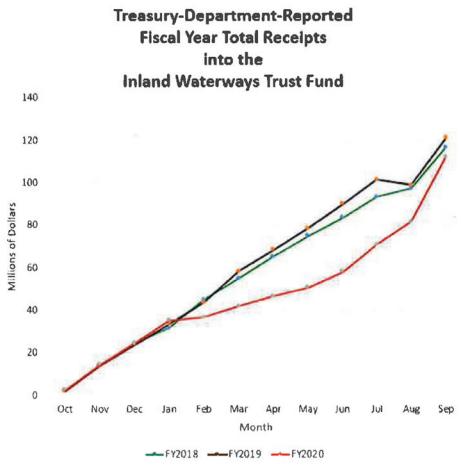
On average, annual receipts into the Inland Waterways Trust Fund during the five years during which the current 29 cents-per-gallon diesel fuel tax was in effect for the full year (FY's 2016 through 2020) amounted to $115.18 million per year.

For much of FY 2020, it appeared that the full-year revenue total for the year would be appreciably lower than the $112.4 million actually deposited into the Trust Fund. Beginning with the amount which the Treasury Department reported for the month of February 2020 and continuing for each of the next four months, Treasury's estimates of aggregated monthly IWTF receipts were significantly lower than the amounts Treasury had reported for the same months in both FY 2018 and FY 2019. IWTF revenues for the month began to exceed prior year comparable-month amounts in the July 2020 and August 2020 Treasury reports. Fortunately, Treasury's end-of-fiscal-year report for September 2020 reflected September's receipts recouping much of the lost ground. Figure 2 shows the month-by-month aggregated IWTF revenue receipts reported each month by the Treasury Department for Fiscal Years 2018, 2019, and 2020.

* Full year fuel tax collection at 20 cents per gallon.

† Half-year fuel tax collection at 20 cents per gallon and half-year at 29 cents per gallon, effective April 1, 2015

Figure 2:



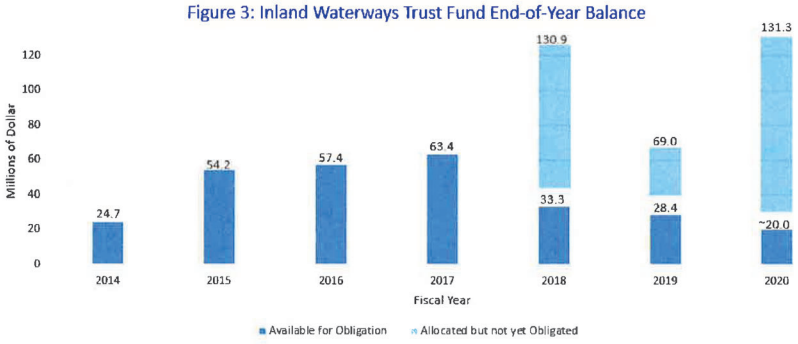
	FY2018	FY2019	FY2020
OCT	2.12	2.12	2.50
NOV	14.10	13.93	14.71
DEC	24.83	24.18	24.82
JAN	31.72	33.50	35.33
FEB	44.99	43.73	36.75
MAR	54.98	58.33	41.92
APR	65.29	68.47	46.76
MAY	74.99	78.64	50.96
JUN	83.68	90.10	58.24
JUL	93.46	101.51	70.93
AUG	97.22	99.10	81.84
SEP	116.81	121.24	112.38

The revenue decline which began in February 2020 coincided with and principally was caused by the onset of the COVID-19 pandemic in the United States and throughout the world. The decline continued to worsen until the report for July, which was the first report to reflect the beginning-to-improve overall economic conditions in the Nation. The Board believes that two other factors explaining FY 2020's lower-than-expected IWTF receipts for the year were the occurrence of unusually adverse weather conditions, including a record-breaking number of named hurricanes in 2020 and persistent dangerous high-water conditions on much of the inland waterways system during the year, and the lengthy closure (discussed later in this report) of the Illinois Waterway for major maintenance on five of that waterway's locks and dams. A fourth contributing factor to FY 2020's reduced level of IWTF receipts was low demand in the latter third of the fiscal year for commodity transportation generally due to the collapse of the worldwide petroleum markets and international trade disruption with China.

End-of-Year IWTF Balance

Figure 3 illustrates how the end-of-fiscal-year balance in the Inland Waterways Trust Fund has changed from year to year since Fiscal Year 2014. The $69 million balance at the end of Fiscal Year 2019 represented significant improvement from the $130.9 million end-of-year balance for Fiscal Year 2018. This improvement resulted in an unusually-large "catch-up" transfer from the IWTF to the Corps during FY 2019 of $183.2 million to compensate for the abnormally-low $49.3 million transfer in FY 2018.[1]

Figure 3: Inland Waterways Trust Fund End-of-Year Balance



Unfortunately, FY 2020 has ended with a return to a far-too-high end-of-year Trust Fund balance of $131.3 million. According to the Treasury Department's end-of-FY 2020 report, only $50 million was transferred to the Corps of Engineers during the fiscal year for project construction work performed during the year. For an IWTF project construction program having five on-going inland waterways construction projects (Olmsted, Monongahela River (Lower Mon), Kentucky, Chickamauga, and LaGrange) and project-specific allocated appropriations totaling $329.8 million in FY 2019 and $336.3 million in FY 2020, this high $131.3 million end-of-year balance in the Trust Fund raises questions about whether artificial Office of Management and Budget-imposed funding constraints are preventing the Corps' project execution from being as efficient as it could be.

The Users Board is concerned about FY 2020's high end-of-year balance. The Board again notes, this time with growing concern that, overall, the end-of-year balance in the IWTF is gradually increasing and urges the Corps to fully employ IWTF resources to optimize the construction productivity of those resources while continuing to operate in a fiscally-sound manner. The Users Board believes a significantly lower minimum reserve balance in the IWTF of approximately $20 million would provide ample cushion for variations in IWTF receipts but not unnecessarily restrict spending on the critical projects in the pipeline.

[1] As indicated in the Board's 31st Annual Report, the Corps explained FY 2018's low obligation level as being caused by not having enough time to obligate and spend more due to how late in the year the Consolidated Appropriations Act (P.L. 115-141) was signed into law.

ECONOMIC RECOVERY THROUGH INFRASTRUCTURE INVESTMENT

President Biden has expressed his intention to advance a major infrastructure-investment-based economic recovery initiative early in the First Session of the 117th Congress. Congressional leaders in both political parties and in both the House of Representatives and the Senate also have offered statements of strong support for substantial new investment in the Nation's infrastructure.

Users Board members unanimously endorse including in this legislation significant additional funding for the construction of the Nation's inland waterways system transportation infrastructure. Providing this funding, in the Board's view, will create a sustainable advantage to American industries that ship their products on our waterways and, by increasing the reliability and efficiency of the waterways, make American industry more competitive at home and in the world market. At least $3 billion of infrastructure funds should be appropriated in this comprehensive infrastructure investment legislation for the list of ongoing and new start construction projects to modernize the inland waterways system. The Corps September 2020 draft Capital Infrastructure Strategy outlines the shared view of the top 15 new start project priorities from the Users Board and Corps which would require $7.1 billion in total efficient funding, as follows:

Remaining Cost of Projects Currently Under Construction

Project	River/State	Amount
Chickamauga Lock and Dam	Tennessee River/ TN	$230,300,000
Kentucky Lock and Dam	Tennessee River/ KY	$562,055,099
	Total=	**$792,355,099**

New Start Construction Projects

Project	River/State	Amount
Upper Mississippi River Lock and Dam 25	Mississippi River/ MO & IL	$626,024,000
Three Rivers	MKARNS/AR & OK	$201,652,000
Montgomery Lock	Ohio River/ PA	$677,570,000
LaGrange Lock	Illinois River/ IL	$507,433,000
Upper Mississippi River Lock and Dam 24	Mississippi River/ MO & IL	$686,083,000
MKARNS 12 Foot Channel	MKARNs/AR & OK	$234,428,000
Emsworth Lock	Ohio River/ PA	$463,180,000
Upper Mississippi River Lock and Dam 22	Mississippi River/ MO & IL	$578,532,000
Upper Mississippi River Lock and Dam 21	Mississippi River/ MO & IL	$749,869,000
Dashields Lock	Ohio River/ PA	$454,738,000
Peoria Lock	Illinois River/ IL	$547,838,000
Upper Mississippi River Lock and Dam 20	Mississippi River/ MO & IL	$496,502,000
Thomas O'Brien Major Rehab	Little Calumet River/ IL	$53,000,000
Brazos River Flood Gate	Gulf Intracoastal Waterway/ TX	$158,147,000
Colorado River Lock	Gulf Intracoastal Waterway/ TX	$251,630,000
	Total =	**$6,276,849,000**

Providing this additional funding will greatly expedite the construction initiation and completion of these inland waterway modernization investments, minimize the costs necessary to complete these projects, and result in the delivery of the projects' intended national economic development benefits far earlier than could be achieved without the additional funding. A few years ago, the National Waterways Foundation released a study performed by researchers at the Universities of Kentucky and Tennessee that analyzed the economic impacts of preserving the inland waterways system and expediting the construction of Congressionally-authorized lock and dam modernizations so that they would be completed in 10 years rather than the then-current estimate of more than 20 years.[‡] The study results concluded that preserving the system is critical, helping to sustain nearly 541,000 full-time jobs and $21 billion in annual incomes. Further, the study found that expediting modernization over a 10-year timeframe would hasten the addition of another 35,000 jobs to this total, add $14 billion in additional incomes over 10 years, and decrease the overall system construction costs.

Another recent study documenting the critical role that the inland waterways system plays in the Nation's economy was published in August of 2019. Sponsored by the U.S. Department of Agriculture, the "Importance of Inland Waterways to U.S. Agriculture" was prepared, as its title suggests, to document and quantify the importance of the inland waterways system to the U.S. economy and, specifically, to U.S agriculture. As a starting point, the study noted that "due to its efficiency and lower costs, the inland waterways system saves between $7 billion and $9 billion annually over the cost of shipping by other modes." The USDA report analyzed three funding scenarios: status quo spending through the year 2045, increased investment to complete all authorized inland navigation projects in 10 years, and decreased investment through 2045. Compared with the status quo, the increased investment scenario led, among other things, to a 39 percent increase in Gross Domestic Product (GDP), while the reduced investment scenario led to a 38 percent/$70 billion decrease in GDP. The $72 billion increase in GDP with the increased investment scenario delivered an estimated 11.4 x multiple on the incremental funding required through 2045 alone and resulted in a 20 percent/77,000 increase in employment, a 40 percent/$142 billion increase in sales, and significant increases in both the volume and market value of U.S. farm exports.

Recent work by the U.S. Army Corps of Engineers is helpful in quantifying the magnitude of savings, both in terms of costs avoided and completion delays prevented, as a result of including $7.1 billion for inland waterway project construction in infrastructure investment legislation. The Corps' September 2020 draft of the Capital Investment Strategy analyzed three hypothetical funding scenarios, one of which was labeled the "10-Year Construction" scenario. That scenario allocated and staged the necessary funding to the 15 projects listed above such that "the 15 projects would all be completed in FY 2033 at an estimated cost of $7.05 billion". Table 2 below is re-produced from Table 17 in the draft CIS report which shows the project-specific allocations each year through FY 2033 for the 10-Year Construction scenario.

The Corps' September 2020 draft CIS report provided similar information analyzing what the report characterized as the "Baseline $240 million scenario", concluding that under the Baseline

[‡]See, http://nationalwaterwaysfoundation.org/documents/INLANDNAVIGATIONINTHEUSDECEMBER2014.PDF

$240 million scenario "The 15 projects would be completed in FY 2053 at an estimated cost of $9.23 billion." In other words, proceeding to construct the 15 projects for $7.05 billion under the expedited 10-Year Construction scenario would save $2.18 billion and return to the Nation 20 years earlier the economic benefits that Congress authorized those projects to deliver. In addition to the savings that could be captured through efficient funding, these projects all deliver significant return on investment to the Nation through tangible economic benefits.

Table 2: Ten-Year Scenario Construction and Design Costs*

20-YR DESIGN TOTAL:	$ 345.56	Design Cost	$ 35.5	$ 51.9	$ 46.9	$ 61.8	$ 52.4	$ 59.9	$ 37.1	$ -	$ -	$ -	$ -	$ -	$ -
20-YR CONSTRUCTION TOTAL:	$ 7,050.60	Construction Cost	$ 247.7	$ 248.5	$ 532.0	$ 534.2	$ 755.7	$ 783.3	$ 980.3	$ 910.4	$ 723.3	$ 570.4	$ 453.9	$ 215.0	$ 39.0
Project	Project Description	Waterway	FY2021	FY2022	FY2023	FY2024	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030	FY2031	FY2032	FY2033
Olmsted Locks & Dam	New Locks and Dam	Ohio													
Locks & Dams 2,3, & 4 Monongahela River Navigation	New Lock	Monongahela													
Kentucky Lock Addition	New Lock	Tennessee	169.4	169.1	186.3	121.0									
Chickamauga Lock	New Lock	Tennessee	78.3	79.4	95.4	47.0									
NESP Upper Miss. River L&D 25	New Lock	Mississippi	10.3	6.4	103.8	107.0	110.2	113.5	116.9	24.2					
Three Rivers	Channel Protection	MKARNS	5.2	5.3	66.4	79.7	82.1	10.5							
Upper Ohio – Montgomery L&D	New 600 ft Lock	Ohio	7.2	1.1	56.8	93.9	153.5	187.2	187.8	24.2					
NESP IWW LaGrange L&D	New 1200 ft Lock	Illinois	12.9	10.6	83.2	85.7	88.2	90.9	93.6	31.0					
NESP Upper Miss. River L&D 24	New 1200 ft Lock	Mississippi		8.0	13.7	14.1	105.1	109.3	112.6	115.9	119.4	35.7			
MKARNS 12' Channel	Channel Deepening	MKARNS			8.2	8.4	54.3	56.0	57.7	59.4	41.5	16.6			
NESP Upper Miss. River L&D 22	New 1200 ft Lock	Mississippi		6.9	10.9	6.8	76.8	79.1	81.4	83.9	86.4	24.6			
Upper Ohio – Emsworth L&D	New 600 ft Lock	Ohio		13.7	14.1	15.6	84.5	137.0	192.5	145.8	43.4				
NESP Upper Miss. River L&D 21	New 1200 ft Lock	Mississippi				8.4	14.5	14.9	116.5	120.0	123.6	127.3	131.2	37.9	
NESP IWW Peoria L&D	New 1200 ft Lock	Illinois				8.4	14.5	14.9	76.3	78.6	81.0	83.4	85.9	37.9	
Upper Ohio – Dashields L&D	New 600 ft lock	Ohio					14.7	15.2	16.8	87.3	141.2	192.4	149.9	46.7	
NESP Upper Miss. River L&D 20	New 1200 ft Lock	Mississippi					8.7	14.9	15.4	79.5	81.9	84.4	86.9	89.5	39.0
TJ O'Brien	Major Rehabilitation	Illinois							4.9	62.1	4.9				

blue = design

purple = construction

* title in the draft CIS report was "Twenty Year Construction and Design Costs", with the table showing no expenditures for fiscal years 2034

CALENDAR YEAR 2020: A YEAR IN REVIEW

Fiscal Year 2020 Work Plan

The Energy and Water Development and Related Agencies Appropriations Act for Fiscal Year 2020 (Division C of P.L. 116-94, Further Consolidated Appropriations Act, 2020) directed the U.S. Army Corps of Engineers to provide within 60 days of enactment the work plan delineating how the funds being appropriated were to be allocated, including the significant increased amounts Congress provided in addition to the barebones deficient Administration budget request. The Corps publicly released the FY 2020 Work Plan in a timely fashion on February 10, 2020. The Users Board was delighted to see that the Corps work plan closely adhered to the recommendations made by the Board in its 32nd Annual Report, including continued Construction Account funding as follows:

- $111 million to complete Monongahela River Locks and Dams 2, 3 and 4 (Lower Mon);
- $63 million to complete Olmsted Locks and Dam;
- $61.1 million for Kentucky Lock; and
- $101.7 million for Chickamauga Lock and Dam.

None of the funds for the Olmsted, Kentucky or Chickamauga projects had been requested by the Administration in its FY 2020 budget proposal.

The Board was also very pleased to see that, consistent with the Board's recommendations in the 32nd Annual Report, the FY 2020 Work Plan allocated just under $18.3 million for Preconstruction Engineering and Design (PED) of the Board's top-three candidate new start construction projects as follows:

- $7.7 million for the Upper Ohio River Navigation project's Montgomery Lock;
- $4.5 million to continue PED for the Upper Mississippi River – Illinois Waterway Navigation and Ecosystem Sustainability Program (NESP); and
- $6.1 million for the Three Rivers project in southeast Arkansas.

This level of new PED funding positions NESP and Montgomery Lock to begin construction in FY 2021 and Three Rivers to begin construction in FY 2022 assuming subsequent PED funding need is met.

Fiscal Year 2021 Administration Budget Proposal

On February 10, 2020, the same day that the FY 2020 Work Plan was publicly released, the Administration released the details of the Administration's proposed FY 2021 budget for the U.S. Army Corps of Engineers Civil Works Program. Unlike the very strong FY 2020 Work Plan, which was driven by Congress' healthy increased level of appropriations for FY 2020, the Administration's FY 2021 budget proposal for the Corps was grossly deficient. Overall, the Administration proposed to cut the Civil Works Program to a level 22 percent below the $7.65 billion appropriated in FY 2020 for Civil Works. Most troubling from the Users Board's perspective, despite entering FY 2021 with a balance of $131.3 million in the Inland Waterways Trust Fund and despite projecting that an additional $115 million in inland waterways diesel fuel taxes would be collected and be deposited into the Trust Fund during FY 2021, the Administration proposed to zero-fund IWTF construction projects, including the funds needed to continue the ongoing Kentucky and Chickamauga projects. Making matters worse, the Administration's budget proposed to significantly increase the amount paid each year by the commercial navigation users of the inland waterways. The committee report accompanying the Senate Energy and Water Development Subcommittee's draft FY 2021 appropriations bill for the Corps Civil Works Program states "It is absurd not to spend any of the fees already being collected while imposing additional fees on the same commercial users." The Users Board completely agrees.

Illinois Waterway Closure

The Users Board would like to highlight and express its appreciation to the Corps for the extraordinary lock and dam rehabilitation work that the Corps successfully accomplished on the Illinois Waterway in 2020. Despite lingering high-water conditions and myriad management challenges associated with the raging nationwide COVID-19 pandemic, the Corps was able to complete during the July 1st to October 29th timeframe what the Rock Island District Commander has described as "the largest investment in the Illinois Waterway since its inception" involving the simultaneous closure, and rehabilitation and repairs costing more than $200 million of five lock and dam projects. Never before had the Illinois Waterway been completely shut down to navigation for so long during the middle of the shipping season.

From an engineering, logistical, and construction management perspective, the Corps challenge was enormous to conduct major repair work simultaneously on the LaGrange, Peoria, Starved Rock, Marseilles, and Dresden Island locks and dams. Beyond that, more than three years of exchanging information, planning, and coordinating with stakeholders preceded the closures, which was essential for the Corps to understand the commercial and other needs of the stakeholders and for the shipping community to adjust their transportation requirements in a way to try to minimize adverse economic impacts. In the end, the entire waterway was able to reopen to navigation traffic on October 29th, the original system-wide target completion date.

On behalf of the entire navigation industry, the Users Board unanimously congratulates and thanks the Corps for this exceptional accomplishment.

Fiscal Year 2021 Appropriations

The Fiscal Year 2021 Energy and Water Development and Related Agencies Appropriations Act (E&WD Act), which funds, among other things, the Department of Energy and the U.S. Army Corps of Engineers Civil Works Program, became law in the final days of the 116th Congress as Division D of the Consolidated Appropriations Act for 2021 (P.L. 116-260). At $7.795 billion, the overall Civil Works Program received record-level funding for the sixth consecutive fiscal year. Of special importance to the users of the inland waterways system, IWTF-supported construction projects were provided $322.8 million of funding, a total rejection of the Administration's irresponsible budget proposal to zero-fund even ongoing IWTF projects. Also, of importance to inland waterway interests, the FY 2021 E&WD Act:

- requires one lock and dam construction "new start" project during Fiscal Year 2021,
- increases appropriations for operation and maintenance of inland navigation projects by at least $60 million -- and perhaps as much as $100 million -- above the Administration's recommended $726 million budget amount, and
- provides an increase of more than $50 million to fund feasibility and preconstruction study work, including Preconstruction Engineering and Design (PED) for important inland navigation projects like the Upper Mississippi River – Illinois Waterway Navigation and Ecosystem Sustainability Program (NESP), the Upper Ohio River Navigation Project, and the Three Rivers project in Arkansas, as well as for projects in other Corps mission areas.

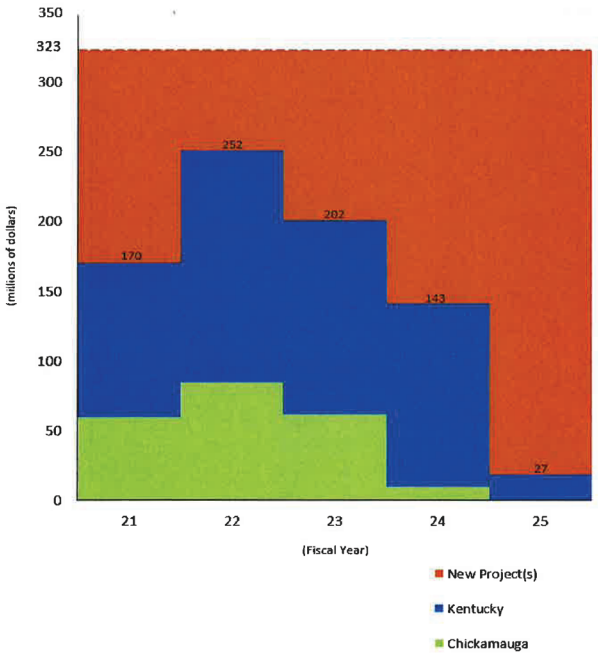
According to the most-current information provided to the Users Board by the Corps at the late-October Board meeting, the two ongoing lock and dam modernization projects still in need of additional appropriations, Kentucky Lock and Chickamauga Lock and Dam, require $110 million and $60 million, respectively, to maintain efficient construction schedules in FY 2021. If these efficient funding amounts remain unchanged, with $322.8 million appropriated for FY 2021, more than $150 million in additional FY 2021 appropriations will be available for the new start project and to expedite ongoing Kentucky and Chickamauga construction work.

Consistent with Section 109 of WRDA 2020, the FY 2021 E&WD Act establishes the same 65 percent/35 percent cost share formula for IWTF-supported projects that WRDA 2020 requires through FY 2031 for all funded inland navigation projects. Looking at the 5-year timeframe that begins with FY 2021 and ends with FY 2025 is instructive. Table 3 lists the efficient funding amounts each year for the ongoing Kentucky and Chickamauga projects and compares those amounts to an assumed constant $323 million annual construction program through the end of FY 2025. Figure 4 displays this same information in a slightly different fashion. Both Table 3 and Figure 4 make clear that, over the course of the entire 5-year period, significant funds should be available to begin and continue construction of the next generation of inland waterways system modernization projects.

Table 3: IWTF Project Funding Profile

	FY 21	FY22	FY23	FY24	FY25	TOTAL
Chickamauga	60	89	63	11	8	231
Kentucky	110	163	139	132	19	563
Subtotal	170	252	202	143	27	794
Fully Funded	323	323	323	323	323	1,615
Remaining Available	153	71	121	180	296	821

Figure 4: IWTF Project Funding Overview



Water Resources Development Act of 2020 (WRDA 2020)

On December 21, 2020, Congress overwhelmingly passed the Consolidated Appropriations Act, 2021 (P.L. 116-260). Division AA of the bill contained the text of the Water Resources Development Act of 2020 (WRDA 2020), bipartisan authorization legislation for the U.S. Army Corps of Engineers Civil Works Program that had been developed by the House Committee on Transportation and Infrastructure and the Senate Committee on Environment and Public Works.

From the Users Board's perspective, enactment of WRDA 2020 was noteworthy for a number of reasons. It continued the practice in recent years of finalizing on a biennial basis authorization legislation for the policies and projects of the U.S. Army Corps of Engineers. It increased the Section 902(b) authorized appropriations ceiling for the ongoing Kentucky Lock project. It authorized construction of the Colorado River Locks and the Brazos River Floodgates projects on the Gulf Intracoastal Waterway (GIWW). Perhaps most significantly, Section 109 of WRDA 2020 established a new statutory cost share formula for the construction and major rehabilitation of any inland waterways system navigation project receiving an appropriation during FYs 2021 through 2031.

In recent years the Inland Waterways Users Board and many others consistently recommended that the cost share policy applicable to constructing inland waterways system navigation projects be changed to enable these projects to be completed much more quickly and at substantially lower total costs. During 2020 Congress heeded these recommendations and included language in the Water Resources Development Act of 2020 to address what the bill's House Floor Managers correctly characterized as this "critical need." Section 109 of WRDA 2020 establishes that, for any inland waterways navigation project "that receive(s) a construction appropriation during any of fiscal years 2021 through 2031, 35 percent of the cost of the project shall be paid from amounts appropriated from the Inland Waterways Trust Fund…". Section 109 further provides that this cost share formula -- 35 percent from the IWTF and 65 percent from general revenues -- shall continue "until construction of the project is complete", where that completion occurs after FY 2031.

Users Board members view enactment of WRDA 2020 and Section 109 as a major positive development and thank the bipartisan leadership of the House of Representatives and the Senate and their respective Committees on Transportation and Infrastructure and Environment and Public Works for this significant accomplishment. While not exactly the formula that the Users Board had recommended, the change to 65/35 constitutes real public policy progress in the Nation's continuing efforts to modernize our critically important transportation infrastructure. When fully appropriated each year, the Users Board notes that the improved formula will increase the size of the Nation's inland navigation project construction program that can be supported each year by the 29-cents-per-gallon diesel fuel tax the commercial users of the inland waterways system currently pay into the IWTF by almost 47 percent, or roughly $100 million each year over the 2021-through-2031 timeframe, with significant additional amounts extending beyond that. The Board was also gratified to see the direction expressed by the House Floor Managers that the additional programmatic support being provided through the new cost share formula is intended to be prioritized for the Navigation and Ecosystem Sustainability Program

(NESP), the Upper Ohio River Navigation project, and the Three Rivers project in Southeast Arkansas, the three projects that are the Board's highest new start construction priorities.

Capital Investment Strategy

Substantial progress was made during 2020 in updating and revising the Corps' 2016 Capital Investment Strategy (CIS). Users Board members' views were solicited and input was provided on the information and analytical methodology to be used in setting construction project priorities in the updated CIS report. Corps leaders briefed the Users Board at each of the three public Board meetings during 2020 on the status of the CIS revision effort, culminating in a review during the October 30th virtual meeting of the draft report submitted by the Corps and Assistant Secretary of the Army for Civil Works to the Office of Management and Budget (OMB) for approval. Board members learned at the October 30th meeting that OMB had notified the Corps the previous evening that revisions to the draft CIS report were required, although no information was provided to the Board about the specifics of the required changes or when the report was expected to be finalized.

The September 2020 draft CIS report briefed to the Board identified 15 top-priority capital investment projects for new start construction selection and funding, grouped into four categories as depicted in Table 4.

Table 4: New Start Construction Projects

Group	Project Title	Project Location	State(s)	Fully Funded Cost ($K)
A	UMR-IWW System NESP	L&D 25 (Mississippi River)	MO/IL	$626,024
A	Three Rivers	MKARNS	AR	$201,652
A	Upper Ohio Navigation Locks & Dams Improvements	Montgomery Locks & Dam	PA	$677,570
A	UMR-IWW System NESP	LaGrange L&D (IWW)	IL	$507,433
B	UMR-IWW System NESP	L&D 24 (Mississippi River)	MO/IL	686,083
B	MKARNS 12 ft. Channel	MKARNS	AR/OK	$234,428
B	Upper Ohio Navigation Locks & Dams Improvements	Emsworth Locks & Dam	PA	$463,180
B	UMR-IWW System NESP	L&D 22 (Mississippi River)	MO/IL	$578,532
C	UMR-IWW System NESP	L&D 21 (Mississippi River)	IL	$749,869
C	Upper Ohio Navigation Locks & Dams Improvements	Dashields Locks & Dam	PA	$454,738
C	UMR-IWW System NESP	Peoria L&D (IWW)	MO	$547,838
D	UMR-IWW System NESP	L&D 20 (Mississippi River)	MO	$496,502
D	Thomas O'Brien L&D Major Rehabilitation	IWW	IL	$53,000

Three funding scenarios were explored for these priority projects: a "Baseline $240M/Year" scenario, an "Enhanced $400M/Year" scenario, and a "10-year" scenario. The Corps' draft CIS report summarized the comparative results of the three scenarios as follows:

- "The Baseline $240M/Year Scenario represents a $5.696 billion program over the next 20 years, requires that IWTF revenues increase at 1.5% per year, and, during this time, nine projects will complete construction and two projects are in construction. There would be still four projects remaining to start construction, which would be complete in 2053 at an estimated total cost of $9.23 billion.

- The Enhanced $400M/Year Scenario represents a $7.80 billion program from 2021 to 2039 with all 15 projects complete.

- The 10-Year Scenario represents a $7.05 billion program from 2021 to 2033 with all 15 projects complete."

USERS BOARD RECOMMENDATIONS

- **In developing and implementing the FY 2021 Work Plan, the U.S. Army Corps of Engineers should follow Congressional direction and "make use of all estimated annual revenues, which includes a total appropriation of $113,000,000 from the IWTF for ongoing construction projects and one new IWTF cost-shared project to be started in fiscal year 2021."** This should total approximately $323 million in FY 2021 funding for inland navigation modernization projects. For ongoing projects (Chickamauga and Kentucky), funds should be allocated in amounts at least equal to the efficient funding levels reported by the Corps for each of those projects at the October 30, 2020 Users Board Meeting No. 95. Additional FY 2021 appropriated funding above those amounts should be allocated to one or both project(s), consistent with the need to optimize the efficient use of those additional amounts and also to fund the FY 2021 construction new start required by Congress. The Corps should select new start construction projects based on the priorities outlined in the draft 2020 Capital Investment Strategy report (i.e., Mississippi River Lock and Dam 25 (NESP), Ohio River Montgomery Lock, and Three Rivers). All three of these candidate new start projects share strong industry and Congressional support. See Appendix C, for example, concerning Congressional support for NESP.

- **In any comprehensive infrastructure investment legislation enacted during 2021, Congress should appropriate significant additional funding for the construction and major rehabilitation of capital navigation improvement projects on the inland waterways system.** As the Corps' draft Capital Investment Strategy report illustrates, expediting completion of the 15 highest priority inland navigation modernization projects valued at $7.1 billion to occur over a ten-year timeframe rather than the more than 30 years under the draft report's baseline scenario will save almost $2.2 billion and complete all 15 projects 20 years earlier. It will also support thousands of high-paying American jobs, create a sustainable advantage for American industries that ship their products on our waterways, and, by increasing the reliability and efficiency of the waterways, make American industry more competitive at home and in the world market. At least $3 billion of additional infrastructure funds should be appropriated in the comprehensive infrastructure investment legislation for the list of ongoing and new start construction projects contained in the Corps of Engineers September 2020 draft Capital Investment Strategy based on the priorities outlined therein. Providing this level of additional infrastructure investment funding also will be consistent with 2020's House-passed H.R. 2, the Moving Forward Act, which called for $3 billion as a "down payment" for inland waterways lock and dam construction and major rehabilitation.

- **Exclusive of any funding provided in comprehensive infrastructure legislation or in emergency relief legislation, the Administration's budget proposal for FY 2022 should be based on an assumed revenue stream into the IWTF for FY 2022 of $115 million.** Users Board members believe that the Nation's economy is likely to continue to experience improvement during FY 2022 and that, given average annual Trust Fund revenues for the past five years (FY 2016 through FY 2020) of $115.2 million, the recommended $115 million amount is a conservative and prudent planning assumption to use for FY 2022. The

Board also believes that maintaining a minimum $20 million balance in the IWTF is appropriate and prudent from a financial management perspective.

- **Both the Administration's FY 2022 budget proposal and final Congressional enactment of the Energy and Water Development and Related Agencies Appropriations Act for FY 2022 should call for the appropriation of the full amount supportable by the diesel fuel tax receipts deposited into the Inland Waterways Trust Fund for the construction and major rehabilitation of inland navigation projects.** Based on $115 million IWTF revenues and WRDA 2020's new 65/35 cost share formula, this should total approximately $330 million for inland navigation capital projects for FY 2022. Efficient funding amounts should be provided for ongoing projects, including Chickamauga, Kentucky, and the FY 2021 new start. In addition, FY 2022 funding should be provided for two additional new start construction projects, which should be selected from the Users Board's top-priority candidates (i.e., Lock and Dam 25, Montgomery Lock, and Three Rivers). The Users Board believes this all can be accomplished with funding likely to be available for FY 2022.

- **For Fiscal Year 2022, the Administration and Congress should continue to increase the robust levels of funding provided during each of the past four fiscal years for the Civil Works Program's Operation and Maintenance (O&M) account and, within that account, for O&M activities affecting inland and coastal navigation throughout the Nation.** Additional funding will help the Corps to address deferred maintenance in O&M and will be completely consistent with the broadly-supported objectives of improving our national standard of living, growing the Nation's economy, and increasing our international competitiveness.

- **The Administration should act expeditiously to make Inland Waterways Users Board appointments in a timeframe adequate to prevent a gap in Users Board membership when the terms of five current Users Board members expire on May 27, 2021.** Significant preliminary work has been done and the necessary appointments should be finalized at the earliest possible opportunity to assure full Users Board membership during the entirety of 2021.

ACKNOWLEDGEMENTS

The Inland Waterways Users Board wishes to thank the U.S. Army Corps of Engineers for the support the Corps provides to the Board. The Users Board congratulates Lieutenant General (LTG) Scott A. Spellmon on his promotion and Senate confirmation this year as the Nation's 55th Chief of Engineers and particularly thanks him for his active engagement with the Board in his previous role as the Board's Executive Director during his assignment as Deputy Commanding General for Civil and Emergency Operations. The Board welcomes Major General (MG) William H. Graham, LTG Spellmon's successor as Deputy Commanding General for Civil and Emergency Operations and as the Board's Executive Director, and appreciates the interest and involvement MG Graham has demonstrated during Meetings Nos. 94 and 95. Finally, the Board also expresses its appreciation to Mr. Mark R. Pointon, the Designated Federal Officer for the Board, and to the Corps division and district staff, Corps Headquarters staff, and Corps Institute for Water Resources staff who all have provided thorough and timely information throughout the year.

Appendix A

History

The Inland Waterways Fuel Tax was established to support inland waterways infrastructure development and rehabilitation. Commercial users are required to pay this tax on fuel consumed in inland waterways transportation. Revenues from the tax are deposited in the Inland Waterways Trust Fund and generally fund 50% of the cost of inland navigation projects each year as authorized. From the beginning of 1995 through March 31, 2015, the amount of tax paid by commercial users was $.20 per gallon of fuel, which in recent years generated approximately $80 to $85 million in contributions annually to the Inland Waterways Trust Fund. With the President's December 2014 signing of Public Law 113-295, the diesel fuel tax rate increased to $.29 per gallon effective April 1, 2015, generating additional revenues for the Inland Waterways Trust Fund.

Reflecting the concept of "Users Pay, Users Say", the Water Resources Development Act of 1986 (Public Law 99-662) (WRDA 86) established the Inland Waterways Users Board (the Board), a Federal advisory committee, to give commercial users a strong voice in the investment decision-making they are supporting with their cost-sharing tax payments. The principal responsibility of the Board is to recommend to the Congress, the Secretary of the Army and the U.S. Army Corps of Engineers the prioritization of new and replacement inland navigation construction and major rehabilitation projects. Specifically, Section 302 of WRDA 86 tasked the Board as follows:

> *"The Users Board shall meet at least semi-annually to develop and make recommendations to the Secretary regarding construction and rehabilitation priorities and spending levels on the commercial navigational features and components of the inland waterways and inland harbors of the United States for the following fiscal years. Any advice or recommendation made by the Users Board to the Secretary shall reflect the independent judgment of the Users Board. The Users Board shall, by December 31, 1987, and annually thereafter file such recommendations with the Secretary and with the Congress."*

On June 10, the President signed the Water Resources Reform and Development Act (Public Law 113-121) which, among other things, modified WRDA 86's Section 302 to amend and increase the responsibilities of the Users Board. Section 2002 of WRRDA replaced subsection (b) of the 1986 Act's Section 302 as follows:

> *"(1) IN GENERAL. – The Users Board shall meet not less frequently than semiannually to develop and make recommendations to the Secretary and Congress regarding the inland waterways and inland harbors of the United States.*
> *(2) ADVICE AND RECOMMENDATIONS. – For commercial navigation features and components of the inland waterways and inland harbors of the United States, the Users Board shall provide –*
> > *(A) prior to the development of the budget proposal of the President for a given fiscal year, advice and recommendations to the Secretary regarding construction and rehabilitation priorities and spending levels;*
> > *(B) advice and recommendations to Congress regarding any feasibility report for a project on the inland waterway system that has been submitted to Congress*

pursuant to section 7001 of the Water Resources Reform and Development Act of 2014;

(C) advice and recommendations to Congress regarding an increase in the authorized cost of those features and components;

(D) not later than 60 days after the date of the submission of the budget proposal of the President to Congress, advice and recommendations to Congress regarding construction and rehabilitation priorities and spending levels; and

(E)" advice and recommendations on the development of a long-term capital investment program in accordance with subsection (d).

(3) PROJECT DEVELOPMENT TEAMS. – The chairperson of the Users Board shall appoint a representative of the Users Board to serve as an advisor to the project development team for a qualifying project or the study or design of a commercial navigation feature or component of the inland waterways and inland harbors of the United States.

(4) INDEPENDENT JUDGMENT. – Any advice or recommendation made by the Users Board to the Secretary shall reflect the independent judgment of the Users Board...

...(d) CAPITAL INVESTMENT PROGRAM. –

(1) IN GENERAL. – Not later than 1 year after the date of enactment of this subsection, the Secretary, in coordination with the Users Board, shall develop and submit to Congress a report describing a 20-year program for making capital investments on the inland and intracoastal waterways based on the application of objective, national project selection prioritization criteria.

(2) CONSIDERATION. – In developing the program under paragraph (1), the Secretary shall take into consideration the 20-year capital investment strategy contained in the Inland Marine Transportation System (IMTS) Capital Projects Business Model, Final Report published on April 13, 2010, as approved by the Users Board.

(3) CRITERIA. – In developing the plan and prioritization criteria under paragraph (1), the Secretary shall ensure, to the maximum extent practicable, that investments made under the 20-year program described in paragraph (1)—

(A) are made in all geographical areas of the inland waterways system; and

(B) ensure efficient funding of inland waterways projects.

(4) STRATEGIC REVIEW AND UPDATE. – Not later than 5 years after the date of enactment of this subsection, and not less frequent than once every 5 years thereafter, the Secretary, in coordination with the Users Board, shall –

(A) submit to Congress and make publicly available a strategic review of the 20-year program in effect under this subsection, which shall identify and explain any changes to the project-specific recommendations contained in the previous 20-year program (including any changes to the prioritization criteria used to develop the updated recommendations); and

(B)make revisions to the program, as appropriate.

(e) PROJECT MANAGEMENT PLANS. – The chairperson of the Users Board and the project development team member appointed by the chairperson under subsection (b)(3) may sign the project management plan for the qualifying project or the study or design of a commercial navigation feature or component of the inland waterways and inland harbors of the United States."

WRRDA's Section 2002 further clarifies the role of the Users Board in a new subsection (f) of Section 302, as follows:

"(f) ADMINISTRATION. –

(1) IN GENERAL. – The Users Board shall be subject to the Federal Advisory Committee Act (5 U.S.C. App.), other than section 14, and, with the consent of the appropriate agency head, the Users Board may use the facilities and services of any Federal agency.

(2) MEMBERS NOT CONSIDERED SPECIAL GOVERNMENT EMPLOYEES. – For the purposes of complying with the Federal Advisory Committee Act (5 U.S.C. App.), the members of the Users Board shall not be considered special Government employees (as defined in section 202 of title 18, United States Code).

(3) TRAVEL EXPENSES. – Non-Federal members of the Users Board while engaged in the performance of their duties away from their homes or regular places of business, may be allowed travel expenses, including per diem in lieu of subsistence, as authorized by section 5703 of title 5, United States Code."

Appendix B

List of the Fuel Taxed Inland and Intracoastal Waterways and System Map

Statutory Definitions of Inland and Intracoastal Fuel Taxed Waterways of the United States

SOURCES: Public Law 95-502, October 21, 1978, and Public Law 99-662, November 17, 1986.

1. Alabama-Coosa Rivers: From junction with the Tombigbee River at river mile (hereinafter referred to as RM) 0 to junction with Coosa River at RM 314.

2. Allegheny River: From confluence with the Monongahela River to form the Ohio River at RM 0 to the head of the existing project at East Brady, Pennsylvania, RM 72.

3. Apalachicola-Chattahoochee and Flint Rivers (ACF): Apalachicola River from mouth at Apalachicola Bay (intersection with the Gulf Intracoastal Waterway) RM 0 to junction with Chattahoochee and Flint Rivers at RM 107.8. Chattahoochee River from junction with Apalachicola and Flint Rivers at RM 0 to Columbus, Georgia at RM 155 and Flint River, from junction with Apalachicola and Chattahoochee Rivers at RM 0 to Bainbridge, Georgia, at RM 28.

4. Arkansas River (McClellan-Kerr Arkansas River Navigation System): From junction with Mississippi River at RM 0 to Port of Catoosa, Oklahoma, at RM 448.2.

5. Atchafalaya River: From RM 0 at its intersection with the Gulf Intracoastal Waterway at Morgan City, Louisiana, upstream to junction with Red River at RM 116.8.

6. Atlantic Intracoastal Waterway: Two inland waterway routes approximately paralleling the Atlantic coast between Norfolk, Virginia, and Miami, Florida, for 1,192 miles via both the Albemarle and Chesapeake Canal and Great Dismal Swamp Canal routes.

7. Black Warrior-Tombigbee-Mobile Rivers: Black Warrior River System from RM 2.9, Mobile River (at Chickasaw Creek) to confluence with Tombigbee River at RM 45. Tombigbee River (to Demopolis at RM 215.4) to port of Birmingham, RM's 374-411 and upstream to head of navigation on Mulberry Fork (RM 429.6), Locust Fork (RM 407.8), and Sipsey Fork (RM 430.4).

8. Columbia River (Columbia-Snake Rivers Inland Waterways): From the Dalles at RM 191.5 to Pasco, Washington (McNary Pool), at RM 330, Snake River from RM 0 at the mouth to RM 231.5 at Johnson Bar Landing, Idaho.

9. Cumberland River: Junction with Ohio River at RM 0 to head of navigation, upstream to Carthage, Tennessee, at RM 313.5.

10. Green and Barren Rivers: Green River from junction with the Ohio River at RM 0 to head of navigation at RM 149.1.

11. Gulf Intracoastal Waterway: From St. Mark's River, Florida, to Brownsville, Texas, 1,134.5 miles.

12. Illinois Waterway (Calumet-Sag Channel): From the junction of the Illinois River with the Mississippi River RM 0 to Chicago Harbor at Lake Michigan, approximately RM 350.

13. Kanawha River: From junction with Ohio River at RM 0 to RM 90.6 at Deepwater, West Virginia.

14. Kaskaskia River: From junction with Mississippi River at RM 0 to RM 36.2 at Fayetteville, Illinois.

15. Kentucky River: From junction with Ohio River at RM 0 to confluence of Middle and North Forks at RM 258.6.

16. Lower Mississippi River: From Baton Rouge, Louisiana, RM 233.9 to Cairo, Illinois, RM 953.8.

17. Upper Mississippi River: From Cairo, Illinois, RM 953.8 to Minneapolis, Minnesota, RM 1,811.4.

18. Missouri River: From junction with Mississippi River at RM 0 to Sioux City, Iowa, at RM 734.8.

19. Monongahela River: From junction with Allegheny River to form the Ohio River at RM 0 to junction of the Tygart and West Fork Rivers, Fairmont, West Virginia, at RM 128.7.

20. Ohio River: From junction with the Mississippi River at RM 0 to junction of the Allegheny and Monongahela Rivers at Pittsburgh, Pennsylvania, at RM 981.

21. Ouachita-Black Rivers: From the mouth of the Black River at its junction with the Red River at RM 0 to RM 351 at Camden, Arkansas.

22. Pearl River: From junction of West Pearl River with the Rigolets at RM 0 to Bogalusa, Louisiana, RM 58.

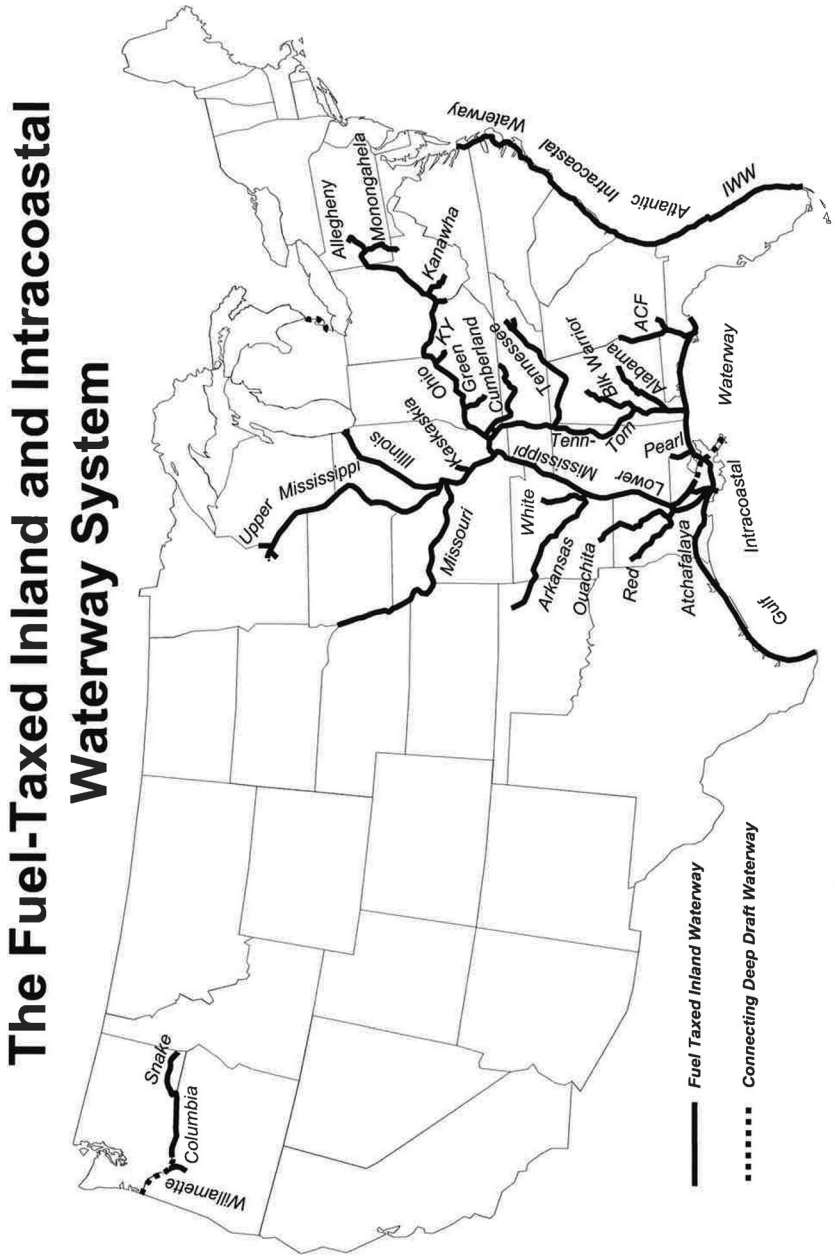
23. Red River: From RM 0 to the mouth of Cypress Bayou at RM 236.

24. Tennessee River: From junction with Ohio River at RM 0 to confluence with Holstein and French Rivers at RM 652.

25. White River: From RM 9.8 to RM 255 at Newport, Arkansas.

26. Willamette River: From RM 21 upstream of Portland, Oregon, to Harrisburg, Oregon, at RM 194.

27. Tennessee-Tombigbee Waterway: From its confluence with the Tennessee River to the Warrior River at Demopolis, Alabama.


The Fuel-Taxed Inland and Intracoastal Waterway System
Snake
Columbia
Willamette
Upper Mississippi
Illinois
Kaskaskia
Missouri
Ohio
Green
Cumberland
KY
Tennessee
Allegheny
Monongahela
Kanawha
Atlantic Intracoastal Waterway
MMI
Tenn-Tom
Mississippi
Lower
White
Arkansas
Quachita
Red
Atchafalaya
Gulf Intracoastal
Pearl
Black Warrior
Alabama
ACF
Waterway
Fuel Taxed Inland Waterway
Connecting Deep Draft Waterway

B-4

Appendix C

Congress of the United States
Washington, DC 20515

October 26, 2020

The Honorable R.D. James
Assistant Secretary of the Army for Civil Works
Office of the Assistant Secretary of the Army
108 Army Pentagon
Washington DC, 20310

Lieutenant General Scott A. Spellmon
Chief of Engineers and Commanding General
U.S. Army Corps of Engineers
441 G Street NW
Washington, DC 20314-1000

Dear Assistant Secretary James and Lieutenant General Scott A. Spellmon:

As you prepare the U.S. Army Corps of Engineers Work Plan for Fiscal Year (FY) 2021 Civil Works, we urge you to include a new start for a construction project through the Navigation and Ecosystem Sustainability Program (NESP). We appreciate that the Corps included $4.5 million for preconstruction engineering and design (PED) of the Upper Mississippi River and Illinois Waterway System projects in the FY20 Work Plan. A new start will allow the momentum of this work to continue; it is our understanding that, with a new start, the Corps would be ready for a construction award worth several million dollars for a project under NESP.

Authorized in 2007, NESP is a critically important multi-purpose program that allows the Corps to address both navigation and ecosystem restoration in an integrated approach that construct new locks at seven existing sites, thereby opening the river up to two-way traffic. Additionally, NESP provides a comprehensive ecosystem restoration for the Upper Mississippi and Illinois Rivers. Our nation's water infrastructure plays a critical role in maintaining our competitiveness in the global economy by ensuring the safest, least expensive, most environmentally-friendly, and most efficient movement of goods to market, but the current backlog of outstanding water infrastructure projects pending before the Corps is putting that competitiveness at risk. As this infrastructure continues to age (currently well past its intended lifetime) the risk of catastrophic failure grows. It is imperative that we address this issue before – not after – such a failure occurs.

NESP maintains broad, bipartisan support in Congress, and, in recent fiscal years, both the House and Senate Energy and Water Appropriations bills and reports have included continued funding for PED and called for the Corps to advance projects authorized in Title VIII of the Water Resources Development Act of 2007 (PL 110-114).

We urge the Corps to move forward with a new construction start for NESP in the FY21 Work Plan. Thank you for your time and consideration of this important request.

Senator CARPER. Mr. McCoy, great to hear from you this morning. Thank you very much for joining us, and for your testimony, as well.

I want to start off the questioning with a question for each of our panelists. What I would like to ask each of you to do, and we will start with Mr. Cordero, but just share with us maybe the three top issues, maybe the biggest issues that you believe we should be tackling with the next Water Resources Development Act, maybe the top three, just briefly.

Mr. Cordero, would you lead us off, please, with that?

Mr. CORDERO. Yes. Thank you, Mr. Chairman. I think what you gathered here this morning is addressing the benefit to cost ratio. Obviously, it is too rigid, and we need to have the issue of including natural infrastructure as part of this dynamic. We need to have a way to capture and quantify natural infrastructure with regard to these assessments.

Going forward, again, I think you heard the very important issues of climate change. Sea level rise is a big issue for coastal communities and ports, so I think No. 1, that is essential.

I think, going forward again, if we move forward to address natural infrastructure, as an example, using sediment as a result, what we get from our dredging projects in a more environmentally friendly way for those purposes. So I think those are a couple key issues that I want to leave with this Committee.

Senator CARPER. Good. Thanks, thank you for those.

Mr. O'Mara.

Mr. O'MARA. Thank you. In addition to just more resources in general, I think there are some fundamental changes that are needed. I think we have heard from the entire panel around the benefit-cost analysis.

One specific change on that, making sure we count increases in ecological services as a benefit, but also the loss of ecological functions as a cost would make a lot of the numbers pencil in a way that is more reflective of the impact of the project, so that is one.

The second one is the idea of this resilience directorate that I mentioned, this idea of shifting the way that we design and execute projects across business lines.

Then third, really embedding environmental justice and wildlife into the actual bones of the DNA of the Army Corps. Those three would make a huge difference.

Senator CARPER. Good. Thank you.

Ms. Larson, please. Same question, three, maybe a couple of the biggest issues you think we ought to be tackling as we undertake this legislative challenge.

Ms. LARSON. The BCR is at the top of the list for a lot of non-Federal sponsors, and this is particularly true where non-Federal sponsors are seeking to modify their projects and include multiple benefits. You heard in the testimony last month from Rick Johnson from the Sacramento Area Flood Control Agency the challenge with modifying the flood control project to include recreation, protection, irrigation, agriculture benefits.

So, I think pulling apart and delving into how the BCR is derived is really important.

But I would suggest we need to get this right, because we do still need a planning process that is consistent, is predictable, it is replicable. It should provide the planners, Federal investments, and non-Federal sponsors some consistency.

What we don't want is, let's throw every possible benefit into the pot and come up with a subjective mix, because that will lead to a waste of Federal and local resources.

So a consistent, practicable planning framework, I think, is really important. Part of that is how to quantify all of these multiple benefits, so that, I think, is really important.

Similarly, considering regional benefits, how do we quantify those and ensure that there is still a Federal interest and Federal incentive to invest in these projects, and what does that mean? Secondary and tertiary benefits, as well.

I would also say that there are a lot of ideas out here. One of the false narratives, in my view, that typically comes up, and we have seen this through WRDA 2014 up until now, is this battle between gray and green. It is not a conflict. It can be an all of the above solution.

So I think anything that goes forward is an all of the above solution that doesn't add additional bureaucratic hurdles to non-Federal sponsors and Federal planners alike.

Senator CARPER. Good point, good point.

Mr. McCoy.

Mr. MCCOY. The most relevant issue I see is continuing the progress this Committee has achieved recently by securing funding for the inland waterways priority projects. Currently, over 50 percent of your locks and dams are older than their estimated economic useful life, as determined by the Corps.

The inland river system is just that, it is a system. It is not made up of individual autonomous segments.

So the system is as strong as its weakest link. With structures, over half of your structures being older than their life, I think that is a priority because inland rivers infrastructure has economic features; it has environmental benefits; it also has flood control benefits as well. Thank you.

Senator CARPER. Thank you. You finished, like, right on the money. That never happens. That is pretty impressive. We have 7 minutes set aside for questions for the panel, and you finished on a triple zero. That is amazing.

We have been joined here this morning by Senator Inhofe from Oklahoma, former Chairman of this Committee, and by Senator Cramer. We welcome you both. The questioning order right now looks like Senators Capito, Whitehouse, Inhofe, and Cramer.

Senator Capito.

Senator CAPITO. Thank you, Mr. Chairman, and thank you all for the increased emphasis on improving the cost-benefit analysis process as we are moving through with the Corps.

I think that is something that we hear from everybody, from different sides, but from everybody. So I think that is something that we need to prioritize.

Ms. Larson, you mentioned a lot about small and rural communities with the flood risk management projects and how difficult it is to get those funded and off the ground. How can we improve that

process? Is it capacity to develop these projects? Besides the money issue, can you make some suggestions there?

Ms. LARSON. One of the challenges, well, there are multiple challenges with these small and rural communities. One of these challenges in these small towns is, you may have a director of public works, a one person shop who is responsible for potholes to levees.

So in the prioritization, at the community level, these small flood control projects maybe aren't at the top of the list. So, encouraging and educating on CAP and the other authorities that are out there at least gets them in the door. Submit the letter of interest to the Corps so that when the local Corps district gets their funding through the appropriations process, they have a cue. They know who is eligible to do that.

The other part of this is, as we talk about BCR, and looking at the life safety example, if it is based only on NED, there aren't property values to allow that project to compete appropriately. So we need to look at, what is the life safety here, and what is being protected.

We see all too often that these projects with the higher NED benefits are the ones that get the funding, or get a new start, and so that has to be changed. So we need to look at life safety.

Senator CAPITO. I appreciate that, and I appreciate that you mentioned that in your opening statement.

Mr. McCoy, we championed the provision WRDA 2020 that you mentioned in your statement that changed the construction cost share for navigation projects on the waterways. What effect do you think this will have, changing that cost share? Are you seeing any of the effects of that? I know these things go into a process.

But what kind of effect would you see on that, changing the cost share?

Mr. MCCOY. Changing the cost share had an enormous effect on expediting construction costs on the priority projects of the Corps of Engineers. There is no question. It saved the Nation a lot of money in construction costs, and it has allowed the Nation to also recognize the benefits sooner.

Senator CAPITO. And you are seeing that on the waterways that you are using, the Upper Ohio, all the way down to New Orleans? You go all the way down there, don't you?

Mr. MCCOY. Yes, ma'am.

Senator CAPITO. Let me ask you this. I know that in the Upper Ohio, a lot of the locks and dams in that area are very old. You mentioned this in your last answer to the last question.

Could you kind of quantify that for people? What is a very old lock and dam, and when was the last time major maintenance was done on those?

Mr. MCCOY. Well, major maintenance is having to be done on an annual basis, and it is costing this country a lot of money because of the age and condition of the infrastructure, particularly Montgomery, Dashields, and Innsworth Locks. They are well over their design life, and they are in bad shape.

So they are certainly costing a lot of O&M dollars, whereas expediting the construction process would save a lot of money on that side.

Senator CAPITO. Does your business have delays and other things that are associated with the inadequacy of those locks to function, that holds up commerce?

Mr. MCCOY. Yes. There are unplanned outages occurring on the older infrastructure locks and dams that industry does not have an opportunity to respond to.

Unfortunately, unlike the highway system, there are no detours on a river. So when you have an unplanned outage or a lock outage, traffic sits still for days, perhaps even weeks, and it is costing the country billions of dollars and ultimately, the consumers. It is also making us non-competitive on the global market.

Senator CAPITO. I know you do a lot of other work besides just transportation. Mr. O'Mara talked a lot about natural infrastructure and how important that is, and then Ms. Larson talked about green and gray, and all of that. As you are conducting your other business applications at Amherst Madison, what kind of considerations do you all take for natural infrastructure? Is that something you think about?

Mr. MCCOY. A large part of what we do is, as a contractor for the Corps of Engineers, we dredge. We dredge out the river to provide adequate river depths to allow commerce to continue to flow. Beneficial use of that dredged material is what we have got to do a better job as a country of finding. So, yes, we do have to dispose of that oftentimes in incredibly expensive manners by taking it to landfills. Sometimes, we have got to get creative and use it to build environmentally sensitive or environmental structures for fish habitat structure.

Senator CAPITO. Thank you.

Senator CARPER. Thanks for those questions, and for those answers.

Senator Whitehouse, who is faithful in attending the affairs of this Committee, hearings and business meetings, and brings a lot of passion to this Committee.

Senator Whitehouse.

Senator WHITEHOUSE. Thank you very much, Chairman. Thank you for this hearing.

Any time the Army Corps is the subject of our attention, I like to point out the studious way in which it seems the Army Corps ignores the priorities and wishes of this Committee.

I don't think that just making noise from the Committee is going to make any appreciable difference in that behavior.

So I think as we go forward to do WRDA, we have got to think seriously about actually some protocol for directing the Army Corps' attention to the priorities of this Committee. One of my proposals has been to have a hearing for things that have been designated as Committee priorities where the Army Corps can come in and answer for the fact that they don't think it is their priority, so they are not going to do it, and they will explain to us why they are ignoring Committee priorities.

But I have been on this Committee a while. They have had plenty of chances to change and improve, and I have seen zero interest in doing that. I say that from a State where our local Army Corps District is terrific. They really try as hard as they can.

But up against headquarters, it is an uphill struggle. I frankly am sick of it, and I think we need to have some formal protocol of some kind to make sure that we are being listened to so the Army Corps doesn't believe that it was created by immaculate conception and all of its funding dropped on it by divine intervention, that they understand that this Committee has something to do and works pretty hard and needs to be listened to. So, that would be point one.

As we talk about a new playbook, as Mr. O'Mara suggests, I think the new playbook should be some form of protocol to make sure that this Committee's priorities are attended to by the Army Corps, or they come and make a solid explanation of why they are not paying attention to us, why they think our priorities are wrong priorities, which is fine. We can have that debate.

The second is my customary concern with the so called Flood and Coastal Storm Damage Fund. I repeat, Flood and Coastal Storm Damage Fund, which, for fiscal year 2022, is proposed by the Army Corps to spend $1.7 billion.

Of that $1.7 billion, $1.67 billion is proposed to be spent inland. That leaves $37 million, not billion, million dollars to be spent on coastal things.

We have talked about what is happening to our coasts; we have talked about sea level rise. We have talked about worsening storms; we have talked about the ancient infrastructure. Mr. Cordero brings the view of the ports, which are kind of, by definition, often on the coasts, and Mr. O'Mara talked about a number of issues that are highly specific to coasts. Forty-five to one is the current ratio; $45 inland for every $1 on coasts.

It has been worse, believe it or not. In fiscal year 2017 it was $120 to inland for every $1 on coasts. I know we have some inland States here, and I don't want to take anything away from the inland States, but I don't think 45 to 1 is fair. I don't think it is reasonable. I don't think it is consistent with the risk profile that we face.

And as Ms. Larson and other witnesses talk about the concerns of small communities, a hell of a lot of these small communities are small coastal communities who need a lot of support to understand what is coming at them, because they have never seen this before.

As Mr. O'Mara said, this is probably the worst year of the last 10 or 20 years for a lot of these climate consequences, but it is also probably the best year of the next 10 or 20 years for these climate consequences.

It is these little, coastal communities that are not only suffering from all of the disabilities that Ms. Larson described, but they are also suffering from the disability of being on the losing end of a 45 to 1 discrepancy that has no justification whatsoever.

I will confess that my patience is at an end, as a Senator from the Ocean State, with continuing to put up with passing WRDA bills that countenance my State, the Chairman's State, Senator Wicker's State, and other coastal States losing out by 45 to 1. That just isn't going to work for me any longer. So we have to find a way through that as well.

I appreciate the bipartisanship of the WRDA bills in the past. We have always tried to work together well.

But there comes a times when you got to draw a line, and it is really preposterous to have a budget for flood and coastal storm damage out of which $1.67 billion of the $1.7 billion is going purely to inland, and only $37 million is left for coasts.

Thank you for the hearing. I hope somebody at the Army Corps might even be listening to this, and certainly I hope that my Committee members are listening to this so that we can find a way to pull together and solve these recurring problems.

Senator CARPER. Your message is loud and clear and received. Thank you.

OK, next up, Senator Inhofe. After Senator Inhofe, Senator Cramer.

Senator INHOFE. Well, thank you.

Thank you, and I say to my friend, Senator Whitehouse, that it is loud and clear, and we have heard this.

First of all, let me thank you for the respect that you paid to our fallen brother, Mike Enzi last night by staying there and observing the tribute to him.

Senator WHITEHOUSE. You gave a great tribute, Chairman. I was pleased to be there.

Senator INHOFE. Thank you very much.

Now, we are, obviously, we are inland, and we are concerned, and I think that I have been complimentary in the past, and the equal treatment, I have felt, has been given.

But in the WRDA 2020, I was Chairman of the Committee at that time, and I was able to include the authorization for the West Tulsa levee system. We had a devastating flood at that time. I think everyone in the country was aware of that.

It is an old levee. You talk about something, one of the witnesses talking about something that was 50 years old, that levee is 80 years old and is far beyond its useful life, and I think finally we are going to be getting some action.

Ms. Larson, in your testimony, you note that consideration for life and safety should be paramount when evaluating the benefits of flood risk projects. Ms. Larson, how can the Corps take a more expansive view on the benefits of flood risk projects, such as what they did in the Tulsa Levee? I really think we could be used as a model for the successes that we had at that time. Any comments about that?

Ms. LARSON. The chief's report was successful there because they got an exemption to the standard requirement to pick the NED project, and that was based on life safety risks, comparing the life safety risks versus the NED.

I would suggest that that should not require an exemption. That should be one of those selections that is available so that you don't have to go through what sometimes is a cumbersome process to get that exemption.

A challenge going forward I see is that OMB is loath to fund or give new start status to those projects that aren't at the NED level. So I think a lot of advocacy continues to be needed to move forward.

Hopefully, that will serve as a model going forward, that intercommunity that is protected there that could be better protected because of the degraded levees, that you need to look at the life

safety, what is being protected, the people, the industry, utilities that are behind that levee and take a look at that. Use that life safety metrics.

I would say, this will require a complex and deliberative approach. The underlying planning documents, that I use to tell NWC members, I read so they didn't have to, are close to 1,000 pages. They are a bit mind numbing, and they look at how do you measure navigation projects through the transportation cost savings, how do you look at urban flooding projects, what is the protection to, say, land use.

So, this will require a long term effort to review those underlying planning documents, make sure that life safety is not an exception, but is part of the rule.

Senator INHOFE. OK. I am sorry, I am running out of time here, and I would suggest to you that you give those 10,000 pages to Senator Cramer, and he will explain them all to us.

[Laughter.]

Senator CRAMER. I can't wait.

Senator INHOFE. Real quickly, I do want to get one comment in to Mr. McCoy. The American Society of Civil Engineers has given the inland waterway system an overall grade of D-plus. That kind of is a little bit revealing, and somewhat inconsistent with some of the things we have heard.

It is clear that we need to address the aging infrastructure and critical maintenance of our Nation's inland waterways.

On the MKARNS alone, we have $230 million in backlogged maintenance, and I have led a delegation letters to the Corps, and they have submitted congressionally directed spending requests to chip away at that backlog.

Mr. McCoy, they put as the benefit of investing in and maintaining our inland waterway infrastructure, you know, we are all concerned about it. We live with it on a daily basis, and it happens that a frailty in that system can cost lives. It is a very serious thing. What is your thought about where we are right now?

Mr. MCCOY. The benefits, sir, in investing in the infrastructure is twofold. You create a resilient system that is more reliable. It creates jobs. It does so, and promotes an industry that is environmentally responsible. It does so in a manner to reduce future O&M responsibilities. With new structures or newer structures or rebuilt structures, your operation and maintenance costs are going to be reduced.

I have had the pleasure of visiting Murray Lock and Dam on the MKARNS, and I have seen those gentlemen from the Corps of Engineers do more with less than most other districts in the country.

Senator INHOFE. I agree with that. That is excellent. We will stay hooked up with you.

You know, I can't even tell you right now what percentage of that waterway that goes through Arkansas and Oklahoma is actually a 12 foot channel as opposed to a 9 foot channel because we have been at this thing for so long. But we will continue to work together, as we have in the past, with successes.

Thank you very much.

Senator CAPITO [presiding]. Thank you.

Senator Carper, Chairman Carper had to slip out for a minute, so he has handed me the gavel, and I am going to go to Senator Duckworth, who has joined us on Webex.

Senator DUCKWORTH. Thank you, Chairwoman. I am very much appreciative of the hearing that we are holding today. We advanced—and I am just so proud of the work that the Committee has done this year. We advanced, and the full Senate passed overwhelmingly our bipartisan Drinking Water and Wastewater Infrastructure Act.

Along with AWIA, our bipartisan Surface Transportation Reauthorization Act is the foundational element in the broader, bipartisan infrastructure framework effort, and we are embarking today on another reauthorization of water resources legislation. This Committee recognizes the tremendous societal benefits that modern, efficient transportation systems support.

Unfortunately, our inland waterway system continues to lag behind what the 21st century global marketplace demands, and many of our riverine ecosystems continue to degrade faster than they can be restored.

Mr. McCoy, one of my top priorities in the last WRDA bill was improving the Federal cost share for inland waterways projects from 50-50 to 65-35. Please describe some of the benefits this cost share change will have on navigation, interstate commerce, and global competitiveness.

Mr. MCCOY. Thank you very much for your question, and thank you very much for supporting the cost share improvement to 65-35.

It has created jobs on the construction, on the front end of these priority projects that have been congressionally authorized and throughout construction.

Then at the completion of construction, it has created a more efficient system that has allowed each of the States or the companies that locate and ship products by river, to do so in a competitive manner, not only for United States consumption, but for the world market.

Senator DUCKWORTH. Thank you.

Now, Mr. McCoy, WRDA 2020 included a provision that limits the improved inland waterways cost share to 10 years. What, in your view, would consequences be with this 10 year sunset on future projects?

Mr. MCCOY. Should the system revert back to the 50-50 cost share, you are going to see a slowing of the new construction or the authorized spending on the 15 priority projects, and revert back to a system that is inefficient, and that Federal dollars will, for the construction, will increase as time it takes to build the projects. It is an inefficient, it has proven to be inefficient, and the new cost share has proven to be much more efficient in delivering infrastructure that is more reliable to the country.

Senator DUCKWORTH. Thank you.

Mr. O'Mara, the Upper Mississippi River System, which includes the Illinois River, is the only river system designated by Congress as both a nationally significant commercial navigation system and also a nationally significant ecosystem.

This Upper Mississippi-Illinois waterway transports more than 60 percent of America's corn and soybean exports. It is home to 25 percent of North American fish species and is a flyway for 60 percent of all North American bird species.

I often talk about the Corps' Navigation and Ecosystem Sustainability Program, otherwise known as NESP, in terms of lock and dam capacity and infrastructure reliability.

But really, NESP ecosystem restoration components would also provide tremendous economic benefits by improving quality of life for local communities and reinforcing the waterways' $25 billion tourism and recreational industry that supports more than 400,000 jobs.

Mr. O'Mara, how do ecosystem restoration projects translate into economic benefits for local communities, and how does degradation of riverine ecosystems further marginalize disadvantaged communities?

Mr. O'MARA. Thank you, Senator, for your question, and thank you for your incredible leadership of the Mississippi River Restoration Resilience Initiative which should hopefully do a lot of the work that you just highlighted.

The economic benefits are huge, and I can talk until I am blue in the face about the flyways and duck hunting and all kinds of things in your neck of the woods.

But at the end of the day, restoration means jobs, and every $1 million we spend on restoration can create up to 30 jobs. There are huge benefits to the outdoor recreation economy. There are huge benefits for having clean water that requires less treatment downstream.

The flood protection values that come from having healthy wetlands that can absorb 300,000 to a million gallons of water, rather than having that flood water wind up in somebody's basement or worse are huge.

So restoring the healthy systems, and I think there is, frankly, no better place to pilot some of the large landscape scale investments that we need to do at scale in the middle part of the country than in the Upper Mississippi right now.

Senator DUCKWORTH. Thank you, Mr. O'Mara.

I yield back, Chairman.

Senator CAPITO. Thank you.

Senator Cramer.

Senator CRAMER. Thank you, Chair Capito. Thanks also to Chair Carper.

It is interesting. Here we are, it is sort of unofficial infrastructure week in the Senate, I think. Who knows for sure. But I think we are approaching a vote later today, on at least proceeding to the measure on the bipartisan negotiated transportation infrastructure package.

I just came from a meeting of some of the negotiators. And I want you to know, Senator Capito and Senator Carper, and the team here, the staff, that I asked a very direct, specific question: Does the unanimously passed EPW Surface Transportation bill still serve as the foundation, every word of it, every word of it, and they assured me that it still is.

So, I hope that is what you are hearing as well, but so here we come. Here we go, and we are off to the next big infrastructure discussion with you all here as we talk about WRDA.

We have had a lot of discussion, obviously, appropriately, in the Committee and today already related to the calculation of the benefit-cost ratio that the Corps uses.

I am sure every member, as you can tell by the way they—as Senator Whitehouse's testimony or questioning attests, nothing unites Republicans and Democrats like the Corps of Engineers. We have to give them a lot of credit for that.

But anyway, the end result, frankly, of their process is often that local communities look at the Corps as being out of touch, tone deaf, lacking common sense; I don't know why we pick on the Corps. It has been my observation that most of bureaucracy comes off that way.

But it is really important that local needs, and for my case, especially rural needs, are not disregarded. A lot of you have testified very well to that.

But with that in mind, I want to describe a situation in some detail that we face in North Dakota and get some input, if there is time.

The Snake Creek Embankment was constructed by the Corps of Engineers at the edge of Lake Sakakawea. Lake Sakakawea is a part of the Missouri River System and created by the Garrison Dam. The embankment creates a separate pool of water that is known as Lake Audubon, and that can be kept at a higher level so that the Bureau of Reclamation can manage that water for its intended uses, such as irrigation, municipal water supplies, rural water, and the Lake Audubon Wildlife Refuge. Again, very good multiple use asset, there.

But anyway, a few years ago, the Corps realized that they were experiencing some foundation problems with the embankment. The relief wells that they put in place were not properly maintained over the years.

Rather than getting to the root of the problem, and despite local objections, which were loud, the Corps decided to implement a water control plant that would limit how much higher the water level in Audubon could be, of course, than Sakakawea.

So, in a severe drought like we are going through this year, it can starve our largest city's water supply. It certainly hurts the shores of the wildlife refuge and misses every priority.

So, when this was brought to my attention, the Corps simply said they couldn't account for water supply, irrigation, or the needs of other Federal agencies in determining the importance of the project, even though the end users were the main reason the embankment was built in the first place. So, back to my previous comments, when North Dakotans hear this from the Corps, they see a total lack of common sense.

Now, thankfully, General Spellmon and his team have been working with me on this. They have been very attentive, but progress is slow, and it has been my experience that they will find every reason possible not to do something before they ever get to doing it.

So I am not going to ask you to comment on the specifics of this project, but as we start working on another WRDA bill, what is the best way for the Corps to include issues like water supply and irrigation as it prioritizes project decisions?

Mr. O'Mara, I would be interested to start with you, because I think you probably understand our situation.

Mr. O'MARA. Thank you, Senator Cramer. I know the wildlife refuge very, very well up there, and it is great hunting. It is good hunting, usually.

I think this is just another example of why we need a broader benefit-cost analysis.

I would like to see the impacts on the ecosystem actually accounted for in a major way. The loss of the hunting and fishing revenue that comes from that part of the State, that is not going to be there if it is dry. I think your outdoor economy is about $40 billion, $50 billion across the State or across maybe both Dakotas.

So we would like to work with you on this, because I think it is replicated all across the country.

Frankly, if you had a bunch of McMansions that were worth $3 million apiece lining the shore you would qualify better than this amazing habitat that is one of the most important in the country.

Senator CRAMER. Anybody else, quickly?

Ms. Larson.

Ms. LARSON. Congratulations, you stepped on the third rail of water supply. One of the things, in particular, with water supply, not one of the primary mission areas, these authorized projects have multiple, often competing uses, and so there is this trade off analysis.

While the Congress seeks to address it, I would also suggest there are so many regional priorities. Water in the Upper Missouri Basin States has different priorities than say, the Southeast, than the reservoirs in Oklahoma and Texas, and then Western water issues have their own character, as well. So, we know that this is really complex from an ill fated Corps rule that was withdrawn a few years ago.

So this particular issue really needs to strike the balance between consistency on these rules and flexibility to address local conditions. I don't have the answer for you, but I do sympathize with this plight, because it is particularly challenging when you have these control manuals with competing issues.

Senator CRAMER. Thank you all. Well said.

Senator CAPITO. Senator Padilla.

Senator PADILLA. Thank you, Madam Chair.

I am excited to be part of this kickoff of the WRDA process, and I want to welcome, I don't know if he has joined us virtually, but Mr. Cordero to this Committee hearing.

While Mr. Cordero is testifying in his capacity as Chairman of the American Association of Port Authorities, he and I go way back, having first met when I was a member of the Los Angeles City Council.

So I know from my State and local experience with him how critical the Port of Long Beach, in particular, where he serves, is for the economy and for job creation, both locally and regionally, as well as nationally.

I am familiar, because of him, with the kinds of proactive investments that ports, both Long Beach and Los Angeles, and others up and down the State of California are making to prepare for the impacts of climate change, which in many ways are already being felt. We are not planning for the future; we are responding to what is happening today.

So we no longer have a choice whether or not to deal with the impacts of climate change.

The Port of Long Beach is one that is helping to lead the way. The Port of Long Beach was the first seaport in North America to develop a coastal resiliency plan to address sea level rise and extreme storm events and to mitigate impacts to port operations, as well as local communities. In fact, their 2016 Climate Adaptation and Coastal Resiliency Plan predicted that extreme heat events and resulting outages could stress the regional electrical grid that port operations rely upon. Just a few weeks ago, California faced historical triple digit temperatures.

Mr. Cordero, can you spend a minute telling us how members of the American Association of Port Authorities are preparing for and adapting to the increasing frequency of extreme weather events, including having learned from your experience in Long Beach?

Mr. CORDERO. Yes, Senator, and thank you for your question. It is a very key and important question.

No. 1, I think as you have referenced, the whole discussion now with regard to the impacts on climate change has elevated to a very high level, whether we are talking about inland or coastal communities.

But to be more specific, I think as it relates to ports, the AAPA's concern is with regard to the impact on ports.

With regard to the whole question of weather conditions, extreme weather conditions, sea level rise, and another issue that ports very much are concerned about is, of course, stormwater related projects and the funding necessary to address that.

Let me be more specific with regard to sea level. As you know, in the State of California, coastal communities here are of great concern. So, for example, the State right now opines through a report that was released in the last few years regarding by 2030, sea level rise is estimated to be to about a foot or half a foot.

The real concern here is at the end of the century. Some years ago, we were talking about 5 or 6 feet. Now, it is 7, and many people believe it is a 10 foot rise, so what does that mean for coastal communities?

For California to address the mitigating impact on housing, we are talking about building or the recommendation of 100,000 housing units annually to address this issue.

So I think that addresses again some of the severe impacts not only with regard to coastal communities, but of course, the major ports across the country in terms of what that impact is as a result of the severe weather conditions, climate change, and related topics.

Senator PADILLA. Great. And just one follow up question, and I know in research, in planning, not only for mitigation, but a lot of that is driven by research, data which has come under fire in recent years, sadly.

But with the new Administration and new leadership, how else can the Army Corps and this Congress, for that matter, play a role in supporting your climate adaptation and coastal resiliency planning efforts?

Mr. CORDERO. A big role that they could play with regard to what has been testified to this morning is, again, addressing this whole issue of benefit to costs ratio to include what the local and regional circumstance should be taking into account with regard to this formula, as opposed to just a national perspective here.

Second, as has been referenced, the American Society of Engineers recently has now included natural infrastructure as an important component to look to. More specifically, when you look about the grades that are being given with regard to stormwater, for example, concerns, that grade is a D.

So I think, again, these are avenues where I think the Army Corps could be, and I will say that for the Port of Long Beach, we have a very good rapport with the L.A. District and the South Pacific Division. I recognize that many other ports may not be able to say the same.

But in that regard, I think we need to address an important component of how we further the environmental benefits of, for example, as I testified, even when we do the question of sediments, you know, result of our dredging projects, what do you do with that sediment? That is a natural infrastructure resource that we could use in a more beneficial way for environmental purposes.

Senator PADILLA. Thank you for your responses.

I know my time is up. I appreciate the acknowledgements of the increased use of natural infrastructure and increased beneficial use of dredged material and other things.

On the natural infrastructure, I know back home-home, in the San Fernando Valley with some of the tributaries into the Los Angeles River, there is some tremendous potential for some visionary, forward thinking projects there.

Last, but not least, I heard somebody take a knock at engineers earlier in this hearing. Engineers and scientists have to sit together. Where would we be without engineers and scientists?

Right, Mr. Kelly?

Thank you, Madam Chair.

Senator CAPITO. Thank you.

Senator Kelly.

Senator KELLY. Thank you, Madam Chair.

Mr. O'Mara, good morning. I want to see if you can expand upon your recommendations for how the Corps should better account for the importance of investing in rural and disadvantaged communities.

One important project in Arizona is the Little Colorado River at Winslow Levee Project, which was authorized by Congress last year. The entire town of Winslow lies within a flood plain, and current flood control measures do not protect the town from floods.

The town has a poverty rate of 23 percent, and more than a third of the residents are Navajo and Hopi. On paper, this is a competitive project which will provide significant benefits to the community, yet the project hasn't been fully funded because of the Corps'

policy of making funding decisions based on a project's benefit to cost ratio, or BCR.

Mr. O'Mara, what do you believe are the best ways we can ensure that communities like Winslow can secure funding for projects such as this?

Mr. O'MARA. Thank you, Senator Kelly. It is good to see you again.

I think there are two pieces. There is the broader benefit-cost ratio analysis that should include more of some of the natural elements, some of the economic impacts, beyond just the very top line numbers.

But to piggyback on something Ms. Larson said, I do think that we have to have an equity variable that looks at the values of the properties that are impacted in a different way.

In the Delaware example, we can do a beach nourishment project in Rehoboth Beach much easier because there are multimillion dollar mansions there, as opposed to up the bay, where you have lower income communities. It is the same thing.

So I think we would like to work with you and the Ranking Member and the Chairman on getting these equity pieces right, because I think we are going to have these injustices where it doesn't score quite right because the underlying economics are a little different, but they are equally important to, and frankly, more important, in some cases, for loss of life.

Senator KELLY. Yes. Well, thank you, and my office will reach out to work with you on that.

Mr. O'Mara, also for you, I want to discuss the importance of the Army Corps collaborating with the Fish and Wildlife Service. While the Corps has done good work in recent years to combat the spread of invasive aquatic species, one growing challenge that we face in Arizona is the spread of invasive plant species, and in particular, the salt cedar, which outcompetes native desert plants for scarce water resources.

It grows very quickly, it changes flood plains, creates flooding risks, and it burns hotter and faster than native plants, creating a significant wildfire risk.

So, these plants are invasive, and they are in the Salt and Gila Rivers in the Phoenix Metropolitan area. The removal of these plants is a growing priority for the Rio Reimagined Initiative, which was started by Senator John McCain, who previously held this Senate seat.

The last WRDA reauthorization took some important first steps to provide the Corps with resources to combat invasive plants species. But as we look forward, what more should be done to ensure that the Corps has the resources to combat not just aquatic invasive species, but invasive plant species as well?

Mr. O'MARA. Thank you for the question. I think the salt cedar as an example is particularly egregious, just given the water consumption that it does. I think, across the broader Rio Grande, you are probably looking at 25 billion to 40 billion gallons of water being sucked up by these trees. I mean, just imagine what that would do to flows across the entire region.

Senator KELLY. Let me say, I did not appreciate the problem until I flew over the area in a helicopter and looked at the Rio Re-

imagined and looked at how many plants there actually are. It is pretty incredible.

Mr. O'MARA. [Remarks off microphone.]

Senator CARPER [presiding]. Microphone, microphone?

Senator KELLY. Thank you, and Mr. Chairman, I yield back.

Senator CARPER. Senator Kelly, thanks for joining us very much.

Senator Boozman, and then Senator Cardin.

Senator BOOZMAN. Thank you, Mr. Chairman, and again, thank you for holding this important hearing here, and Ranking Member Capito.

Mr. McCoy, our Nation's inland waterways are considered water highways. The American Society of Civil Engineers reports a $6.8 billion backlog in construction projects and ongoing lot closures that harm industries such as agriculture that rely on the inland waterway system to get their goods to market.

Also, we have other areas that are developing, and you need the on and off ramps to get onto the inland waterways, which again, construction is so important. So, delays within the system cost an estimated $44 million per year to the agriculture sector alone.

What are the barriers to addressing that backlog and its associated impacts?

Mr. MCCOY. The barriers, I see, the benefit of investing in the infrastructure of the waterways plays so many benefits in the economy, in the environment.

So I don't see barriers other than bureaucracy. If there are any, that could be the only barrier. The inland waterway system ticks nearly every box, from the economy to jobs to the environment.

Senator BOOZMAN. Very good.

Ms. Larson, when looking into infrastructure investment, we must consider the lives of all Americans in every State. While extreme climate events in California are certainly different than extreme climate events in Arkansas, we all have a common goal in our investment decisions, and that is to incentivize projects that are effective and long lasting.

A common complaint I hear from Arkansans is how they are frustrated with the slow permitting and review processes and how it ultimately is affecting projects that would improve people's lives and their communities. Will you elaborate on the importance of speeding up the Federal permitting and reviewing processes so we can finish infrastructure projects in a reasonable time frame?

Ms. LARSON. Certainly. Thanks for the question, Senator. Recall back in WRDA 2014, what that bill did was codify the Corps' Three by Three by Three Program, which is a study of 3 years, $3 million, and three levels of review.

As part of that process, what builds in there is the environmental review.

The Corps implemented a 2 year environmental review process, and part of that was then included in what was known as One Federal Decision, which requires all of the agencies to come to the table at the beginning; don't wait until the end of the day and raise an objection, because then that causes additional delays.

So, if we look at places where that model was used, it means that the study process is completed efficiently and that all of the agencies are at the table first.

So I think that is a really good model. I recall it was the Norfolk Coastal Study which did that, so it was the Corps, it was Fish and Wildlife. Virginia has its own historical board. Everybody got to the table at the beginning of the process to look at the project, to look at the permit, raise objections up front so that you can resolve those, and then issue the permit or the planning documents in a timely fashion.

So, something like that to compel agencies to get together up front and stakeholders, voice your concerns, that will go a long way.

Senator BOOZMAN. Going along with that, I think that Federal policies should not give preference to any one solution over others when addressing water resources issues. I know that the stakeholders in Arkansas would prefer the Corps to use solutions that work best for a particular project and have the support of the non-Federal sponsor who is required to financially support the project.

Do you believe traditional infrastructure should only be used if the non-Federal sponsor can demonstrate that natural infrastructure is not viable for a particular project, or should the non-Federal sponsor have more of a say in what works best for their particular project?

Ms. LARSON. The planning process is structured, and if it works as intended, it is to include all viable options, and viable means, what does the non-Federal sponsor want to commit financial resources to? And so, if this process works efficiently, include all of those option, including the locally preferred option.

Earlier today, we spoke a bit about, particularly, flood control projects, the life safety component. So ensure all of those things are at the table.

So as we are looking to, on the one hand, streamline the processes, the permitting and the planning process, I think we need to be careful, we collectively, not to impose additional regulatory or bureaucratic burdens on this process. That just slows it down. And take into consideration what the local communities want.

Senator BOOZMAN. Very good.

Thank you, Mr. Chairman.

Senator CARPER. You are welcome, and thank you.

Senator Cardin.

Senator CARDIN. Thank you, Mr. Chairman. I thank you and the Ranking Member for this hearing and our witnesses.

As we start to take a look at the next round of WRDA authorizations, I know we are not quite finished with our WRDA bill yet for this year, but I think it is important that we take a look at these issues.

It seems to me the benefit to cost ratio needs to be an issue that we really drill down on and take a look at how it impacts. I can tell you, in my State of Maryland, projects in smaller harbors are very much impacted.

I know, Senator Capito, you raised the issue about the rural parts of our States. These dredge projects are so important to local communities, and they get a hard time getting noticed by the Army Corps because of the cost-benefit ratio issues.

We had the environmental restoration projects. We have, I think, the showcase one on Poplar Island in the Chesapeake Bay, which

restored 1,000 acres that had disappeared as a result of sea level rises and erosion, which has an incredible beneficial impact for the environment. We have environmental justice issues, and then we have the beneficial use of dredged material.

We have a very successful program at Blackwater, where they were surprised how quickly we were able to restore some wetlands. But there is cost associated with it. We don't get the benefit. So the cost-benefit ratio is something we really need to deal with.

I know this has been brought up before, but let me start with Mr. O'Mara, if I might. We have our second project coming along, which is Mid Bay, which we are expecting to be able to get some funds in this cycle for construction.

As we look at ways to look at the benefits to our environment or social justice issues or smaller communities justice, what recommendations do you have on how we can modify the cost to benefit ratio analysis?

Mr. O'MARA. Senator Cardin, it is good to see you. I appreciate the question.

I was actually at Blackwater the other day, and the marshes look fantastic.

I think for too long, we haven't accounted for those costs. When I was Secretary in Delaware, there was nothing more painful than having good, clean dredge fill go to Killcohook, the landfill in New Jersey, because it was going to cost slightly more to apply it in smart ways to our inland bays, a very similar situation for the Chesapeake.

I think showing, having good quantification of the storm resilience benefits, the habitat value for a range of species, the water quality benefits, the recreational tourism economy benefits, having all of those numbers basically in the benefit side of the equation.

On the flip side, if we didn't do the project, or if we did something harmful in that area, having those costs show up in a real way would level the playing field. I think it would be much more equitable in real ways.

And then also, as you have heard from many panelists, I think we do have to think of a different way to incorporate the value of life. It has been property safety. That is not simply just the value of the property itself, because right now, we are pushing investments in places where there are just higher income communities are compared to environmental justice issues that you mentioned.

Senator CARDIN. Thank you, and we have to really see how we do that from an authorizing point of view, because it is challenging to the Army Corps dealing with the budget people, and we really need to give some direction.

Ms. Larson, I want to ask if you have any advice as to how we can try to accelerate the small harbor projects that we have on the cost to benefit ratios. We have a huge backlog.

Now, one way is to just put more money into the program. I understand that, but there are not unlimited resources.

Is there a way that we can give a higher degree of priority to our smaller harbors and dredging without compromising the basic structure on how we make these decisions?

Ms. LARSON. I know through various WRDAs that disbursement of Harbor Maintenance Trust Fund funds allocates a percentage to

the small and emerging harbors, and I know that that is a priority for many folks in small, coastal areas.

The formula, I am not exactly sure of, and Mr. Cordero, sorry Mario, I am batting it to you, may be able to talk in particular, on those small harbors.

But I do think it is critically important when we are considering the BCR and those maintenance dollars, what other benefits accrue from using those small harbors, as well.

Senator CARDIN. Then last, on beneficial use itself.

As you pointed out, Mr. O'Mara, dredged material can have a positive impact. I know some careers have been started in politics by opposing dredge sites. Certainly in Maryland, we can give you some examples of that. Here, you have a product that can be used, put to beneficial use, make it a plus.

We really do need to have a statement made by Congress as a preference to use dredged material in a positive way rather than trying to find a site that nobody really wants to locate for the dredged material.

Mr. O'MARA. Yes, I think one of the things that we proposed in our recommendations is this idea of a resilience directorate that would allow the business lines across the Corps to work together.

Because in a lot of cases, we will have the dredging project of the navigation project kind of cost one amount, and then they will have a separate line for the ecological restoration of flood protection that costs a different amount.

Or if you put the two projects together, and you use the clean fill in appropriate places, ecologically sound, to actually do the rest of the restoration work, that actually provides flood abatement value, it would be much cheaper than trying to do them individually.

But we are kind of penny wise and pound foolish still on this front, even though this Committee has actually made great progress in the last 10 years on this issue. Before 10 years ago, it was a complete mess, and now it is better, but we need to push even faster.

Senator CARDIN. Thank you.

Thank you, Mr. Chairman.

Senator CARPER. Thank you very much.

I have a couple quick questions, and Senator Capito indicated that she doesn't have any more. I am not sure, I don't believe any other members are going to join us, so this should be mercifully brief.

Again, thank you all for joining us today.

For Mr. Cordero, the question on environmental justice.

Your biography mentions that in your previous capacity as Long Beach Harbor Commissioner, you led an effort to promote and expand outreach to the local community. I think it was called Green Port Policy Initiative. It worked with the local community to improve the Port of Long Beach's environmental stewardship, and it is a nationally recognized and globally influential program to outline sustainable ethics for all port operations.

My question would be this: Would you explain some of the features of this program and how it created a better outcome for the environment for the community and for the port, please? Go ahead.

Mr. CORDERO. Thank you, Senator, and absolutely, I think that was an important milestone here for Long Beach.

As you referenced, the Green Port Policy was formalized back in January 2005. The plan of action was to address some of the environmental concerns that confront urban ports like the Port of Long Beach, and we did. Primarily, the goal to reduce emissions from port operations, and as a result, part of it was community engagement. I think that was engaging with stakeholders, community associations, neighborhoods.

Suffice to say that after a number of years and in combination with what came later, the Clean Air Action Plan as a result of our partnership with the Port of Los Angeles, we were able to reduce particulate matter from truck operations by upwards of 88 percent, NO_X by 59 percent, SO_X by 97 percent.

In addition to some of the actions that we did, we moved forward in 2008 with a clean truck plan to replace a rather dilapidated truck drayage that we saw here in port gateways. Today, we have a new dynamic with regard to what these trucks, in terms of what they entail.

So, the substantial reduction in emissions that I have referenced, and our goal is to have by 2035 zero emission trucks, and by 2030, zero emission cargo handling equipment. And as Senator Padilla referenced, we also moved forward in 2016 with our Climate Adaption Coastal Resiliency Plan to address issues of climate related issues and coastal hazards.

Today, actually next month, we are going to inaugurate now, we are completing our grand endeavor of the last decade, the Long Beach Container Terminal, which would be the world's greenest terminal in terms of an electrified operation. As I referenced last, again, for 2017, we are moving forward with a zero emission plan of action.

All of this, we have been very successful, primarily because again, the outreach that we have and engagement with our community, and more particularly, the stakeholders here in the Greater Southern California Gateway.

So I think beginning with the Green Port Policy, it exemplified, at least from our perspective, we were way ahead in terms of environmental social responsibility that we have exhibited.

Going forward, again, I think we are very proud of our environmental stewardship leadership with regard to addressing not only air emissions, but of course issues like, as I referenced already, stormwater projects and water quality issues.

And of course, very many important issues in relation to, as I referenced, here in the State of California, being partners to address the sea level rise. I think it is concerning not only to this gateway, but all ports across the Nation.

Senator CARPER. That is a lot of encouraging news. Thank you for that, and for setting a good example for the rest of us.

Last question would be for Collin O'Mara. It deals with natural infrastructure ecosystem restoration.

You may not admit this, but you are regarded as an expert in natural resources management and conservation. As you know, ecosystem restoration is a primary mission of the Corps of Engineers, but the concept, many times, gets stuck in that silo.

These projects often include nature based design features combined with gray infrastructure to provide net gains, including degraded ecosystems.

But we ought to be doing similar efforts in other projects where the primary focus is flood control or navigation, much like Poplar Island and Mid Bay projects that we are hearing about in Maryland.

In your opinion, what needs to change at the Corps to break down these silos so that the multi-purpose projects become commonplace, the rule, not the exception?

Mr. O'MARA. Thank you, Senator, and Mr. Chairman. I think this Committee has made great progress on this issue over the last many years.

It just needs to be an equal playing field. I think Ms. Larson said it perfectly. There are places where the natural solutions make sense; there are places where the man made solution makes sense, and there are places where you want kind of the green and gray, sage, if you will, kind of solution.

We would love to see much more focus on the navigation and on the flood protection side.

But the idea that we put forth before, this idea of a resilience directorate that would look at solutions holistically across systems.

One of the things we have seen, and we saw this in Delaware after Hurricane Sandy, the places where we had healthy dunes, the places where we had healthy wetlands, fared better than places that only, in New Jersey, fared better compared to our friends in New Jersey that only had seawalls in some places.

So having a place where you can actually think holistically at a landscape scale about all the different tools and doing that early in the process in a way that is efficient in getting the permitting right.

But there has to be that place where folks can talk and break down those siloes. Because right now, unfortunately, you kind of get down a path, and then you end up with, you know, kind of a 1950s solution in a kind of 21st century kind of reality that we are living in.

I think breaking those silos down through this kind of resilience directorate, combined with the cost-benefit piece you have talked about is the key.

Senator CARPER. Thank you.

We have been joined by Senator Sullivan. I think he will be our last member asking questions.

Senator Sullivan, welcome.

Senator SULLIVAN. Thank you, Mr. Chairman.

Let me just ask the witnesses very quickly on a topic that has a lot of bipartisan support here. It actually has more bipartisan support in cities with mayors and States with Governors.

That is the opportunities that exist to streamline project delivery in terms of the ability to actually get projects done.

Unfortunately, our country, relative to other industrialized democracies on almost every measure, ranks last. We all know the kind of parade of horribles. Nine to 19 years to permit and build a highway in America; 9 years, I think, on average to permit a

bridge in America. It took 20 years to permit a gold mine in my State, the great State of Alaska.

The list is very long, and it doesn't help the country. I think the only thing it helps is trial lawyers and far left extremist environmental groups who don't want any projects built.

So, can I get a sense from all of you on how important that is? We don't want to cut corners.

But you know, a 2 year, maybe a 3 year period as a goal for permitting, not 9, is really important. What do the witnesses think about that?

Ms. LARSON. I will start with that. Thank you for the question, Senator, and congratulations to your State for your first gold medal in swimming.

Senator SULLIVAN. Oh, yes. Wasn't that great? She was amazing. Seventeen years old, from Seward, Alaska, and they don't even have an Olympic sized swimming pool, right? It is just—a real amazing young woman.

Ms. LARSON. It was amazing to watch. Really amazing.

So, we talked a lot about the planning program and the permitting process, and then the funding component of that. In terms of the planning and permitting process, back in WRDA 2014, the Committee codified the Corps' Three by Three by Three, which is the planning process to get it done in 3 years. Part of that is the environmental review process, and there were benchmarks, including one set by a Federal program called One Federal Decision.

Senator SULLIVAN. Do you agree with that, One Federal Decision?

Ms. LARSON. I do.

Senator SULLIVAN. So do I. Good idea. It shouldn't be controversial. President Biden got rid of that EPO.

Ms. LARSON. Well, I think, you know, whatever else was in the Executive Order, I don't know. I am a nerd who wrote a paper for the American Bar Association on One Federal Decision. But there were many examples that where the resource agencies, every agency and State entities got together at the beginning of the process, raised concerns, it was a much more productive and timely and efficient process. The Norfolk Coastal Study is a good example of that.

But I think that you can do that up front. Don't wait until the end of the day to raise concerns, so I think that is an important component.

Senator SULLIVAN. That is a great idea. Good.

Anyone else have a thought on that?

Mr. O'MARA. Thank you, Senator. You and I have both run natural resource agencies in our past, and I think having that kind of coordination on the front end is important. We also just have to recognize that the agencies have been hollowed out, in a lot of cases. I am really worried about the amount of investment we are talking about, just not having the bodies and the capacity to actually process things quickly.

Senator SULLIVAN. Yes, that is a good point.

Mr. O'MARA. So, how the sequestration over the last decade kind of lands in this infrastructure conversation should be there.

But I think a combination of coordination on the front end and then also I think there are additional, I think there are some kind of policy pieces we should talk about offline for how to make some of the pieces still comply with NEPA, like you said, not cutting corners, but being much more efficient in terms of the timelines.

Senator SULLIVAN. Good. Well, we want to work with you on that.

Let me ask another question. This is an issue that I think should concern this Committee, Mr. Chairman and Senator Capito. I have raised it with the OMB Director; I have raised it with the Assistant Secretary for Civil Works for the Army Corps.

But in the President's budget, it says that they will not fund work that directly, the Corps won't fund work that directly subsidizes fossil fuels, including work that lowers the cost of production, lowers the cost of consumption, or raises revenues retained by producers.

When I asked the Corps this, you know, so much of the work that the Corps does is ports, harbors, pipelines. Some estimates of this prohibition would be 40 to 50 percent of the Corps' overall work. That is a remarkable statement.

I don't think the Corps of Engineers agrees with it, but what do you guys think of that? You are talking about ports or pipelines, that is a lot of the work that the Corps does that delivers hydrocarbons, yes, we still need oil and gas. It is not bad.

If you are a worker in that industry, I applaud you. I know you are vilified right now by a lot of people in this Administration.

But these are Americans who have built this country, made it strong.

What do you think of this prohibition that would undercut probably 50 percent of the entire Corps of Engineers' budget? Any views, Mr. McCoy?

Senator CARPER. I am going to ask you to be fairly brief; we are well into a vote, and we don't want to miss is. Go ahead. Please, quick, just answer the question.

Senator SULLIVAN. Or you can submit your answer for the record.

Mr. MCCOY. Quickly, basing investment decisions upon types of cargo moved could put other types of cargo on the river system in jeopardy, at a disadvantage, because the river system is just that; it is a system. We move agricultural products, salt, aggregates, in addition to hydrocarbons.

Senator SULLIVAN. Maybe I can get a question for the record on that question I just posed from the witnesses, Mr. Chairman, just to be respectful of the time. Thank you.

Senator CARPER. Yes, no problem. Thank you.

Senator Capito, any closing thought?

Senator CAPITO. Yes. I just wanted to thank the panelists; in particular, Mr. McCoy, for coming from West Virginia.

Great last question from Senator Sullivan, as I see Mr. McCoy's barges go less than a quarter of a mile past my house carrying West Virginia coal.

And we should be able to have our waterway systems free and available for that type of economy, So thank you. Thank you.

Thanks, Robert.

Senator CARPER. Senator Capito, our thanks to you and your staff, to our staff, for all the work in putting together today's hearing.

I want to really thank our witnesses, Collin O'Mara, it is great to see you, Mr. Secretary.

Mario out there in Long Beach, and Amy Larson, and Robert McCoy, the real McCoy. We are delighted you could all join us for this time.

We have a lot of work to do, a lot of work to do, and this Committee works together. We are work horses, and I am looking forward to tackling it and working with the bipartisan staff to do more good work with respect to the Army Corps.

I have one final housekeeping item. I would like to ask unanimous consent to submit for the record a variety of materials that include letters from stakeholders and other materials that relate to today's nomination hearing.

Is there objection?

Hearing none.

[The referenced information follows:]

Dredging Contractors of America

Hon. Thomas Carper
410 Dirksen Senate Office Building
Washington, D.C. 20510

Dear Senator Carper:

Dredging Contractors of America (DCA) is a non-profit trade association representing the interests of the U.S. dredging and marine construction industry and its members for over 30 years. We are comprised of 26 companies providing dredging services to the U.S. Army Corp of Engineers (USACE), U.S. seaports, and State and local governments.

DCA and USACE developed a remarkably strong relationship in recent years. This cooperative spirit increased private sector capacity and the scheduling of jobs around the country. By working together, DCA and USACE meet America's dredging needs and provide for a better capitalized private dredging industry.

DCA appreciated the opportunity to provide input for the record for the Committee's hearing: Examining the Benefits of Investing in USACE Water Infrastructure Projects on July 28, 2021.

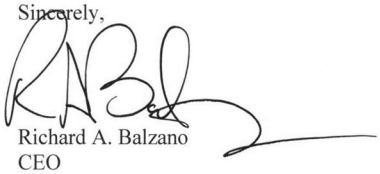
DCA would like to congratulate the USACE as it has:

- Secured record level budgets that is much needed to keep our waterways open; and,
- Adjusted contracting practices to allow for advanced procurement in the Lower Mississippi. This ensures necessary dredge capacity is scheduled at the onset of the annual high-water season. This step, and the expansion of the Southeast Atlantic environmental window, both allow for better capacity management of the commercial dredging fleet, which is a win for everyone. DCA and its members are supportive of working with the USACE to explore further adjusted contracting practices in other districts to address additional problems that might exist.

Additionally, full utilization of the Harbor Maintenance Trust Fund will ensure that the USACE and the private dredge industry continue their important partnership to maintain and improve our aging infrastructure in ports and harbors around the country.

Thank you for your dedicated service and for the opportunity to share the views of DCA's member companies with the Committee. Please feel free to contact me at (202) 487-5673.

Sincerely,



Richard A. Balzano
CEO
Dredging Contractors of America

CC: Senator Capito

Dredging Contractors of America

Hon Shelly Moore Capito
456 Dirksen Senate Office Building
Washington, D.C. 20510

Dear Senator Capito:

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Sincerely,

Richard A. Balzano
CEO
Dredging Contractors of America

CC: Senator Carper

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America's Cement Manufacturers™

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July 29, 2021

The Honorable Thomas Carper
Chairman
Environment and Public Works Committee
456 Dirksen Senate Office Building
Washington, D.C. 20510

The Honorable Shelley Moore Capito
Ranking Member
Economic and Public Works Committee
410 Dirksen Senate Office Building
Washington, D.C. 20510

Dear Chairman Carper and Ranking Member Capito:

The Portland Cement Association (PCA) appreciates the opportunity to submit comments for the Environment and Public Works Committee's hearing "Examining the Benefits of Investing in United States Army Corps of Engineers (Corps) Water Infrastructure Projects". PCA appreciates the chance to share our perspective on the benefits of advancing and investing in critical Corps infrastructure projects.

Portland cement is the primary ingredient in concrete. When portland cement is mixed with water, it creates a paste that binds with aggregates to harden and gains strength to form the rock-like mass known as concrete. Concrete plays an important role in the construction of water infrastructure projects across the country. Water infrastructure construction is a critical market for cement in the United States. For every dollar invested in water construction, approximately 211,000 metric tons of cement will be consumed. Additionally, our nation's waterways play a critical role in the movement of cement from manufacturing plant to market. Annually, the cement industry ships approximately 35 percent of our product from plants to terminals by barge, demonstrating these systems are vital for American commerce.

In communities across the country, Corps projects are essential to address water resources needs. According to the National Oceanic and Atmospheric Administration (NOAA), last year, the United States set a record of 22 weather and climate disasters with losses exceeding $1 billion for each disaster. This was the sixth consecutive year in which the United States experienced ten or more disasters with losses of this magnitude. Although there was a range of different disasters, many involved significant flooding. Corps projects are critical to helping communities build infrastructure to address these needs, demonstrating the importance of Congress continuing to pass a Water Resources Development Act (WRDA) on a biannual basis to advance critical water infrastructure projects.

Due to its durable nature, concrete is critical to building water resources projects that protect communities and return infrastructure to operating quickly. As part of this, our members recognize that sometimes structural features, including those made with concrete, work in concert with a natural or nature-based features (NNBFs) as part of a multi-feature design where each is part of a larger project. In evaluating ways to improve the resilience of a Corps project, engineers must be allowed to make decisions about how to use structured features and NNBFs, as opposed to dictating what must be built. To do this, it is important to consider the long-term costs and benefits of different project features. Different project features, including both structural and NNBFs, should be monitored closely to determine how they

provide flood protection and hold up over time. Doing so will ensure the best and most cost-effective project alternatives over the long-term.

We appreciate the opportunity to share PCA's perspective on the importance of continuing to pass a WRDA bill on a biannual basis to advance critical Corps projects and ensuring any policies seeking to advance the use of NNBFs balances take into account the costs and benefits of different project features over time. If you have any further questions, please do not hesitate to reach out to me at soneill@cement.org.

Sincerely,

Sean O'Neill
Senior Vice President
Government Affairs

Senator CARPER. Senators will be allowed to submit questions for the record through close of business on Wednesday, August 11th, to our witnesses, and we will compile those questions and submit them to you, and we ask you to reply by Wednesday, August 25th, if you could.

Anything else?

Hearing nothing further, thank you all, and this hearing is adjourned.

Thanks so much.

[Whereupon, at 11:51 a.m., the hearing was adjourned.]

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