

Table of Contents

U.S. Senate	Date: Wednesday, May 9, 2017
Committee on Environment and Public Works	Washington, D.C.
STATEMENT OF:	PAGE:
THE HONORABLE JOHN BARRASSO, A UNITED STATES SENATOR FROM THE STATE OF WYOMING	3
THE HONORABLE THOMAS CARPER, A UNITED STATES SENATOR FROM THE STATE OF DELAWARE	7
THE HONORABLE JAMES M. INHOFE, A UNITED STATES SENATOR FROM THE STATE OF OKLAHOMA	14
THE HONORABLE BENJAMIN L. CARDIN, A UNITED STATES SENATOR FROM THE STATE OF MARYLAND	18
PAT RILEY, ADVISORY COMMITTEE MEMBER, FAMILY FARM ALLIANCE	24
DENNIS STERNBERG, EXECUTIVE DIRECTOR, ARKANSAS RURAL WATER ASSOCIATION	29
KRISTINA SWALLOW, PRESIDENT, AMERICAN SOCIETY OF CIVIL ENGINEERS	34
THE HONORABLE JEFFREY BULLOCK, SECRETARY OF STATE, STATE OF DELAWARE	39
TONY PRATT, AMERICAN SHORE AND BEACH PRESERVATION ASSOCIATION	44

LEGISLATIVE HEARING ON S. ____, AMERICA'S WATER INFRASTRUCTURE
ACT OF 2018

Wednesday, May 9, 2018

United States Senate

Committee on Environment and Public Works

Washington, D.C.

The committee met, pursuant to notice, at 10:03 a.m. in room 406, Dirksen Senate Office Building, the Honorable John Barrasso [chairman of the committee] presiding.

Present: Senators Barrasso, Carper, Inhofe, Capito, Boozman, Wicker, Fischer, Rounds, Ernst, Sullivan, Cardin, Whitehouse, Gillibrand, Booker, Markey, and Van Hollen.

STATEMENT OF THE HONORABLE JOHN BARRASSO, A UNITED STATES
SENATOR FROM THE STATE OF WYOMING

Senator Barrasso. Good morning. I call this hearing to order.

We are here to examine legislation titled America's Water Infrastructure Act of 2018. This is bipartisan legislation. This legislation is introduced along with Committee Ranking Member Carper, Transportation and Infrastructure Subcommittee Chairman Inhofe and Subcommittee Ranking Member Cardin.

The Senate Committee of the Environment and Public Works has jurisdiction over much of our Nation's water infrastructure, including locks and dams, inland waterways, irrigation and water systems, and ports. These infrastructure systems are critical to keeping America prosperous and safe from dangerous floods and contaminated water sources.

This bipartisan legislation is a result of significant work in negotiations among the members of our Committee, and I want to thank each and every one of the members of the Committee for their efforts.

The discussions are ongoing. We plan to add a bipartisan manager's amendment to the bill, when we mark it up later this month, in order to address a number of other outstanding issues.

Water infrastructure is important to every region, to every

State, to every Tribe, and to every community in America. America's Water Infrastructure Act is going to support our Nation's economic competitiveness by increasing water storage, by deepening nationally significant ports, by addressing aging irrigation systems, and by maintaining the navigability of inland waterways across the Country.

In my home State of Wyoming and across the West, water storage capacity and supply are vital to local economies. Sediment buildup behind dams severely limits water storage. Our bill is going to address this problem by directing the Bureau of Reclamation and the Army Corps of Engineers to develop sediment management plans for Federal reservoirs.

America's Water Infrastructure Act will also expand our Nation's water storage capability by facilitating the permitting of additional reservoirs. For example, in Wyoming, the bill would approve the expansion of water storage at the Bureau of Reclamation's Fontenelle Reservoir in Lincoln County.

Expanding water storage will give our farmers, ranchers, and communities a reliable supply of water in order to keep their livestock and their crops healthy. More water storage also provides an economic incentive for new businesses to grow and to create jobs throughout the Nation.

America's Water Infrastructure Act will also fix deteriorating irrigation systems that are vital for growing

crops and for raising livestock.

The legislation isn't just important for rural America. Dredging nationally significant ports and maintaining our inland waterways will enhance our growing economy. Goods and raw materials need to move from the heartland to the coast for export. The bill is designed to maintain these vital arteries of commerce. It is good for big cities and for rural communities alike.

This legislation is also about health and safety. It includes provisions to repair old drinking water and wastewater systems, protecting communities from contaminated water sources. The bill will make it easier for the Army Corps to take steps to keep communities safe from flooding. It will address maintenance needs of older dams and levees that protect communities from dangerous floodwaters.

Finally, this bill will create an addition to the benefit-cost ratio framework. The addition will give local stakeholders a greater role in prioritizing Army Corps projects. Under this new provision, more projects are likely to be built in small rural and inland States.

America's Water Infrastructure Act is going to authorize or reauthorize important water infrastructure programs and projects that benefit all 50 States, so I urge my colleagues to work with me in a bipartisan way to pass this important legislation so we

can create American jobs and promote our Nation's prosperity, health, and safety.

With that, I would like to turn to the Ranking Member and cosponsor of the legislation, Senator Carper, for his statement.

[The prepared statement of Senator Barrasso follows:]

STATEMENT OF THE HONORABLE THOMAS R. CARPER, A UNITED STATES
SENATOR FROM THE STATE OF DELAWARE

Senator Carper. Thanks, Mr. Chairman. As my colleagues know, I take the train most days down to Washington from Delaware. Almost every day somebody on the platform, waiting to catch the train, will come up to me and say I wouldn't have your job for all the tea in China; you must hate your job. I really don't at all. I feel lucky to be here. I feel lucky to serve with the men and women around us on this Committee and in the Senate.

I wouldn't want to spike the football too early, but this is a day to celebrate. This is a victory, I think, in introducing this legislation, for bipartisanship, for fiscal responsibility. This is a victory for environmental soundness. It is good for the economy and embraces the idea of using some common sense, so I think we can be proud of this.

My colleagues hear me from time to time quote Lincoln. What is the role of government? The role of the government is to do for the people what they cannot do for themselves. Think about that.

One of the major roles of government is to create a nurturing environment for job creation and job preservation, along with a lot of other stakeholders. We try to do that, and I think successfully with this legislation.

So, my thanks to our colleagues on my left here, Senator Cardin, my thanks to Jim Inhofe and your staff, certainly to our Chairman for working with us and with our colleagues on this Committee and off the Committee to address America's water infrastructure needs.

Our bill, titled "America's Water Infrastructure Act," is an important piece of legislation, given that the authorization law under which the Corps of Engineers currently operates expires come December. I am proud of the bipartisan work we have done together on this legislation. We are stronger together and I hope that it will serve as a model for work that we on this Committee, along with others, can do in the future, this year and beyond.

Before I comment on the bill, I just want to thank all the witnesses for joining us today. I especially want to thank Jeff Bullock, who is our Secretary of State for the State of Delaware, who previously worked with me when I was a congressman and with my chief of staff as governor, and for a little bit as chief of staff for my first year in the United States Senate. Sitting right behind in the audience is Jonathan Jones, who worked as part of our team, who was my chief of staff. Two of my chiefs of staff here, former chiefs of staff here.

People ask me why I have had some success. I always surround myself with people smarter than me, and these are a

couple of them, and we are delighted that they are here.

I want to welcome back Tony Pratt, who is the President of the American Shore and Beach Preservation Association. He has been here before. He is a senior member of our Department of Environmental Protection in Delaware Natural Resources and Environmental Protection and we thank Tony for joining us, and all of our other witnesses, too.

Coastal issues are extremely important to everybody in the room, but especially to the lowest lying State in our Country, that would be Delaware, and the water resources bill is critical to our State's economy as it is to many other States.

Delaware's economic reliance on the Corps' work is not unique. I was astounded by this fact, but over 90 percent of U.S. overseas trade volume, over 90 percent of U.S. overseas trade volume moves through coastal channels that the Corps maintains. Think about that. Over 90 percent of U.S. overseas trade volume moves through coastal channels that the Corps maintains. They have an incredible job, incredible responsibility for all of us.

The Corps inland waterways and locks form a freight network. Think of it almost as a water highway that provides access to international markets through our ports. They also serve as critical infrastructure for the U.S. military.

Our bill authorizes investments in this system in multiple

ways, multiple ways. Most notably, it positions the Corps to be an active partner with ports, with communities, with States, with Tribes, and other stakeholders in growing and expanding our Nation's economy.

A reinvestment in this partnership is much needed. For the better part of a decade now, the Executive Branch has calculated water project costs and benefits in a way that has led to a backlog of unfunded and uncompleted, but needed, projects. Our bill works to address this problem by authorizing new funding and project planning requirements at the Corps' most local level, including individual Corps districts.

This legislation requires local participation in the development of new district plans, too, and, hopefully, this participation will allow for a more transparent and long-term look at the Corps' activities and serve to build a better and bigger groundswell of support for increased appropriations for the agency's initiatives down the line.

Our legislation also invests nationally in both coasts and inland waterways. I am particularly proud of a provision that will support the selection of natural infrastructure alternatives as a practical solution in situations where and when the development of gray or more traditional infrastructure alone may not work.

The Corps of Engineers also works to reduce risk to human

safety and property damage from flooding. Flooding alone currently costs the United States billions of dollars annually.

As the 2017 hurricane season illustrated, our Nation needs to be ready for the next extreme storm or flood event, because it is coming. Earlier this year, NOAA, the National Oceanic and Atmospheric Administration, announced that the total cost for extreme weather and climate events in 2017, get this, exceeded \$300 billion, a new annual record in the U.S. It is clearly not a matter of if the next extreme weather event is coming; it is a matter of when.

Our bill allows the Secretary of the Army to waive the cost share for hazard mitigation related feasibility studies so that we can be shovel-ready before the next storm hits. Additionally, the bill modifies the Corps' existing emergency authorities to allow the agency to participate in storm damage recovery for a longer period of time, make more resilient infrastructure decisions, and, where appropriate, cost share infrastructure replacements so resources can go further.

The American Society of Civil Engineers Infrastructure Report Card gives our Country's dams, our levees, our inland waterways a D, as in dog, as in decrepit. It gives our Country's dams, levees, and inland waterways a D, representing an overall cumulative investment backlog of nearly \$140 billion in an authorized but unconstructed portfolio of \$60 billion.

The bill reauthorizes the Corps' dam safety programs and makes needed changes as proposed by civil engineers.

Clearly, we have a lot of important work to do to move this bill across the goal line. However, if we continue to work, as we have, in a bipartisan fashion, I think we will get the bill done and our Country will be better for it.

Mr. Chairman, thank you again for your leadership on this bill and for your staff's hard work. I also want to thank our partners. I want to thank Senator Inhofe, who has worked in these vineyards before, Senator Cardin, as well, and your staffs for being a part of this process.

I just want to briefly recognize the staff members who are among those who worked very hard on this bill. They include Brian, Andy, Pauline, Lizzy, Craig, May, Jennie. In addition, I want to thank Christina Baysinger, Skylar Bayer, and John Kane of our own staff on the Minority side. All of our staff has spent countless hours working together through provisions that matter not just for Wyoming, not just for Delaware, but for our Nation as a whole.

Again, we welcome our witnesses. We look forward to hearing from each of you this morning to make this very good piece of legislation even better in the weeks to come. Thank you so much.

[The prepared statement of Senator Carper follows:]

Senator Barrasso. Well, thank you very much, Senator Carper.

I would like to now recognize the Chairman of the Subcommittee on Transportation and Infrastructure, Senator Inhofe, if you have some comments you would like to share with us.

STATEMENT OF THE HONORABLE JAMES M. INHOFE, A UNITED STATES
SENATOR FROM THE STATE OF OKLAHOMA

Senator Inhofe. Well, I do. I do. I would introduce the staff people like Senator Carper did, except they are all over at the EPA, so they are not here today.

Anyway, I thank you and the Ranking Member, Senator Cardin, for having this thing. I can remember the years that I chaired this Committee. We had gone through a number of years where we were supposed to do this, and everyone knows this, we were supposed to do it every two years. We had some periods of four or six, and one eight-year period where we didn't do it. We got back on schedule and I applaud the leadership of this Committee for continuing that.

Now, in all the people who are here today, it is important that we keep it up, we keep it going, and we do it in the proper way. It is one of the few things that really works well in government, is the way we do the WRDA bills.

In Oklahoma, our State DOT has an eight-year plan which is updated yearly and is publicly available. Now, everybody knows; there are no secrets in this thing. They know what we are planning to do, they know well in advance. They participate in it.

The budget reforms in this bill will provide an ongoing

five-year window of certainty and transparency, and allow for more input from stakeholders when creating priorities within the Corps' districts and headquarters.

The bill will also help our communities in building out their water and wastewater systems and assist them in complying with the many Federal mandates that are creating so many problems for so many people.

The growing communities in my State of Oklahoma, like Bartlesville, will be able to contract for additional water storage without breaking the bank. We have clarified language so that the stakeholders along the McClelland-Kerr Arkansas navigation system.

Everyone in this room knows because you are all experts, but out in the real world, how many people know that we are navigable in the State of Oklahoma or in Arkansas? As we go through, I remember 100 years ago, when I was in the State Senate, someone came to me from the World War II Submarine Veterans Association and they said, we'd like to demonstrate what we can do in Oklahoma. We are going to take a World War II submarine all the way from the Gulf of Mexico up through Arkansas to Oklahoma to the Port of Muskogee. They said it couldn't be done. All my adversaries were saying we are going to sink Inhofe with his submarine. All these things were going. But we actually did get all the way up there and it was a great

experience, so we are on the map.

With entrepreneurs in Oklahoma like Grant Humphries, I was down at his operation not too long ago. I can remember when the Corps didn't provide any kind of help in recreational activity. They are doing it now and we are doing it successfully.

I know that no bill is perfect and I know there are some concerns related to the Hopper dredge, and we are working on language, working closely with those who have a personal interest in that. We want to be sure that, if the private sector has areas where availability is not there, a compromise can be reached to try to accommodate those needs.

So, I look forward to continue to work with my colleagues to improve this bill. This will be one of the major pieces of legislation that we can all be proud of.

Thank you, Mr. Chairman.

[The prepared statement of Senator Inhofe follows:]

Senator Barrasso. Thank you, Senator Inhofe.

I would now like to recognize the Ranking Member of the Subcommittee on Transportation and Infrastructure, Senator Cardin, if you have comments you would like to share with us.

STATEMENT OF THE HONORABLE BENJAMIN L. CARDIN, A UNITED STATES
SENATOR FROM THE STATE OF MARYLAND

Senator Cardin. Well, Senator Barrasso, I want to join with Senator Carper and Senator Inhofe in congratulating you for bringing this bill to the Committee's attention in the best traditions of our Committee. I agree we should be doing these reauthorizations every two years in order to make sure that the authorizations are contemporary with need. It is our Committee's responsibility to do it, and you are carrying that out in the best traditions. It is certainly bipartisan and it is focused on clean, safe water for our Nation, advancing water infrastructure for both public health and our economy, and doing it in a fiscally responsible way, so I am proud to be part of this effort.

For our Nation, let me just mention three bills that I worked on with other members of this Committee in the United States Senate that parts are incorporated into this America's Water Infrastructure Act. I am pleased that a good part of S. 1137, the Clean, Safe, Reliable Water Infrastructure Act, is included. Senator Boozman has been one of the leaders on that, Senator Inhofe and Senator Duckworth, an important bill that deals with drinking water and wastewater infrastructure in our Country.

Parts of S. 692, the Water Infrastructure Flexibility Act, Senator Fischer was very much engaged in that Act, along with Senator Brown, that deals with the affordability, which is important to all parts of our Country, but particularly to my State, in Baltimore, it is a major issue and deals with integrated planning of our water infrastructure.

And then S. 451, the Water Resources Research Amendments, again by Senator Boozman, that we worked on for additional research into the effectiveness and efficiency of new and existing water treatment works.

So, there is a lot of important work that is being done for national strategies dealing with modernizing our water infrastructure.

I am proud of the impact this will have on the State of Maryland. I know that members of this Committee may be getting a little bit tired of my mentioning the Chesapeake Bay. I know that Senator Carper is not and Senator Van Hollen is not, but others may. But the Chesapeake Bay, obviously, is a matter of major concern. Maryland is a coastal State and this bill will help us deal with our coastal issues of the Chesapeake Bay and certainly the needs of the Port of Baltimore. We have other ports, we have a port in Salisbury, making sure that our channels are kept dredged at the right levels.

I say that because this bill will deal with Poplar Island

and Mid-Bay Island ecosystem restoration projects, and I really want to underscore this, because, when I first came to the United States Congress, the location of sites where we could put dredge material was extremely controversial, extremely controversial. Hart Miller Island are famous for congressional races based around the future whether we could find sites to put dredge materials.

That is no longer the case in our region thanks to Poplar Island, which not only serves as a location for dredge material, but is an ecosystem restoration project. Just recently, I had the opportunity to take the leadership of the Army Corps to the site to take a look at it, and it is a model site for what we should be doing in reclaiming lands that were once there. This was once a habitable island that had gotten down to about five acres. It is now being restored to thousands of acres and it is thriving as an environmental site.

The next location will be Mid-Bay, and this legislation provides for the continuity of the locations for dredge sites in Maryland in the Chesapeake Bay for keeping our channels to the depths that is needed, because that is critically important to our economy and the ports.

There is a provision in this bill that deals with the Anacostia River to complete the feasibility study. That is important.

Lastly, Mr. Chairman, I want to mention the point you mentioned, and that is the cost-benefit analysis dealing with smaller facilities. We have, in Maryland, numerous sites that are critically important to get Army Corps work to deal with recreational and tourism issues, and your leadership here will make it more likely we can get those projects on schedule to get the work that they need.

I am proud to be part of this effort.

[The prepared statement of Senator Cardin follows:]

Senator Barrasso. Thank you, Senator Cardin.

I would like to now ask Senator Boozman if he would like to introduce one of our guests.

Senator Boozman. Thank you, Mr. Chairman. I just want to take a second to give a special thanks to Dennis Sternberg being here today. Mr. Sternberg has spent almost 40 years in water and wastewater industry in Arkansas, hailing from Greenbrier, Arkansas. Twenty-nine of those years were spent working in almost all field positions, as a field rep, EPA program manager, USDA circuit rider, and wastewater technician trainer.

He and his Arkansas Rural Water Association staff are truly committed to the future of rural communities by assisting utilities throughout the State with the many challenges rural and small utilities continue to face.

He holds the highest water and wastewater licenses in Arkansas: Class 4 water distribution and Class 4 water treatment and Class 4 wastewater license in Arkansas.

In 2006, Mr. Sternberg received the Executive Director of the Year Award from National Rural Association, and in 2009 the United States Department of Agriculture and National Rural Water Association recognized Dennis for leadership in emergency response preparation.

Mr. Sternberg, we truly do appreciate you being here and

appreciate you bringing your knowledge of so many years, so much experience to the Committee today.

Senator Barrasso. Thank you very much, Senator Boozman.

Well, we have a wonderful panel here to join us today.

Pat Riley is here, the Advisory Committee Member from the Family Farm Alliance; Mr. Sternberg, who has just been recognized, is the Executive Director of the Arkansas Rural Water Association; Kristina Swallow, thank you for joining us, the President of the American Society of Civil Engineers; and then, of course, Jeff Bullock, Secretary of State from Delaware.

I understand when you started working for him you had hair. That's what I hear.

[Laughter.]

Senator Barrasso. And Tony Pratt, President of the American Shore and Beach Preservation Association.

I want to remind our witnesses your full written testimony will be made part of the official record today. If you could please keep your statements to five minutes so we may have additional time for questions.

I look forward to hearing your testimony, beginning with Mr. Riley. Please proceed. Welcome.

STATEMENT OF PAT RILEY, ADVISORY COMMITTEE MEMBER, FAMILY FARM ALLIANCE

Mr. Riley. Thank you, Senator Barrasso, Senator Carper, and members of the Committee. I am new to this, so bear with me.

My name is Pat Riley. I live near Roundup, Montana, which is in central Montana, the Missouri Breaks country. I am a farmer-rancher and also a consultant throughout the State that works with farmers and ranchers to deal with water rights and water resource issues.

I previously served as a manager of the Rivers Adjudication in northeast and southeast Montana, which entailed working on the Upper Missouri and the Yellowstone River Basin for a number of issues.

Prior to that, I managed Montana's Irrigation Development Sustainment Program and worked with a lot of Indian Tribes, up 'til 2014, where I moved back into the private area.

I am here to represent the Family Farm Alliance and bring perspective for the Upper Missouri and Yellowstone River Basins, where I live and I work. The Alliance has provided extensive testimony, written testimony, and I am only going to address a couple of different issues. Although I do have an interest in many other issues; it is just, with five minutes, I picked three

of those.

The first section that I wanted to talk about was Section 1024. This deals with the watercraft inspections on the Upper Missouri and the Columbia Basin in regard to the aquatic invasive species issue. Just in the last two years, in Montana we have had two Bureau of Rec projects where, in fact, the zebra mussels, some sign of the zebra mussels has hit our State, and we are in panic mode and inspections are taking place in Montana and we are actually formulating that. This will definitely help us to try to preserve our waters, even though the Eurasian milfoil has been in our State for a number of years and we are trying to deal with that.

Section 3306 and 3403, these are the sections about the reservoir sediment problems that we see day-to-day in our State and throughout the United States. Siltation is a chronic problem throughout the West. I have looked at reservoirs from BIA, any Federal projects to State projects to local projects, and many of the reservoirs are 70 to 100 years old.

There are some of the reservoirs that I work with that are 50 percent full of silt right now. Well, if you think of that from my perspective as a farmer and rancher, this means that when I had 20 inches of water to use on my crop, now I have 10. I can't raise the crops I need to raise with 10 inches of water. So, this is a huge issue, siltation, from the farming side.

Flood control is also a huge issue.

The biggest reservoir area is an Army Corps project, the Fort Peck Reservoir project. It is 19,200,000 acres feet of water. It is the upper of the three big reservoirs on the Missouri River. Well, if you assume that say it was 25 percent full of silt, which is 1930s vintage, that would be a likely scenario. We are talking about 5 million acre foot that is used for flood control and irrigation and those sorts of things. That is a huge chunk, and it is only growing each and every day. I run into it all the time; we see it out on smaller projects where that has dramatically increased. And when you have silts of that level, your evaporation goes up because water becomes shallower.

The final section that I want to talk about is the tribal, one that is very near and dear to me, Sections 3807 and 3808. These are the tribal water right projects. I work solely on Indian water right projects in our State. We have seven Reservations and thousands of acres of irrigation in BIA projects. Most of the BIA projects, I have to admit, are in woeful state. If I was to compare the Bureau of Rec projects in our State, they are probably 30 percent worse than the Bureau of Rec projects, who we all know have 100 years of infrastructure that has been sitting there and falling apart. We need to deal with this. On the tribal projects, there are some that I would

call almost non-functional.

I know that was just a brief of the things that I reviewed, but I felt like I needed to take as little time as possible, and I would like any questions that you would like to provide me later on. Thank you.

[The prepared statement of Mr. Riley follows:]

Senator Barrasso. Thank you very much, Mr. Riley.

Mr. Sternberg.

STATEMENT OF DENNIS STERNBERG, EXECUTIVE DIRECTOR, ARKANSAS
RURAL WATER ASSOCIATION

Mr. Sternberg. Thank you. Good morning, Chairman Barrasso, Senator Boozman, and members of the Committee. It is an honor to be here, and we are grateful that you have included the voice of rural America in this hearing.

Thank you, Senator Boozman, for consistently listening to and helping rural Arkansas, including holding the first hearing on Senator Wicker and Senator Heitkamp's technical assistance bill, which is contained in today's legislation. And thank you, as well, for sponsoring the SRF WIN with Senator Booker.

Rural and small town USA depends on this Committee to ensure that the interests of rural communities are contained in Federal legislation. The Great Compromise of 1787 that allows for proportional representation of States, including very rural States, in Federal policy is alive and well in this Committee and in your legislation. Thank you for that, Senators Barrasso, Carper, Inhofe, and Cardin. Rural America is very appreciative for the very helpful and beneficial provisions in your water legislation, America's Water Infrastructure Act of 2018, and we urge its passage and enactment.

My name is Dennis Sternberg, and I am the Executive Director of Arkansas Rural Water Association, a non-profit

association of small and rural community water and wastewater utilities in Arkansas. But I also am here representing the National Rural Water Association, which has over 31,000 member community utilities.

We are very appreciative that your legislation includes numerous drinking water and clean water provisions that make the America's Water Infrastructure Act a comprehensive water legislative package. I would like to focus my comments on the important and beneficial provisions under Title 5.

Section 5004, Technical Assistance. Approximately 80 percent of the Country's 14,500 wastewater utilities serve populations fewer than 10,000. As you know, small and rural communities have a much more challenging time complying with Federal Clean Water Act permits and operating complex wastewater systems due to the lack of technical resources in small communities. This legislation provides a solution to the lack of technical resources in small communities by providing technical experts, as we call them, Circuit Riders, in each State to be shared by small and rural communities. For these Circuit Riders to be effective and helpful, they must be able to directly travel to any given community to work specifically to solve any of the specific problems.

Section 5010, the Water Workforce Investment. We welcome this new Federal attention and emphasized mission for water

workforce development. Like me, when I first started working, not every young person entering the workforce necessarily has the option to go to college. A college degree is a value, but it is not required. A true apprenticeship model would be a welcome enterprise for the water worker universe. In any given day, water workers may be operating heavy equipment to repair broken lines, working with toxic chemicals, welding, conducting tests, operating process controls, complying with Federal rules, managing construction, and the list goes on.

Section 5011, Sense of Congress Relating to the State Revolving Funds. Thank you for supporting the funding for the SRFs. They are essential in funding water infrastructure and projects to comply with the Federal rules, especially the small and rural communities in our State and the Country that have more difficulty affording service due to lack of population density.

Section 5012, the GAO Study on WIFIA Projects. We hope the GAO will review the WIFIA program considering it does not require any economic needs-based targeting, credit elsewhere means testing, or focus on compliance. Small and rural communities support Senator Boozman and Senator Booker's SRF WIN Act, which improves WIFIA by authorizing an opportunity for States to direct some portion of the WIFIA funding to be used by each State's SRFs.

Section 5006, Water Infrastructure Flexibility. We support the legislation for improving the current affordability analysis used by EPA to make compliance reasonable on ratepayers, especially in economically disadvantaged populations. Under the Safe Drinking Water Act, EPA adopted a policy that families can afford annual water rates of 2.5 percent of the median household income, which adversely impacts rural communities that have higher percentages of people living in poverty and the lower MHI.

This Committee is very important to rural and small-town America, and we are grateful for the opportunity to testify today for the attention and consideration you have provided in crafting this most recent legislation. Thank you very much.

[The prepared statement of Mr. Sternberg follows:]

Senator Barrasso. Thank you, Mr. Sternberg.

Ms. Swallow, thanks so much for being with us today.

Welcome.

STATEMENT OF KRISTINA SWALLOW, PRESIDENT, AMERICAN SOCIETY OF
CIVIL ENGINEERS

Ms. Swallow. Thank you. Chairman Barrasso, Ranking Member Carper, and members of the Committee, thank you for inviting me here today to testify on the importance on a long-term, strategic investment in our Nation's water resources.

I am Kristina Swallow. I am a licensed professional engineer and I am the President of the American Society of Civil Engineers, a professional engineering society representing over 150,000 members.

It is wonderful to be back here in Washington, D.C., where I previously served for three years as a AAAS fellow and legislative aide to Senator Tom Udall.

Many of you are familiar with ASCE's Infrastructure Report Card that we release every four years. ASCE's 2017 Report Card gave our Nation's infrastructure a grade of D+ and determined that there is an investment gap of \$2 trillion over the next 10 years. Our Failure to Act Economic Study found that our Nation's deteriorating infrastructure and growing investment deficit hurts our Nation's economy. Failing to invest by 2025 carries enormous economic costs, to the tune of nearly \$4 trillion in lost GDP and 2.5 million jobs lost in 2025 alone. It also costs every single family in our Nation \$3,400 a year in

disposable income.

WRDA bills are critically important to the health of our Nation's water resources, which in turn play a crucial role in the Nation's economy, public safety, and the preservation of our environmental resources. Our levees, dams, inland waterways, and ports protect hundreds of communities, support millions of American jobs, and generate trillions of dollars of economic activity.

As you are well aware, many of these infrastructure assets have reached or exceeded the end of their design life and need to be repaired and modernized. Two programs that ASC has long championed are the National Dam Safety Program and the National Levee Safety Program. Both are crucial components of risk reduction and protect communities, critical infrastructure, and trillions of dollars of property.

The National Dam Safety Program was reauthorized in WRRDA 2014 and has helped inventory nearly 90,000 dams across the Country, assessing their condition and providing training and tools to dam safety programs.

The National Levee Safety Program, enacted in WRRDA 2014, has helped to create an inventory of our Nation's levees. We now know the location and condition of nearly 30,000 miles of levees. However, there is much work to be done to further inventory the thousands of miles of levees not yet in the

database.

We are pleased that America's Water Infrastructure Act of 2018, or WRDA 2018, includes a reauthorization of both programs.

ASCE is also supportive of alternative financing mechanisms for water resources projects, including the WIFIA program, which can be utilized by the Corps for a variety of water resources projects. We are pleased that this bill includes reauthorization of WIFIA and we encourage the Corps to continue their implementation of the program.

ASCE championed Section 5014 of WRRDA 2014, authorizing the Corps to enter agreements with non-Federal interests to finance construction of at least 15 water resources development projects. We were pleased that President Trump's infrastructure proposal included provisions to remove barriers to implementation of this program. We urge the Committee to follow in the Administration's lead by authorizing a user fee collection and retention under this Corps pilot program.

Finally, we ask the Committee to include the SRF WIN Act in WRDA 2018. This legislation offers an innovative new tool to leverage limited Federal resources and stimulate additional investment in our Nation's infrastructure, while safeguarding against any cuts to the existing State revolving funds and WIFIA programs.

In conclusion, ASCE believes our Nation must prioritize

investment in our water resources infrastructure systems. Strategic, robust, and sustained investments through long-term, reliable Federal funding, as well as through the utilization of alternative financing mechanisms must be made quickly if we hope to close the growing gap and restore America's world class infrastructure.

I thank you for holding this hearing. ASCE looks forward to working with you and the member of the Committee to find solutions to our Nation's water resources investment needs, and I look forward to taking your questions later.

[The prepared statement of Ms. Swallow follows:]

Senator Barrasso. Thank you so much for your testimony.

Mr. Bullock, welcome back to the Committee. Look forward to hearing from you. Thank you, Mr. Speaker.

STATEMENT OF THE HONORABLE JEFFREY BULLOCK, SECRETARY OF STATE,
STATE OF DELAWARE

Mr. Bullock. Thank you, Mr. Chairman, to my governor, Tom Carper, to members of the Committee, for the privilege of appearing before you today and offering some brief remarks about the America's Water Infrastructure Act of 2018 and the importance of this legislation not just to my State and the Mid-Atlantic region, but to our Nation as a whole.

I am Jeff Bullock. I am the Secretary of State of the State of Delaware, but today I am here as the Chairman of the Diamond State Port Corporation. The Diamond State Corporation is a corporate entity of the State of Delaware. It was established in 1923 and it owns and operates the Port of Wilmington.

Our port, like many ports in America, touches the lives of millions of Americans every day. The banana you had for breakfast this morning came through the Port of Wilmington probably Monday or Tuesday of last week, and three weeks ago was growing on a tree somewhere in Central America. The grapes you enjoyed this winter were from Chile; also came through the Port of Wilmington. Those little clementines that we love to eat around the holidays, came from Morocco, also through our port.

Now, Senator Carper knows we are in the process of a

planned expansion at the Port of Wilmington to provide more capacity for our existing customers and for future businesses, and that is one of the reasons that this bill is so important to us as we move forward.

Just let me say that over the last couple of years I have had the opportunity to visit a number of ports both in the United States and around the world, and, perhaps more importantly, to talk to any number of port experts internationally, and I can tell you for certain that many of our ports, including my own in Wilmington, are falling behind and not able to keep pace with our competition.

Maintaining marine infrastructure such as public ports is essential to our Nation's economic future. Delaware and the Corps of Engineers have long enjoyed a great relationship for as long as I can remember and as long as I have been involved in the port, which goes back to the Carper administration, almost 25 years now, but the importance of the Corps as we move forward with this expansion is even more essential.

The reasons for that are pretty clear: we are in the midst of a rapidly changing global marketplace, and ensuring the Corps is running efficiently is more critical now than perhaps ever before. Ports are strong partners with the Corps of Engineers to ensure that we can meet the trading needs of our Country and the needs of the flow of commerce and keep that moving forward.

But ports are also under an increasing amount of competitive pressure. Shippers are demanding greater efficiency and lower costs. Increased velocity, the rate at which our goods move through ports and arrive at their final destination, is now the measure of our success.

WRDA is an opportunity to look at process improvements, as well as make transformational changes in how our Nation provides resources to our seaports. Our regional ports also work closely with the American Association of Port Authorities and support the recommended changes and core processes that will make navigational projects move more efficiently and support stronger partnerships.

The amount of freight that is going to move through U.S. ports is going to continue to increase significantly. Our own Port of Wilmington has seen growth of 150 percent just in the last eight years. I want to applaud the work of the Chairman and the Ranking Member on the provision included in this legislation which highlights transparency and accountability in cost-sharing for water resource projects.

The foundation to building a project or conducting a feasibility study should always be done in good faith, and, with the provisions set forth in Section 1004, local communities and States are now able to see the balance sheets of their respective projects. Furthermore, any unused monies from a

project that comes in under budget will be credited back to the non-Federal sponsor. For States and local communities like mine, who continue to work under tight budgets year after year, this is a big win.

Another provision in the bill that we strongly support is Section 1012, Extended Community Assistance to Disadvantaged Communities. Properly identifying and understanding the disadvantaged community greatly improves efforts to engage with those community members.

In closing, let me say the U.S. Army Corps of Engineers is a valued partner in managing States' waters and beaches through navigation, environmental restoration, flood control, and other projects. Without this legislation, the partnership that so many of us count on around the Country as vital to our economic growth will be stymied.

And, as for ports, I would remind us all of these things: 23 million American jobs are supported by U.S. seaports; \$6 billion of goods are handled through seaports each and every workday; \$312 billion a year in tax revenue is generated by port activity; and \$4.6 trillion of economic activity is related to our seaports annually. Very clearly, our ports are a central part of our Country's economic future.

Thank you again for having me today. I look forward to any questions you might have.

[The prepared statement of Mr. Bullock follows:]

Senator Barrasso. Thanks so much, Mr. Bullock.

Mr. Pratt, welcome to the Committee. We look forward to hearing from you.

STATEMENT OF TONY PRATT, AMERICAN SHORE AND BEACH PRESERVATION ASSOCIATION

Mr. Pratt. Good morning. I want to, first of all, start by thanking the Chairman and Ranking Member for the leadership in bringing this bill forward, as well as the Subcommittee leadership in bringing this bill forward. It is very important we keep on a biennial track.

I am the President of the American Shore and Beach Preservation Association, an organization founded in 1926 that is intended to help care for the Nation's coastlines and beaches through science and technology.

We want to start today by saying how happy we are looking at the five-year budget plan that has been proposed. It is, to me, very reflective of the fact that when earmarks, members' requests, were eliminated a number of years ago from a user standpoint, non-Federal partner user standpoint, many of the transparencies that we enjoyed in that process of having open discussions was lost. We find ourselves in a world of a mystery kind of black box, where the Congress is appropriating funds for Corp of Engineers work, we wait by the sidelines in years of continuing resolution into the mid-spring to find out what work we are going to be seeing coming forward, and we are then, at that time, able to come up with our matching funds and the Corps

has to conduct contractual work in a short period of time. The five-year budget plan opens this process up to a better dialogue and a better vision for the future, and we look forward to working with the Corps and you all with that.

I like the fact of the bill's incorporation of the Integrated Water Resources Management, which is a modernization step that will help improve services delivery to the Nation. Looking to align authorities, improve opportunities for information sharing, and supporting complementary and integrated solutions to water resources challenges among partners and stakeholders is a valuable step forward for the Corps and its partners and project beneficiaries.

The required guidance to ensure that the five-year budget and work plans take into consideration a full array of Corp business lines to maximize the return on the Federal investment is supported. This helps put natural infrastructure investments on par with gray infrastructure investments.

As I have stated in testimony to this Committee previously, water and coastal infrastructure, just like manmade infrastructure, is about assets that society depends on and, most particularly, it is about U.S. jobs. Creating jobs and protecting jobs that are blue collar jobs, as well as white collar jobs, these are American jobs that cannot be outsourced. Service industry at the coast is alive and well and abundantly

serves the Nation's economy. Investment in natural infrastructure through multi-business line investment secures that economic return for generations to come.

Another issue that has been a challenge in the past is how well informed the conversation on Federal water resource investment has been. Our observation has been that the benefit-cost analysis has not well served that purpose; it does not consider the return of Federal investment very well at all. Whereas, the total cost of projects are accounted for, there are many national benefits that are not included. This is a disservice to the Nation, we believe.

We strongly advocate for a more informed BC process that informs appropriators on the full return of national benefits on the investment made. The five-year budget plan and the integrated water resources approach are a major step forward in realizing this goal. We again thank you for your inclusion of these and look forward to future discussions with you on approving the benefits calculations. We are also very happy to see the call for the GAO study that will examine the possible BC calculation reforms. This is a wise course of action and very much needed.

By the fact that the EPW Committee remains committed to a biennial Water Resources Development Act, the Corps' Civil Works budget remains on a forward-looking track and each subsequent

WRDA provides opportunity to continue to build improvements and modernization of the Corps' Civil Works mission.

ASBPA is also appreciative of the inclusion of the Great Lakes Coastal Resiliency Study. Combined with the North Atlantic Study, the South Atlantic Study, and Gulf Coast studies that have gone on, we are perching our Nation very much in a better position to have a resilient coastline when future storms occur. This is an objective we strongly support.

Finally, the National Academy's study is endorsed. This study will take a broad view of the way in which the Nation's water resources development projects are delivered. The NAS study should take into consideration how the Administration views the Corps' mission and supports it through budget and policy.

We strongly support an overview of how the Corps currently operates and if there are improvements that could be made to get projects completed as quickly and efficiently as possible, should they be identified and pursued. ASBPA offers our assistance in any way you may find our expertise and experience with coastal water resources protection projects helpful in accomplishing your stated goals.

I want to thank you for the opportunity to talk with you today and look forward to any questions you may have.

[The prepared statement of Mr. Pratt follows:]

Senator Barrasso. Well, thank you so much, Mr. Pratt.
Thanks to all of you for your testimony.

We have a diverse group of stakeholders who have already provided letters and statements of support for America's Water Infrastructure Act of 2018. They include the Family Farm Alliance, the U.S. Conference of Mayors, the National League of Cities, the National Association of Counties, the American Society of Civil Engineers, the National Rural Water Association, the American Water Works Association, the Association of Metropolitan Water Agencies, the National Association of Clean Water Agencies, and the Portland Cement Association.

I ask unanimous consent to submit all of these letters and statements in support of the bipartisan legislation for the record.

Without objection, it is done.

[The referenced information follows:]

Senator Barrasso. Let me start with a question.

Mr. Riley, if I could ask you, please. Developing adequate water supply for future uses in States like Wyoming, Montana can be difficult because of the regulatory permitting process. We have talked about this. It can also be challenging when the Corps disagrees with a State about the purpose and the need of proposed water storage or to adhere to unexpected permit conditions that come with the permit. These roadblocks often happen later in the permitting process, upending projects after significant time and resources have already been spent by the State.

Can you explain how future economic growth is impacted in States like Wyoming and Montana when adequate water supply storage is blocked by cumbersome Federal red tape, and can you explain how this bill will help address this important issue?

Mr. Riley. Senator Barrasso, members of the Committee, usually, when these red tape and these processes are blocked, we have already spent millions of dollars of State and private money to get to that stage. It is kind of like running into a roadblock when the Army Corps puts their foot down, because the only option for us at that point is to come back to you gentlemen, and that becomes very difficult when you live a two days' flight from Washington, D.C.

In the proposal, sorry about the section, I don't remember, about having the Committee or the group set up, it gives us a second chance to lay out our facts, because oftentimes the perspective of the man making the initial decision, this allows us to have people in the room that understand what we are talking about. It gives us a second chance. Not that we will always get there, but if you kill that momentum, I have been in many projects, when you kill it, you kill it, and it is hard to get back. I know of some storage projects we have done in our State that got killed, and they are done.

Senator Barrasso. Following up, we know that adequate and affordable water supply is critical to farmers and ranchers in Wyoming, Montana. Our reservoirs across the West to Midwest have lost significant water storage capacity due to sediment buildup. This legislation we are discussing today increases water supply in existing reservoirs by developing sediment management plans for these reservoirs through the use of partnerships between the Corps and the U.S. Bureau of Reclamation.

If we restore these reservoirs' capacity by removing this excess sediment, what will be the impact for family farmers across the West and Midwest?

Mr. Riley. Senator Barrasso, members of the Committee, I can address that from a personal note. I actually farmed in the

Milk River Valley, which is a Bureau of Rec project, and our upper reservoir is about 65 percent full of silt. That stores half of our water supply. So, if I can put that in real terms, that \$200 hay, which is kind of where we talk, that costs me about \$300, \$350 an acre.

As a young farmer early in my career, it almost took me out of the business. You can't manage on that; you can't bank on that. That is what that storage really means, in a nutshell, to the farmer. It could be his malt barley crop or his beet crop, also.

Senator Barrasso. Thank you.

Ms. Swallow, this legislation authorizes several Corps projects for construction and encourages expedited completion of several projects that are already underway. Each of these projects serves an important purpose, such as providing for navigation, for flood risk management, for hurricane and storm damage, risk reduction, ecosystem restoration. You have seen the list.

Can you further elaborate on why ongoing and future Corps projects are so critical when it comes to maintaining America's economic viability, including job creation, economic growth, and our global competitiveness?

Ms. Swallow. Thank you for that question, Chairman Barrasso. The Corps maintains a network of 25,000 miles of

inland waterways, 239 locks, and over 13,000 miles of levees. All of these assets help move our goods out to other parts of the Country, as well as our international markets, they protect our communities, and they provide access to clean drinking water and other benefits to our communities.

Unfortunately, we have not been funding the Corps as needed. These facilities are not just decades old, some of them are a century old; and while they were designed with the best information we had at the time, they are no longer meeting their needs, they are beyond their design life, and they weren't designed for the traffic they are seeing today. It is critically important for our economy and for our communities that we continue to invest in the Corps; and not just invest, but increase that investment to really meet their needs.

Senator Barrasso. Senator Carper.

Thank you all.

Senator Carper. Mr. Chairman, I am happy to yield to colleagues.

If any of you have time constraints, I am happy to yield. I am not in a hurry to get out.

Senator Inhofe. I am good. I will wait for you. I don't want to miss what you are saying.

[Laughter.]

Senator Carper. Liar, liar, pants on fire.

[Laughter.]

Senator Carper. All right, John, do you want to go first.

Senator Inhofe. Whoever doesn't want to here.

[Laughter.]

Senator Barrasso. Well, I have some questions for Mr. Sternberg.

Senator Boozman. Thank you all so much for holding this very important hearing.

Before I get started, I would like to take a second to offer a group of support letters for the SRF WIN Act that we have been talking about and some of you all have mentioned in your testimony. This includes the National Rural Water Association, the Council of Infrastructure Financing Authorities, the American Society of Engineers, the Associated General Contractors of America, the American Council of Engineering Companies, the National Association of Clean Water Agencies, Ducks Unlimited, the American Public Works Association, the Rural Community Assistance Partnership, the Water Systems Council, the International Union of Operating Engineers, the Vinyl Institute, the Hydraulic Institute, California Association of Sanitation Agencies, Orange County Water District.

I would also like to take a second and thank the EPA Office of Water, the Council of Infrastructure Financing Authorities,

American Water Works Association, Water Environment Federation, and the Association of Metropolitan Water Agencies for providing us technical assistance to ensure that we preserve the WIFIA and SRF programs for years to come.

[The referenced information follows:]

Senator Boozman. Mr. Sternberg, let me ask you. The SRF has a great track record of handling SRF funding to address vitally important water issues, wastewater projects in the State for years. Rural States like Arkansas, though, have limited access to funding. Across the Country, SRFs have thoroughly vetted projects from small, medium, and large communities that are waiting to be funded.

Can you please explain what the additional funding created by another tool in the toolbox, like SRF WIN, what would that mean for water infrastructure in rural America?

Mr. Sternberg. Thank you, Senator Boozman. That is a great question. Let me just say Arkansas Natural Resources Commission is the agency in Arkansas that handles the SRF for the Safe Drinking Water Act and the Clean Water Act, and they have done an excellent job, but there is still a need. With this bill, you know, you have the SRF WIN in it, and that will allow the WIFIA program to be much more helpful to some of the rural communities such as we have in Arkansas, which is a very rural State, and many of your States are rural.

But not only rural communities. We think it will steer the WIFIA to look at the communities with the greatest economic need and communities that each State thinks is the priority, and giving the State the priority that handles SRF to say this

project needs to be funded. It also allows for that low interest rate to come through with the WIFIA funding. It will be an excellent partnership with the SRFs and it will be excellent to the utilities across the State of Arkansas and many States across the Nation.

Senator Boozman. Ms. Swallow, we certainly appreciate your leadership and the great job that your organization does in constantly pushing us in the right direction and really describing the situation that we are in regarding infrastructure.

Can you tell us a little bit about the growing shortfall in infrastructure funding in the Country?

Ms. Swallow. We could talk for days about that, Senator Boozman. So, when we start talking about the investment gap needed for our infrastructure systems, you can look at drinking water alone and recognize that we waste billions of gallons of water everyday through leaky pipes. That equates to trillions of gallons a year. And we don't have a single drop of water to waste, really, especially in the western portions of our Country.

We have a growing funding gap. Currently, it is estimated, in the next 20 years, almost three-quarters of a trillion dollars, \$750 billion is the funding gap on our water and wastewater needs alone. We have to find a way to invest in this

infrastructure.

Senator Boozman. So, we are all doing the best we can. We are working away, but the current situation is not near as good as we would like, so something like an SRF WIN type of financing, how would that affect things?

Ms. Swallow. First, I want to thank you for your sponsorship of the SRF WIN Act. It is --

Senator Boozman. Myself and Senator Booker.

Ms. Swallow. Yes, thank you, and Senator Booker.

It is just one more tool in our toolbox that will help our local communities fund the infrastructure that they need to serve their communities' needs. It is intended to take the best parts of the State Revolving Funds and the WIFIA program and provide that access to our local communities where the State infrastructure financing authorities can implement the program. It provides additional flexibility; it doesn't further tax the EPA with another program where the State infrastructure financing authorities are already administering our State Revolving Funds.

So, it is a great tool. It will leverage the limited Federal funding \$1.00 up to \$50.00 in additional funding. It will be just one more tool that our local agencies can use.

Senator Boozman. Good. Thank you very much.

Senator Barrasso. Thank you, Senator Boozman.

Senator Fischer.

Senator Fischer. Thank you, Mr. Chairman.

Ms. Swallow, if I could follow up on some of this. As you know, our inland waterways are critically important for moving our abundant agricultural products to ports located along our coasts. As the only triple landlocked State in the Nation, Nebraska and our ag producers rely on efficient river barge traffic and a functional inland waterway network to supply our overseas customers with our high-quality products.

As you note in your testimony, there is great need for investments in maintenance and repair of these inland waterways. Also in your testimony you emphasize the benefits of WIFIA loans authorized by the Army Corps and the benefits that they could supply to this network.

Can you elaborate on how the WIFIA loans could be applied for inland waterway projects?

Ms. Swallow. WIFIA loans are, again, just one more tool that we have; it is an alternative financing mechanism where we can leverage the limited Federal investment \$1.00 up to \$50.00 of additional private and alternate funding sources.

When we have insufficient funding, we have to be able to use all the tools that we have in our toolbox, and that is just another way that we can do it. The WIFIA program has just recently been started by the Army Corps, and we are excited to

hear that and we are looking forward to their continued implementation of it.

Senator Fischer. Do you believe that private-public partnerships are feasible when looking at inland waterways? Do you think that there will be private enterprises step forward to be able to access that funding?

Ms. Swallow. As long as there is a way to offset and for them to see a revenue source, they are a great way to improve our network. As you mentioned, so many of our products go through that inland waterway system, so I do see that as a solution.

Senator Fischer. Thank you.

Mr. Sternberg, I thank you for once again testifying before our Committee. Given your career working with wastewater infrastructure, I am sure you are familiar with unfunded Federal mandates, specifically those communities facing expensive Clean Water Act compliance requirements related to stormwater and wastewater projects.

In my home State of Nebraska, the City of Omaha was hit with a \$2 billion unfunded Federal mandate from the EPA to update its combined sewer overflow system. I was pleased to see my Water Infrastructure Flexibility Act included as Section 5006 in the bill before us, and I thank you, Mr. Chairman, for that.

The purpose of this section is to allow communities facing

expensive stormwater and wastewater infrastructure updates to have greater flexibility to achieve compliance under the Clean Water Act.

Mr. Sternberg, can you please discuss your experiences with communities that are forced to comply with expensive Federal mandates, and will this section of the bill help alleviate some of the financial and structural burdens these communities are facing?

Mr. Sternberg. Thank you, Senator. My experience in Arkansas, where there are about 700 community water systems and then we have about 350-some wastewater systems. Arkansas, as Nebraska, is a rural State. The majority of all systems in the Nation, 14,500, serve less than 10,000. So, when you start passing regulations from EPA down to comply with the same level as a large city such as Omaha, it is harder because you don't have the customer base to spread that cost across the board. It is very hard financially on the system, the customers of the system, but it has to be paid for some way or another.

That is why a grant-loan ratio. That is why we think, also, there needs to be more technical assistance put in for Circuit Riders. That is what we do; we go out there and work with these small systems and larger systems with our equipment. We do the INI studies on their collection system. There is no need in building a brand new plant if you can fix the INI. It

is kind of like Ms. Swallow mentioned, the water loss that you have on leaks on water systems. You know, let's identify the problems and fix them; don't build another well or another treatment plant because you have more leaks. It is the same way on the wastewater side. You know, let's be reasonable. Let's look at it. That is where the engineers do an excellent job identifying the problems on your utility to try to come in compliance. But we have always argued that unfunded mandates, EPA states that you need to do this, but they don't fund it.

We have had the same problem with the EPA on our technical assistance funding. Back in 2012, it was put out through EPA, no more earmarks, so in 2012 they had to go out and go through the process of bidding out all the technical assistance. Well, there were several different pieces of legislation that was introduced to make EPA streamlined and do it with the utilities that is deemed the most benefit, whatever nonprofit is most beneficial to them. They haven't done that. EPA has not done that and members on this Committee have wrote letters to EPA in regard to that, about, you know, you need to go back to this rule and do it this way, but they haven't done it, and we have letters to back up, letters that Senators sent and EPA responded back.

Senator Fischer. We have seen a huge increase on these bills to the people in the City of Omaha, so I am hopeful that

the flexibility provided in this bill is going to help alleviate some of that hardship they are facing.

Mr. Sternberg. I think it definitely will.

Senator Fischer. Thank you.

Mr. Sternberg. Thank you.

Senator Barrasso. Thank you, Senator Fischer.

Senator Whitehouse.

Senator Whitehouse. Thank you, Chairman. Let me open my time by thanking you and the Ranking Member for the constructive way in which this Committee is proceeding on WRDA legislation. We often find ourselves at odds on certain issues, but I applaud the way in which the Committee works in bipartisan fashion on the water resources, and I want to particularly recognize the both of you.

Ms. Swallow, one of the things that we see is that the march of progress and innovation brings new materials to the fore, innovative materials, often composite materials. What is your read on how well the Army Corps engineering manuals and other guidance provide adequate preparation for applicants to be able to use those innovative materials in projects? Should that be a continuing focus to try to make sure that the standards that have been in place for concrete and steel and other more traditional materials are updated to include innovative and composite materials?

Ms. Swallow. Senator Whitehouse, that is a fantastic question. Indeed, we do agree that we need to provide for all agencies to incorporate the use of new materials. We can't continue to design projects the way we did 50 years. We can't afford to do that and the projects won't be sustainable, so we need to figure out ways to incentivize development of these new materials, their use of the materials, and ensure that they do get into our projects.

Senator Whitehouse. And out-of-date engineering manuals and other guidance create a lag that inhibits the implementation of projects that include those new materials, correct?

Ms. Swallow. It is natural that the standards and guidelines do have a bit of a lag, but the intention there is to ensure that we are protecting public safety and not implementing them too soon, so we need to make sure that we both incentivize the use of them, but also continue to ensure that they are being safely used.

Senator Whitehouse. Well, I appreciate that.

In Rhode Island we have a lot of small communities, and I see Mr. Bullock here representing another coastal State with small communities. I have noted that the Army Corps' Flood and Coastal Storm Damage Reduction Account in the fiscal year 2019 budget is funded at \$1.49 billion. Of that \$1.49 billion, we have found only \$40 million marked for coastal projects. Even

in the Flood and Coastal Storm Damage Reduction Account, the ratio of upland and inland projects to coastal projects appears to be about 37:1, which does not seem appropriate under virtually any circumstances, but particularly not appropriate when we look at the type of coastal flooding, coastal storm, lousy FEMA mapping, and other challenges that small communities face.

What is your comment on that?

Mr. Bullock. Senator, I am going to not tell you how to do your job, but I am going to yield to my fellow Delawarean to my left who is the expert in this.

Senator Whitehouse. I accept that referral.

[Laughter.]

Senator Whitehouse. Mr. Pratt?

Mr. Pratt. And I am now retired from the State of Delaware, but 38 years in the business, and that is why my Secretary of State is referring over to me.

From Delaware's standpoint and from the national standpoint, we certainly see the problem with that discrepancy that small investment made to the coastline. I think to answer that, I would point out something I have said to this Committee in the past. For point of illustration, how far off we are in the investment, and I use the fact that we are depending, in my mind, anyway, we are depending too much anymore on supplementals

to fund coastal restoration work. We are responding, and I certainly see a number of Senators --

Senator Whitehouse. So your recommendation would be that we need to make a stronger focus on coastal restoration work right into the WRDA program?

Mr. Pratt. Sixty-five billion dollars was spent for Hurricane Sandy supplemental, \$65 billion. And of that, let's say \$20 billion of that was probably very much directly coastal related in the affected States. We take that number and we say \$20 billion over one storm and maybe 25 percent of the coasts of the United States. If we had spent that money for 20 years over the entire Nation, that is \$1 billion investment a year to avoid the damages and to avoid the suffering that occurred before we had to pay that cost of recovery.

Senator Whitehouse. In my final seconds, let me make the point that Rhode Island has not applied under the WIFIA program for some time now. One of the reasons is that the Rhode Island infrastructure bank is actually easier to work with; doesn't require such a paperwork load upfront and that, for smaller projects and for smaller communities, the WIFIA project really is not all that useful. So, I hope that as we continue to work our way forward, we can find ways to make the WIFIA program more amenable to smaller projects and smaller communities, because a great number of our coastal communities are smaller communities;

we are not all New York City.

Thank you.

[Laughter.]

Senator Barrasso. Thank you, Senator Whitehouse.

Senator Gillibrand. So sad for you.

[Laughter.]

Senator Barrasso. Senator Capito.

Senator Capito. Thank you, Mr. Chairman.

Thank all of you for being here.

And thank you and the Ranking Member for working so well together on this.

This is really a question for anybody who wants to handle this on the panel. For many of our constituents, how the Corps actually deploys their funds and rehabilitates our waterway infrastructure is confusing and ultimately a disappointing maze. First you have a study that is authorized by Congress; then the Corps has to complete the study, often soliciting funds from their local stakeholders; then Congress authorizes the study and appropriates funds to the Corps for construction or operation and maintenance. Still, sometimes after all of this has occurred, nothing really happens; and usually the refrain from the Corps is that the project failed to pass muster under the OMB's benefit-cost ratio. That standard is \$2.50 in benefits for every \$1.00 in Federal investment, with a discount rate of 7

percent for future or long-term benefits.

Projects are having trouble meeting these threshold, and we are left to explain to our constituents that their project, no matter how important to the local community, can't proceed, despite all of the Federal reviews.

So, I was wondering, do any of you have experiences that you would like to share in which otherwise worthwhile projects have been put on indefinite hold because of this benefit-cost ratio issue?

Okay, so maybe that is not a problem. Yes, sir, Mr. Riley.

Mr. Riley. Senator Capito, I can only do perspective from some of the projects in my neighborhood. When you use that standard without looking out way into the future, there is much of the projects in our region that would have never been built at that time, so, yes, that is a huge one. I can tell you from personal experience, when you get the Army Corps of Engineers put their foot down on a project you have been working on for 10 years or longer, maybe decades beyond that, that will crush you right there in a local-led effort.

Senator Capito. Right. Well, I think this bill tries to help answer that question by letting districts regionalize their projects so they become larger.

Mr. Pratt.

Mr. Pratt. Just another perspective from the State of

Delaware. I think there are 19 or 20 Federally authorized navigation channels in the State, only 3 of which are being maintained. It is a different metric for determining how waterways are maintained, which ones are actually supported through dredging and surveying work. We have had channel markers removed within our State because the Coast Guard can't verify the port channel is there anymore. It is a different metric, but it gets to the same point, that the rationalization of what projects we do has to be examined. I think this is why the National Academy Study is so important; it should get into that way in which the Corps does its business, see how we can modernize it, see how we can bring it forward and better serve the Nation.

Senator Capito. Good. All right, thank you.

Mr. Sternberg, in your testimony you highlighted, in Section 5010, which contains the text of the Water Workforce Investment bill which Senator Booker and I have worked on. This provision establishes an EPA grant program to spur education, job training, and apprenticeship for careers.

You mentioned this in your opening statement, but for a rural State like West Virginia, this is a huge challenge. Many of our folks that have been maintaining our water systems were under the old system and are retiring, and trying to find new and younger talent has been an issue for us. Could you speak to

that, please?

Mr. Sternberg. Yes. Thank you, Senator. National Rural Water actually started working with the Workforce Development Department of Labor on apprenticeships for the water industry, and this last year we just kicked it off and each State is working through that process, but it is the same problem in our State, aging workforce. We have an aging infrastructure for utilities, but we also have an aging workforce as far as knowledgeable individuals that have run water and wastewater systems for years, and getting new, young blood to come in to the industry.

One of the reasons I still believe is the pay scale is not where it should be. It is the most important thing we do every day. Everybody has to have good, safe drinking water. Everybody has to have a process for disposal of your stuff. I mean, it does not make sense to me. But I think with this it ignites and starts the process, and with this in the bill I think it is an opportunity for every State to start expanding out and going into the workforce and bringing new people in.

Senator Capito. Well, I have a small community in West Virginia where the person who was charged with keeping the water system running and providing the clean drinking water also was the person who checked the parking meters and, you know, took the notes at the city council meeting.

Mr. Sternberg. The dog catcher and everything.

Senator Capito. The dog catcher and everything. And the way the requirements that we have now, you can't do that; you have to have the professionalization that goes along with this, which can be very complicated, so thank you very much.

Mr. Sternberg. Thank you for the addition in this bill.

Senator Capito. Thank you.

Senator Barrasso. Thank you, Senator Capito.

Senator Gillibrand.

Senator Gillibrand. Thank you, Mr. Chairman and Mr. Ranking Member, for holding this hearing, and for your bipartisan leadership in drafting this bill, the America's Water Infrastructure Act of 2018.

New York, as you know, has a wide range of water resource needs. We are a Great Lakes State and a coastal State. We have hundreds of dams and levees that are critical to communities across the State which must be properly maintained to ensure those communities are protected from flooding, and we face the threat of aquatic invasive species that, if unchecked, decimate fisheries and result in major economic and environmental damage.

I am pleased that this bill includes a number of our very important priorities. This bill includes the Long Island Sound Restoration Stewardship Act, which reauthorizes and reforms Federal programs that are essential to reducing pollution and

protecting the Long Island Sound Watershed. It also authorizes the Great Lakes Coastal Resiliency Study to protect communities like those that are experiencing devastating flooding last summer along Lake Ontario. I am also grateful that the bill will utilize the study for Chautauqua Lake Project to protect communities in Westchester from flood risk.

With that, just a few questions.

For Anthony Pratt, I appreciate in your testimony you mentioned the Great Lake Coastal Resiliency Study, which is a priority of mine and something that is so important for communities across central and western New York. As you may be aware, last summer we experienced record flooding along the shorelines of Lake Ontario and the St. Lawrence River, resulting in a Federal disaster declaration due to the millions of dollars in damage of both property and infrastructure.

Can you speak a little more about why it is important to conduct comprehensive regional resiliency studies like the North Atlantic Study conducted after Superstorm Sandy?

Mr. Pratt. Yes, Senator. Thank you for that question; it is one that I mentioned briefly a few minutes ago that we support, ASBPA.

Looking at the Nation as a whole, we have a series of studies that are done, North Atlantic Study, South Atlantic Study. There are two coastal studies in the Gulf Coast, and now

the Great Lakes coming onboard, which brings us to a point where the Continental United States is going to have fairly comprehensive plans, without the West Coast engaged yet, on resiliency, and there are a number of forces at work for each one of those units or sections that is very unique.

But developing a strategic plan going forward so we can spend the money to mitigate prior to the disaster, save the supplemental dollars that are being spent at far to a greater rate, as you understand from the State of New York, \$65 billion spent for recovery from Hurricane Sandy. That was after the destruction of property, after the human suffering occurs. Let's avoid the human suffering, let's avoid the disruption; let's get out in front of it and invest in that infrastructure that is going to protect the infrastructure that is behind it, and I think the coastal infrastructure is very important in that role.

Senator Gillibrand. Do you see any projects the Corps could be looking at to improve the resiliency of coastal and Great Lake communities? And a follow-on, in your view, what are the barriers that hold the Army Corps back from investing more in natural infrastructure projects like wetlands restoration, and what more should Congress be doing to address those barriers?

Mr. Pratt. Well, I think this bill addresses that pretty

well. In looking at the full suite of benefits across business lines that accrue from the investment made, looking at green infrastructure and nature-based infrastructure. In the Great Lakes region there is a lot of bluff erosion because beaches at the bottom of the bluffs are eroding. Great Lakes levels fluctuate over time because of a difference in weather patterns.

There are a variety of different forces at work there, but, that said, if we can invest in green infrastructure to avoid the damages up front, that is good, and the suite of benefits that accrue, by enumerating the solutions that have multiple benefits, I think the benefit-cost analysis is the area where we are not doing a good job on the benefit side, what comes from that investment. There would be many more values achieved through the investment of nature-based protection than we are counting, and that is an important step forward.

Senator Gillibrand. Thank you, Mr. Pratt.

Ms. Swallow, addressing the massive backlog of dam and levee safety projects is another important priority. We have approximately 400 high hazard dams in New York. What are the consequences if we fail to take this problem seriously and allow aging dams and levees to continue to fall into disrepair, and how can the Corps provide better assistance to States and localities that are responsible for maintaining this infrastructure, but are faced with strained budgets and limited

funds?

Ms. Swallow. Senator Gillibrand, that is a great question. What are the consequences? The consequences are devastating if we fail to maintain our levees and our dams. The challenge with that is that we are not even aware of the full spectrum of levees that we have. We are underfunding our National Levee Safety program. We are only spending \$5 million to \$10 million a year, where it is authorized at \$79 million a year. And some of those authorized funds actually would go to the repair of those levees. So, first we have to identify their locations. Once we know their locations and their condition, then we can start to repair them.

In terms of high hazard dams, the number of high hazard dams is increasing annually as more and more people continue to move into areas that are protected by these dams. Roughly 17 percent of our 90,000 dams today are high hazard, and, should that dam fail, it will result in a loss of life, so the consequences are devastating.

Anything the Corps can do to help increase that investment in dams and levees, but, really, it ultimately comes down to ensuring that we are appropriating the funds that are already authorized and making sure that we get those funds to the projects.

Senator Gillibrand. Thank you.

Thank you, Mr. Chairman.

Senator Barrasso. Thank you very much, Senator Gillibrand.
Senator Inhofe.

Senator Inhofe. Thank you, Mr. Chairman.

I have three areas, as I listened to the opening statements and heard the responses to questions, that I think could use a little more elaboration.

Mr. Sternberg, I wanted to tell you you have a real champion of rural water in Senator Boozman. He is one that is always on that ball, and we agree with the problems. After all, Oklahoma and Arkansas are both rural areas. We are both impacted by how we do treat that.

What I would like to have you do is anything you want to add to how this bill is going to be helpful specifically to the rural areas, give you the chance now to elaborate on that, should you want to.

Mr. Sternberg. Thank you, Senator Inhofe. We appreciate all your work from Oklahoma for rural water. My counterpart, James Gammell talks about you all the time, so thank you for the opportunity to add some additional stuff.

My last comment on this bill would be, again, 14,500 wastewater systems throughout this Nation in every State represent 10,000 population and under. They are the ones that rely on rural water technical assistance in the field,

troubleshooting problems that they have because, again, they don't have the expertise as larger systems where they have --

Senator Inhofe. We are the resources. I know it is not any different in Arkansas than it is in Oklahoma and, when this hits them, they have no way of responding to it as it might in a major metropolitan area.

Mr. Sternberg. Exactly. So, the technical assistance funding for the clean water Circuit Riders is essential. It is essential. The Safe Drinking Water Act has the Circuit Rider technical assistance provision of \$12.7 million. That is the issue that I have; EPA is a stumbling block because of how they have appropriated that money and put it out.

Senator Inhofe. Okay. That is an excellent statement. I just want to make sure we had everything in the record that referred to that.

Mr. Sternberg. I have a letter that the Senators here sent to EPA requesting that they --

Senator Inhofe. I think it would be appropriate to ask unanimous consent that that letter be made a part of the record at this point.

Senator Barrasso. Without objection.

Mr. Sternberg. Thank you.

[The referenced information follows:]

Senator Inhofe. Ms. Swallow, really, 150,000 civil engineers? Did I hear you right?

Ms. Swallow. Yes.

Senator Inhofe. And you are in charge of all of them?

Ms. Swallow. I am not so sure I am in charge. I represent them.

Senator Inhofe. Well, in your statement, toward the latter part of your statement, you did address the SRF WIN Act, and I just want to remind everyone that not only myself, but also Chairman Barrasso is with Senator Boozman on this legislation.

Now, from your very unique position, is there anything you have not said concerning that that you would like to get in the record? You are the head of the civil engineers. What do you think?

Ms. Swallow. Thank you for the opportunity. We are really excited that this bill is being advanced in a bipartisan manner. We are excited to hear that you are working on the SRF WIN Act. Ultimately, when we talk about our infrastructure, anything we can do to increase the investment, that is the biggest challenge, is increasing the investment. We are woefully underfunding it.

Senator Inhofe. Okay. Well, I appreciate that very much.

Mr. Riley, you responded to Chairman Barrasso's statement

when we talked about local participation. You know, there are some people who really don't think a good decision is made unless it is made in Washington, and there are those of us who believe, who have served in the private sector, as well as the public sector, at local levels, we don't agree with that.

In your testimony you say the best decisions on water issues happen at the State and local level, and I would agree with that. The decisions made in Montana are just not the same as they would be made in my State of Oklahoma, in eastern Oklahoma versus western Oklahoma. That is why local decisions in control are so important.

Is there anything you would like to expand on the advantages of the local participation that you have not yet?

Mr. Riley. Thank you, Senator Inhofe. I guess the proof is in the pudding, in fact, the local effort. That means that we have spent our money before we come to see you, and it is our idea; and I believe that sells it in itself, that we have come to you, we have spent a lot of money. In our State I have worked on rural water Tribal-State irrigation projects. We are coming to you, that means that it has already been originated on our side of the ball, looking for help from you.

Senator Inhofe. That is a great reminder, and we will all remember that. Thank you very much.

And thank you, Mr. Chairman.

Senator Barrasso. Thank you, Senator Inhofe.

Senator Carper.

Senator Carper. Mr. Chairman, I received a number of letters of support from various outside shareholders and stakeholders. I would like to enter these into the record. They include the League of Conservation Voters, National Wildlife Federation, Audubon, American Rivers, American Shore and Beach Preservation Association, National Association of Realtors, the Environmental Defense Fund.

I would just ask unanimous consent that those letters of support be entered into the record.

Senator Barrasso. Without objection.

Senator Carper. Thank you.

[The referenced information follows:]

Senator Carper. I just want to say this has been a great hearing. I mentioned to the Chairman. On issues, and usually water resources issues, we are very good at working together, and frankly on other issues as well. Some of our issues that we discuss are more contentious, as you might imagine, but this is just a great example of where we can, I think, make progress by setting aside our differences and focusing on what Mike Enzi, the Senator from Wyoming likes to say, and the Chairman has mentioned this before, but Mike Enzi likes to say the reason why he and Ted Kennedy used to get along so well on issues before the Health, Education, Labor, and Pensions Commission when Ted Kennedy was senior Democrat, and Mike Enzi, a very conservative Republican, was the Republican leader on the Committee, I used to say to Mike Enzi how do you guys get so much done, and he once said to me, he said, Ted and I agree on about 80 percent of the stuff and we disagree on about 20 percent of the stuff. He said, what we do in the Health, Education, Labor, and Pension Committee is we focus on the 80 percent where we agree and we set aside that 20 percent to another day.

And I think what we are doing today is focusing on the 80 percent, and you are helping us in this and we are deeply grateful.

I want to ask the first question, if I could, of Secretary

Bullock, if I could, with respect to ports and then the Corps' budget in that regard. By 2020, I am told that the total volume of cargo shipped by water into and out of this Country is expected to be double that of 2001. Think about that. By 2020, expect the cargo shipped into our Country and out of our Country to double by 2021.

As the ships continue to get bigger, we see more congestion at the docks and we see larger ships require deeper navigation channels. We are deepening right now the channel that goes from the Atlantic Ocean through the Delaware Bay, Delaware River up into New Jersey and Pennsylvania. Only a few ports have that kind of deep navigational channels.

How do we ensure that ports can effectively distribute and receive goods as ships continue to grow in size? How do we ensure that ports can effectively distribute and receive goods as ships continue to grow in size? Secretary Bullock, in your opinion, how does the America's Water Infrastructure Act of 2018 bill before us support our ports' needs; not just in Delaware, but beyond, well beyond? Thank you.

Mr. Bullock. I appreciate the question, Senator. So, I would start out by sort of reiterating what you said earlier about partnerships and figuring out how to work together on the 80 percent where you can agree, because I think that is the key to success here.

We know that our need for port capacity is going to continue to grow, and probably grow, hopefully grow significantly over the course of the next 10 or 20 years. As has been said here today, the role of the Corps of Engineers in all that is just critical.

I will take the example that we are involved in right now as indicative of that. Even before we decided that we were going to try to build a new port, and we are trying to build, as you know, a new facility not too far from where you and I live on the Delaware River, and it is about a \$600 million to \$750 million project to build this new terminal. Even before we made the full decision that we were going to go ahead with that, we had to start working with the Corps of Engineers to determine whether or not the site was going to be suitable for that. And even before we bought the piece of property, in fact, we had environmental studies underway to determine whether the property was suitable for dredging, for example.

And now that we are a couple years into it, we are already one year into our partnership with the Corps of Engineers in the dredging piece of that, which is supposed to be, I think a two- or three-year process all told, and who knows what happens in between.

So, as has been said several times by this panel in a number of different contexts, a well-supported, well-funded,

well-devised plan by the Corps of Engineers is just absolutely critical to us being successful.

If we can get that port up and running by 2024, 2025, that is a pretty good accomplishment, right, to build a new port. It is also six or seven years ago, which strikes many people as being a long time, but that is how long it takes to do all of this right now.

To the extent that we get a well-resourced Corps of Engineers, we can minimize that amount of time, at least from the regulatory perspective, in getting the approvals that we need, so that is critical.

To the other part of your question, about the ships getting larger and the changing nature of the businesses as it relates to that, we know that ships coming up the Delaware River are only going to be so large, and, because of the deepening of the channel, we can now handle larger ships. We can't handle the largest ships, but it is a sort of spoke-and-wheel business practice on the part of most of our customers, anyway, so that is not going to hold us back.

Making sure that channel deepening is completed, making sure that it is then maintained after it is completed, making sure that we accommodate things like where we put dredge spoils, for example, which is going to be a very big issue for us, maybe not in the short-term, but certainly is going to be in the long-

term, these are the things that will allow us to maintain our commercial development and will make us successful in the longer term.

So, the overall message, I think, from me, and I heard it from others, I know we all have our budget constraints, we certainly do in the State of Delaware, but this is not a place to cheat. This is not a place to cheat the budget. This is a place where not only will you facilitate things like what we are doing in Delaware, but you will be doing the exact same thing around the Country; you will grow jobs, you will grow the kinds of jobs that we need to be developing in our Country right now, blue collar jobs that we so desperately need to increase, and you are going to promote more economic development in our Country.

Senator Carper. Thank you for an excellent and thoughtful response.

Mr. Chairman, I have another question to ask of Tony, but let me --

Senator Barrasso. Please, go right ahead.

Senator Carper. Are you sure?

President Pratt, as the President of the American Shore and Beach Preservation Association with a long, rich history with coastal issues, and as a former non-Federal project manager for the State of Delaware, you know the importance of pairing

natural infrastructure improvements with engineered flood control solutions and how they can complement each other. How can gray and green infrastructure work together? How can gray and green infrastructure work together? In what ways does the bill before us actually support that hope, that aspiration? Please.

Mr. Pratt. Thank you. Good question. Gray infrastructure at the coastline refers to the kind of practices that were done in the 1930s, 1940s, 1950s, perhaps, where seawalls were built, bulkheads were constructed, breakwaters were constructed and became a way of trying to tame the forces of nature that were impacting the coasts.

Over time, we began to look at it from a broader perspective. If you stop and think just for a minute what attracts so many Americans to the coasts, it is not a wall and a sea on the other side of it; it is a beach, it is a dune, it is a wetland, and those beaches, dunes, wetlands, the vistas that they provide for people, the recreational benefits, but also the protection of estuaries, which is vitally important. We have seen the collapse of protection in the Delta in Louisiana, for instance. The Chandeleur Islands and their collapse created devastation of wetlands, losses of wetlands, more exposure of New Orleans to coastal storms.

So, looking at systems that bring back those natural

features is why we went to the coast; we didn't congregate at the coast because it is a solid wall and then there is sea on the other side. Those amenities, those resource values are very important to people, so bringing those back into the fold, they can perform very well. We think in our minds about the Dutch and the way they protect country, which is below sea level. I used to think there were probably giant walls everywhere. I have seen photographs, I have not been to Holland to examine them, but I have seen photographs, and their protection, their dikes, as they are called, are dunes and beaches, massive dunes and beaches that are providing recreational amenities, natural resource amenities, but also do the job of keeping the sea back.

So, combining the two I think is a way forward that accomplishes many goals, and I think the National Academy Study and the GAO study looking at the benefit-cost analysis should pick up on some of those values that come from that investment.

Senator Carper. Thank you.

Would you just mention what is going on at the Prime Hook National Wildlife Refuge with respect to transforming a freshwater marsh into a saltwater marsh in order to sort of raise it up and really to save it and preserve it?

Mr. Pratt. Certainly. The National Wildlife Refuge at Prime Hook is one that is a Delaware Bay-fronting resource. For a number of years, because of mismanagement of the streams and

creeks that went through that wetland system back in the early part of the last century, Phragmites took over, dominated the coastline. There was a beach and there were seas of Phragmites, the tall reed that we see all over Delaware.

To reverse that non-productive land, the Department of Interior, U.S. Fish and Wildlife Service, created impounded freshwater wetlands back in the 1960s and 1970s. Those provided tremendous benefit to migratory waterfowl for quite a number of years, until the beach and dune system broke down and seawater got into that system and create a tidal anomaly that didn't allow those wetlands to flow out.

Bottom line is that, through Hurricane Sandy relief, \$38 million was appropriated to the Department of Interior to rebuild the beach and dune, and to create a wetland system that was based on tides again. Again, entirely valued by benefit-cost analysis was strictly on the environmental improvements that would come and the benefit would provide to migratory waterfowl, which is the mission of the U.S. Fish and Wildlife Service.

So, the values are there. They are very high values, and Department of Interior looked at it closely and said, yes, it is very much in our favor to go ahead and make that investment, \$38 million to restore a complete system to its original natural function.

Senator Carper. Thank you.

Mr. Chairman, let me go back, but if I have a question I would like to ask later on, a very short question of Ms. Swallow.

Senator Barrasso. No, please go on.

Senator Carper. I was sitting next to Tom Udall in a meeting earlier today, and I am sure he would want to convey his warmest regards and his thanks for all the help you provided when you were a member of his staff.

Ms. Swallow, do you believe that the Corps' current budgetary funding is sufficient to accomplish its mission for inland waterways, and how does this bill assist on this front?

Ms. Swallow. Thank you for the question, Senator Carper. Is the budget sufficient? No, it is not. We have infrastructure on our inland waterway systems that dates back not just decades, but in some cases, as I mentioned earlier, a century; and that infrastructure is struggling to meet the needs of our Nation.

If we don't fully restore our inland waterway system, we will see the impact of that product, instead of being shipped on the inland waterways, it will hit the rest of our surface transportation system and cost us a lot more not just in terms of the cost for the producers who are trying to get their products to market, but will cost every single American citizen

as we buy that product, so we need to find a way to further improve the investment in our inland waterway network.

One of the things that we really like about this bill is that it enables the Corps to charge and collect fees on their facilities that they can then use to leverage the WIFIA program. We will not attract private investment unless they know that they can see a return on their investment, so that is one of the steps that we are excited to see in this bill, is it allows the Corps to start collecting and retaining fees for operations and maintenance.

We, of course, like that the bill is reauthorizing WIFIA and the dam and levee safety programs as well.

Senator Carper. Thanks.

When we say dam safety program, I always think is that with the "n".

[Laughter.]

Senator Carper. We will note here for the record today it is just d-a-m.

This has been great. Mr. Chairman, thank you again for pulling this all together and for our witnesses that are here from Delaware and other places far and wide.

Again, I just want to say to our staffs, deeply grateful for the great work that is being done not in the light of day so much, certainly not here under these lights, but very good work

is being done, and we know we have a lot more that needs to be done, so we look forward to that journey. Thanks so much.

Senator Barrasso. Well, thank you very much, Senator Carper. You were kind enough to mention so many of the staff. I think Richard's name was left out, so, Richard, we apologize, but are grateful for your great work.

Senator Carper. I would like to say something about Richard.

[Laughter.]

Senator Barrasso. If there are no more questions, members may submit follow-up questions for the record, so the hearing record is going to be open for two weeks.

I want to thank all of the witnesses. Thanks so much for your insight, for your time, for your testimony.

Senator Carper?

Senator Carper. Just an observation. I mentioned earlier that Secretary Bullock was once my chief of staff when I was governor, and later for a while as a United States Senator, and he was succeeded as chief of staff by Jonathan Jones, who is sitting immediately behind him. And immediately behind Jonathan Jones is a fellow who looks very much like Alan Hoffman, who used to be chief of staff to Joe Biden as Senator and as Vice President. I don't know who the rest of you are.

[Laughter.]

Senator Barrasso. Would people like to stand and introduce themselves? We can work our way through the crowd.

Senator Carper. This is one heck of a Delaware lineup right here. Thank you.

Senator Barrasso. Thank you, Senator Carper.

Thanks to each and every one of you who have attended, as well as those who have participated by testifying.

With that, the hearing is adjourned.

[Whereupon, at 11:45 a.m. the committee was adjourned.]