

**AMERICA'S WATER INFRASTRUCTURE NEEDS
AND CHALLENGES: FEDERAL PANEL**

HEARING
BEFORE THE
COMMITTEE ON
ENVIRONMENT AND PUBLIC WORKS
UNITED STATES SENATE
ONE HUNDRED FIFTEENTH CONGRESS

SECOND SESSION

JANUARY 17, 2018

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COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS

ONE HUNDRED FIFTEENTH CONGRESS
SECOND SESSION

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AMERICA'S WATER INFRASTRUCTURE NEEDS AND CHALLENGES: FEDERAL PANEL

WEDNESDAY, JANUARY 17, 2018

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

The committee met, pursuant to notice, at 10:04 a.m. in room 406, Dirksen Senate Office Building, Hon. John Barrasso (chairman of the committee) presiding.

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

OPENING STATEMENT OF HON. JOHN BARRASSO, U.S. SENATOR FROM THE STATE OF WYOMING

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

Today we are holding our second hearing in as many weeks highlighting the importance of water infrastructure and of passing a new Water Resource Development Act, or WRDA, in 2018. WRDA is a bill that authorizes projects and funding for the Army Corps of Engineers Civil Works Program.

Last week, the Committee heard testimony from a variety of private sector stakeholders representing inland waterways, ports, rural areas, as well as those promoting ecosystem restoration projects. Their testimony provided further evidence that it is critical that Congress keep with the tradition of biennial WRDA consideration and passing such legislation this year.

Today we will hear from the Federal officials on how we can best address water infrastructure needs and challenges in any WRDA legislation. The Senate Environment and Public Works Committee has oversight over much of the Corps' mission in water infrastructure, including locks, dams, flood migration, inland waterways, and ports. This hearing provides us an opportunity to hear from the Army and the Corps on what they perceive as the best solutions to the needs and challenges facing important water infrastructure projects spread all across America.

As I said at last week's hearing, unlike other contentious issues, historically, Republican and Democratic members of this Committee have been able to work together to pass WRDA legislation. I also noted last week that this legislation impacts every member of this Committee's diverse constituencies.

To illustrate, Congress must prioritize the prevention of flooding and the modernization of our Nation's levees, which protect peo-

ple's lives and their livelihoods across the Country. We can't allow a repeat of the circumstances that led to the flooding in Worland, Wyoming and the evacuation of 80 citizens when the Big Horn River flooded due to ice jams.

We must also not lose sight of western States' water supply and consumption needs. My constituents in Wyoming, as well as others, are well too familiar with the challenges associated with providing long-term water supply and storage.

Let's not forget that sediment buildups continue to decrease the storage capacity of western reservoirs. An adequate and reliable water supply is necessary if western and rural communities and their economies are going to continue growing.

The Corps and the Bureau of Reclamation should continue sharing related information and work together in the hopes of solving these water supply problems.

To reiterate, we all have an important interest in maintaining the Nation's water infrastructure. Let us commit ourselves and our resources toward legislating a bipartisan WRDA bill in 2018. Too much is at risk for us to abdicate this responsibility of ensuring the public's safety, as well as ensuring the flow of goods, commodities, and raw materials through our inland waterways and ports.

I will now turn to the Ranking Member for his testimony. Senator Carper.

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

Senator CARPER. Thanks, Mr. Chairman.

Gentlemen, it is great to see you both and we thank you. You will be working extra hard until we get Val confirmed to help you out a little bit. But thank you so much for being here and for your good work and your service.

This is the second of two hearings, as we know, and one of the great things about hearings on WRDA is this is something we can work on together. It is not so much a red State, blue State, it is not so much Democrat or Republican; it is just important stuff. And we realize that and we have a good history of that thanks to Senator Inhofe and Barbara Boxer and others before them.

When I first heard the term WRDA, I said, what is that? I am not a big fan of acronyms. I like this one. But WRDA is another one of those funny sounding acronyms that we all use too often in Washington. While it might sound funny, the truth is what is incorporated into a WRDA bill has a huge effect, oversized effect on the daily lives of a lot of us and our constituents.

For instance, Members of Congress, perhaps like those of us here today, talk about critical dredging. That may sound boring, but if a ship is trying to get into this Country carrying fruit, carrying vegetables, carrying meat, carrying seafood, a number of other foodstuffs, and our ports are unable to be reachable, that means prices at the grocery store might go up. And if prices at the grocery store rise, families who might already be struggling to put food on their table will have to figure out how to stretch their budget just a little bit further.

For most of all people among us, that ship being able to reach its port isn't just a policy decision here in Washington, which is

what we focus more on, but could be the difference between a hungry child or a healthier child.

Last week we discussed how more than 99 percent of the U.S. overseas trade volume moves through coastal channels that the Army Corps of Engineers maintains. I think that is amazing. I heard that number and I was amazed. Think about it, 99 percent. Additionally, the Corps' inland waterways and locks form a freight network, think of it as a water highway, connecting waterways and ports, and providing direct access to international markets. They also serve as critical infrastructure for the U.S. military, as we know.

But the Corps does more than just conduct navigation projects. The agency is also involved in flood risk management, environmental restoration, among others. Navigation, however, makes up the most significant portion of the Corps' authorized work. Unless the Country experiences flood events, navigation work is the most visible activity in the Corps' portfolio on a day-to-day basis.

Unfortunately, as we all know, Federal funding for new project construction and major rehabilitation has steadily declined. Corps activities have shifted to operations, to maintenance, and rehabilitation of existing infrastructure, while a backlog of deferred maintenance has continued to grow ever since. As a result, much of the Corps' infrastructure is now exceeding its useful lifespan.

Our waterways are the backbone of our economy, and the Corps is often an invisible agency keeping much of it together with limited resources. New estimates that my staff received after last week's hearing reveal that the Corps' overall construction backlog is now in the neighborhood of \$96 billion worth of projects. If provided, this money would only address current needs; it does not include any of the funds that are needed for future investments.

We had a chart we used last week from the American Association of Port Authorities, a beautiful chart, but a little busy, a little busy. This one is a little less busy. But it illustrates, I think, very well what I am about to say, and that is, according to the American Association of Port Authorities, in port infrastructure alone, our Country is expected to need over \$65 billion in investment over the next decade to ensure a nurturing environment for U.S. job creation and economic growth.

As we heard last week, the American Society of Civil Engineers infrastructure report card tells an even more unsettling story. With dams, levees, and inland waterways receiving a grade of D, as in deplorable, their report card estimates that \$162 billion of investment is needed in these types of infrastructure, 162.

As I said last week, with an annual budget that hovers around \$4.6 billion, the Corps has a seemingly impossible math problem to overcome. Or maybe we have a seemingly impossible problem to overcome, and that is actually being willing to spend money for the things that we need, actually truly need. I like to say if a thing is worth having, they are worth paying for.

This Committee has worked hard on a bipartisan basis in recent years to return to the practice of developing WRDA bills in a timely manner. I am encouraged that we will continue that tradition in 2018 so that the ports, channels, waterways, and flood management initiatives on which so many States, businesses, and Ameri-

cans depend can keep moving ever more goods and people without interruption.

I look forward to hearing from our witnesses, both of you. It is great to see you again. I look forward to hear your plan to overcome the more than \$100 billion problem and enable us to invest in our future. It will be interesting to see how you do it on \$4.5 billion a year.

We must work in a bipartisan, bicameral fashion with the Administration to really address these concerns, build a consensus on a path forward in a smart, cost-efficient way. I would conclude by repeating what I said before: if things are worth having, they are worth paying for. This is worth having.

Thank you.

Senator BARRASSO. Thank you, Senator Carper.

In just a moment we will hear from our two witnesses: Ryan Fisher, the Principal Deputy Assistant Secretary of the Army for Civil Works and Acting Assistant Secretary of the Army for the United States Department of Army, as well as Lieutenant General Todd Semonite, who is the Chief of Engineers and Commanding General of the U.S. Army Corps of Engineers.

Before we get to the opening statements, I would like to first welcome Mr. Fisher, who recently took over as the Acting Assistant Secretary of the Army for Civil Works in November 2017. While it is critical that we confirm a permanent Assistant Secretary as soon as possible, there is important work that needs to be done in the meantime, and we appreciate you filling in today and testifying before this Committee.

I would also like to welcome back to the Committee Lieutenant General Semonite, who last testified before this Committee at a Transportation Infrastructure Subcommittee hearing last May regarding the economic benefits that water resources have for local communities and for State economies, as well as the national economy.

So, I welcome you both here today and remind you that the full version of your written testimony will be made part of the official hearing record. Please keep your statements to 5 minutes so that we may have time for questions. Look forward to hearing from you.

Senator CARPER. Mr. Chairman, could I just say one thing?

Senator BARRASSO. Senator Carper.

Senator CARPER. The Finance Committee is meeting right now. We are having a markup on a couple of key nominees, and I am going to have to slip out probably close to 10:30. I will be back, but I don't want to be disrespectful, it is just I wear a couple of different hats around here, like you do. Thanks so much.

Senator INHOFE. Mr. Chairman, let me also say that there are nine members of this Committee that are also on the Commerce Committee, and it seems like we are always meeting at the same time, so you are going to see us disappearing and reappearing during the course of this hearing.

Senator BARRASSO. Mr. Fisher, please proceed.

**STATEMENT OF RYAN FISHER, PRINCIPAL DEPUTY ASSISTANT
SECRETARY OF THE ARMY (CIVIL WORKS) AND ACTING AS-
SISTANT SECRETARY OF THE ARMY (CIVIL WORK), UNITED
STATES DEPARTMENT OF THE ARMY**

Mr. FISHER. Thank you. Mr. Chairman, Ranking Member Carper, members of the Committee, I am honored to testify before you today on the water infrastructure needs and challenges facing the Nation. I am joined today by Lieutenant General Todd Semonite, Chief of Engineers. He will also provide a short opening statement.

As the Chairman mentioned, I was sworn in as the Principal Deputy Assistant Secretary of the Army for Civil Works in November and am currently serving as the Acting Assistant Secretary as well, and I very much look forward to working with this Committee as you move toward a possible WRDA bill.

The Corps of Engineers has played a significant role in the development of the Nation's water resources. The Civil Works program of the Corps has three main missions: commercial navigation, flood and storm damage reduction, and aquatic ecosystem restoration. In this regard, the Corps work with our Nation's coastal ports to maintain their channels, operates and maintains the inland waterways, supports State and local flood risk reduction efforts, works to restore significant aquatic ecosystems, and operates and maintains multipurpose dams and the reservoirs that are behind those. Additionally, the Corps is one of the top Federal providers of recreation in this Country.

The Corps constructed much of its civil works infrastructure in the first half of the 20th century, so, as you can imagine, the Corps dedicates a significant amount of its resources to maintain those key features of this infrastructure.

My office is working with the Administration as it continues to work on policy and administrative changes that can improve infrastructure delivery to the Nation, and Lieutenant General Semonite can elaborate a few examples where the Corps is making improvements within its regulatory program, as well as how it assists others in granting permission to modify existing civil works projects.

The way that we use our water resources can affect the Nation's economy, its environment, and public safety. The Army and the Corps stand ready to help in addressing the water resource challenges of the 21st century, and I look forward to working with you on this very important issue, and again I thank you for the opportunity to appear here and testify today. Thank you.

[The prepared statement of Mr. Fisher follows:]

DEPARTMENT OF THE ARMY

COMPLETE STATEMENT OF

THE HONORABLE RYAN A. FISHER

**PRINCIPAL DEPUTY ASSISTANT SECRETARY OF THE ARMY (CIVIL
WORKS)**

and

ACTING ASSISTANT SECRETARY OF THE ARMY (CIVIL WORKS)

BEFORE

COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS

UNITED STATES SENATE

ON

America's Water Infrastructure Needs and Challenges – Federal Panel

January 17, 2018

Mr. Chairman and Members of the Committee:

I am honored to testify before you today on the water infrastructure needs and challenges for the Nation. I am joined today by Lieutenant General Todd Semonite, Chief of Engineers. I was recently sworn in as the Principal Deputy Assistant Secretary of the Army for Civil Works and am also serving as the Acting Assistant Secretary of the Army for Civil Works.

The U.S. Army Corps of Engineers (Corps) has played a significant role in the development of the Nation's water resources. The Civil Works program of the Corps has three main missions: commercial navigation, flood and storm damage reduction, and aquatic ecosystem restoration. In this regard, the Corps works with our Nation's coastal ports to maintain their channels, operates and maintains the inland waterways, supports State and local flood risk management activities, works to restore significant aquatic ecosystems, and operates and maintains multipurpose dams, as well as the reservoirs behind them. There are about 250 million day-visits a year for recreation at Corps lands and reservoirs, making the Corps one of the top Federal recreation providers.

The infrastructure that the Corps maintains includes 13,000 miles of coastal navigation channels (including the channels of the Great Lakes), 12,000 miles of inland waterways, 715 dams, 241 locks at 195 navigation sites, 14,700 miles of levees, and hydropower plants at 75 locations with 353 generating units. These projects help provide risk reduction from flooding in our river valleys and along our coasts, facilitate the movement of approximately two billion tons of waterborne commerce, and provide up to 24 percent of the Nation's hydropower.

The Corps constructed much of this infrastructure in the first half of the twentieth century. The Corps dedicates a significant amount of its resources to maintain the key features of this infrastructure.

The Corps continues to work on policy and administrative changes that can improve infrastructure delivery. More specifically, we are looking internally at our organizations, authorities, policies, regulations and procedures in order to identify opportunities for increased efficiency and effectiveness. This will include efforts to reduce redundancy and delegate authority for decision making to the most practical and appropriate level.

For example, Section 14 of the Rivers and Harbors Act of 1899, as amended, and codified in 33 USC 408 (Section 408) provides that the Secretary of the Army may, upon the recommendation of the Chief of Engineers, grant permission to other entities for the permanent or temporary alteration or use of any Corps Civil Works project. The Corps has implemented the following improvements to the Section 408 review process: delegation of Section 408 decisions to the lowest level possible (resulting in more than 95% of Section 408 decisions being made at the Corps district level) and further clarifying when Section 408 permission is required, when Section 408 permission is not

required, and when the requirements of Section 408 may be met by another Corps process and/or authority (resulting in the reduction of redundancies).

Similarly, the Corps continues to make significant progress in the Regulatory program. Section 1134 of the WIIN 2016 amended Section 2040 of the Water Resources Development Act of 2007 and directed the Corps to research, develop, and implement an electronic system to allow for the electronic preparation and submission of applications for permits and requests for jurisdictional determinations. Currently the Corps accepts electronic submission of applications or jurisdictional determination requests via email and the application form is a fillable PDF available on Corps District websites. The information received helps the Corps track the number and type of applications, as well as status and completion of reviews. The Corps will continue to explore if additional automation advances could make the process more streamlined.

The Corps focuses on work that provides the highest economic, environmental, and safety returns to the Nation. The Corps also operates and maintains water resources infrastructure that may no longer meet its authorized purposes or for which the needs of the Nation have changed. As such, the Corps is conducting studies – there are currently five ongoing studies - to ascertain the viability of deauthorizing projects and removing them from the Corps inventory. Section 216 of the Flood Control Act of 1970 allows the Corps to study completed projects or their operation when found advisable due to significantly changed physical or economic conditions.

The Corps is working to complete implementation guidance for both WRRDA 2014 and WRDA 2016. For WRRDA 2014, the Corps has issued guidance for 198 provisions, which represents 98% of the 203 provisions that required guidance. Several provisions in WRRDA 2014 were amended in WRDA 2016; the implementation of these provisions has been integrated. For WRDA 2016, the Corps has completed guidance for 176 provisions, which represents 85% of the 207 provisions that required guidance. You have both my commitment and that of LTG Semonite to complete implementation guidance for the remaining provisions as soon as possible.

The way that we use our water resources can affect the Nation's economy, its environment, and public safety. The Corps stands ready to help in addressing the water resources challenges of the 21st Century. We look forward to working with this Committee on this very important issue.

Thank you, Mr. Chairman and Members of Committee. This concludes my statement. I look forward to answering any questions you or other Members of the Committee may have.

Senate Committee on Environment and Public Works
Hearing entitled, "America's Water Infrastructure Needs and Challenges: Federal Panel."
January 17, 2018
Question for the Record for The Honorable Ryan Fisher

Chairman Barrasso:

1. Are there any additional Administration proposals related to water infrastructure that would be helpful to include in a potential Water Resources Development Act that you are able to share with this Committee?

Answer: The President's infrastructure legislative principles were publicly released on February 12, 2018. The legislative principles directly applicable to the Corps' Civil Works responsibilities fall within six general areas:

- (1) **Water Resources Infrastructure.** These principles would remove barriers and provide new authorities to expedite the delivery of infrastructure projects through a variety of mechanisms focused on revenue generation, streamlining project delivery, and innovative acquisition approaches.
- (2) **Inland Waterways.** The combination of new and existing revenue streams combined with non-federal partnerships would enable greater efficiencies and innovations for our nation's inland waterways.
- (3) **Incentives.** Incentives in the form of grants to non-federal entities are intended to encourage innovation, accelerate project delivery, and increase State, local, and private participation.
- (4) **Water Infrastructure Finance and Innovation Act (WIFIA).** Incentives in the form of low-cost loans are also intended to encourage innovation, accelerate project delivery, and increase state, local, and private participation. The legislative principles would expand the U.S. Environmental Protection Agency (EPA) authorization and budget authority to include non-Federal flood mitigation, navigation, and water supply projects.
- (5) **Environmental Reviews and Permitting.** In addition to broad environmental and permitting reforms, the legislative principles would further streamline the Corps' Section 404/10 and Section 408 programs to support timely decisions while maintaining environmental protections provided by law.
- (6) **Divestiture.** The infrastructure legislative principles authorize Federal divestiture of assets that would be better managed by State, local, or private entities. One of these assets is the Washington Aqueduct, which the Corps currently owns and operates.

The FY 2019 Budget and the Administration's infrastructure proposal recognize that the current paradigm for investing in water resources development is not sustainable and can deter rather than enable local communities, states, and the private sector from making important investments on their own, even when they are the primary beneficiaries. The Administration's infrastructure

proposal and other reforms in the Budget, such as reducing the Harbor Maintenance Tax, would facilitate local decision-making by those who know best what investments are needed and improve how we as a Nation invest in water resources.

Ranking Member Carper:

2. As you know, beach nourishment projects tend not to compete well overall in benefit cost ratio analysis when compared to larger projects like ports. This appears to be a larger problem impacting projects across almost all divisions of the Corps infrastructure portfolio. How should we update Benefit Cost Ratio to incorporate more value from these types of projects into the assessment?

Answer: As new, reliable, and scientifically supported methods for estimating the benefits and costs of a proposed water resources project are developed, the Corps will consider them. For example, for riverine flooding, the Corps is working on ways to improve project formulation based on an analysis of the alternatives that may be available to reduce a risk to public safety. In some cases, it may be possible to use such metrics alongside the benefit-to-cost ratio to inform investment decisions.

3. Please provide the current status of the implementation of each provision of the last two Water Resources Development Acts (WRDAs) regardless of whether the Corps has issued implementation guidance or not. For each provision that has not been implemented, please provide a brief description of the reason(s), challenge(s) or barrier(s). For provisions where implementation/execution has been initiated, but where there are major barriers or problems, please identify the same. This information will place our committee in a position to be able to potentially resolve implementation issues through legislative fixes in the next Water Resources Development Act

Answer:

WRDA 2016 Implementation Guidance Status

Section	Section Name	Status
1101	Youth Service and Conservation Corps Organizations	No guidance required. No major barriers or problems identified.
1102	Navigation Safety	Guidance pending. No major barriers or problems identified.
1103	Emerging Harbors	Guidance pending. No major barriers or problems identified.
1104	Federal Breakwaters and Jetties	Guidance issued. No major barriers or problems identified.
1105	Remote and Subsistence Harbors	Guidance issued. No major barriers or problems identified.
1106	Alternative Projects to Maintenance Dredging	Guidance pending. No major barriers or problems identified.

1107	Great Lakes Navigation Systems	Guidance pending. No major barriers or problems identified.
1108	Funding for Harbor Maintenance Programs	No guidance required. No major barriers or problems identified.
1109	Maintenance of Harbors of Refuge	Guidance issued. No major barriers or problems identified.
1110	Donor Ports and Energy Transfer Ports	Guidance issued. No major barriers or problems identified.
1111	Harbor Deepening	Guidance issued. Implementation pending a request from a non-Federal sponsor.
1112	Implementation Guidance	No guidance required. No major barriers or problems identified.
1113	Non-Federal Interest Dredging Authority	Guidance issued. No major barriers or problems identified.
1114	Transportation Cost Savings	Guidance pending. No major barriers or problems identified.
1115	Reservoir Sediment	Guidance issued. Implementation pending a request from a non-Federal interest.
1116	Water Supply Conservation	Guidance issued. Implementation pending a request from a non-Federal interest.
1117	Drought Emergencies	Guidance issued. No major barriers or problems identified.
1118	Leveraging Federal Infrastructure for Increased Water Supply	Guidance issued. Execution pending a request from a non-Federal interest.
1119	Indian Tribes	Guidance issued. No major barriers or problems identified.
1120	Tribal Consultation Reports	Guidance issued. No major barriers or problems identified.
1121	Tribal Partnership Program	Guidance pending. No major barriers or problems identified.
1122	Beneficial Use of Dredge Material	Guidance pending. No major barriers or problems identified.
1123	Great Lakes Fishery and Ecosystem Restoration	Guidance issued. No major barriers or problems identified.
1124	Corps of Engineers Operation of Unmanned Aircraft Systems	Guidance pending. No major barriers or problems identified.
1125	Funding to process permits	Guidance pending. No major barriers or problems identified.
1126	Study of Water Resources Development Projects by Non-Federal Interest	Guidance pending. No major barriers or problems identified.
1127	Non-Federal Construction of Authorized Flood Damage Reduction Projects	Guidance issued. No major barriers or problems identified.

1128	Multistate Activities	Guidance issued. Execution pending requests from two or more States.
1129	Planning Assistance to States	Guidance issued. No major barriers or problems identified.
1130	Regional Participation Assurance for Levee Safety Activities	Guidance issued. No major barriers or problems identified.
1131	Participation of Non-Federal Interests	Guidance issued. No major barriers or problems identified.
1132	Post Authorization Change Reports	Guidance pending. No major barriers or problems identified.
1133	Maintenance Dredging Data	Guidance issued. No major barriers or problems identified.
1134	Electronic Submission and Tracking of Permit Applications	No guidance required. No major barriers or problems identified.
1135	Data Transparency	Guidance issued. No major barriers or problems identified.
1136	Quality Control	No guidance required. No major barriers or problems identified.
1137	Report on Purchase of Foreign Manufactured Articles	Guidance pending. No major barriers or problems identified.
1138	International Outreach Program	No guidance required. No major barriers or problems identified.
1139	Dam Safety Repairs Projects	Guidance pending. No major barriers or problems identified.
1140	Federal cost Limitation for Certain Projects	Guidance issued. No major barriers or problems identified.
1141	Lake Kemp, Texas	No guidance required. No major barriers or problems identified.
1142	Corrosion Prevention	No guidance required. No major barriers or problems identified.
1143	Sediment Sources	Guidance issued. No major barriers or problems identified.
1144	Prioritization of Certain Project	No guidance required. No major barriers or problems identified.
1145	Gulf Coast Oyster Bed Recovery Assessment	Guidance issued. No major barriers or problems identified.
1146	Initiating Work on Separable Elements	No guidance required. No major barriers or problems identified.
1147	Lower Bois D'Arc Creek Reservoir Project, Fannin County, Texas	Guidance issued. No major barriers or problems identified.
1148	Recreational Access at Corps of Engineers Reservoirs	Guidance issued. No major barriers or problems identified.
1149	No Wake Zones in Navigation Channels	Guidance issued. No major barriers or problems identified.
1150	Ice Jam Prevention and Mitigation	Guidance issued. No major barriers or problems identified.

1151	Structural Health Monitoring	Guidance issued. No major barriers or problems identified.
1152	Kennewick Man	Guidance issued. No major barriers or problems identified.
1153	Authority to Accept and Use Materials and Services	Guidance issued. No major barriers or problems identified.
1154	Munitions Disposal	Guidance pending. No major barriers or problems identified.
1155	Management of Recreation Facilities	Guidance pending. No major barriers or problems identified.
1156	Structures and Facilities Constructed by Secretary	Guidance issued. No major barriers or problems identified.
1157	Project Completions	Guidance issued. No major barriers or problems identified.
1158	New England District Headquarters	Guidance issued. No major barriers or problems identified.
1159	Buffalo District Headquarters	Guidance issued. No major barriers or problems identified.
1160	Future Facility Investment	Guidance issued. No major barriers or problems identified.
1161	Completion of Ecosystem Restoration Projects	Guidance issued. No major barriers or problems identified.
1162	Fish and Wildlife Mitigation	Guidance pending. No major barriers or problems identified.
1163	Wetlands Mitigation	Guidance issued. No major barriers or problems identified.
1164	Debris Removal	No guidance required. No major barriers or problems identified.
1165	Disposition Studies	Guidance issued. No major barriers or problems identified.
1166	Transfer of Excess Credit	Guidance issued. No major barriers or problems identified.
1167	Hurricane and Storm Damage Reduction	Guidance issued. No major barriers or problems identified.
1168	Fish Hatcheries	Guidance pending. No major barriers or problems identified.
1169	Shore Damage Prevention or Mitigation	Guidance pending. No major barriers or problems identified.
1170	Enhancing Lake Recreation Opportunities	No guidance required. No major barriers or problems identified.
1171	Credit in Lieu of Reimbursement	Guidance issued. No major barriers or problems identified.
1172	Easements for Electric, Telephone, or Broadband Service Facilities	Guidance issued. No major barriers or problems identified.
1173	Study on Performance of Innovative Materials	Guidance issued. No major barriers or problems identified.

1174	Conversion of Surplus Water Agreements	Guidance issued. No major barriers or problems identified.
1175	Projects Funded by the Inland Waterways Trust Fund	No guidance required. No major barriers or problems identified.
1176	Rehabilitation Assistance	No guidance required. No major barriers or problems identified.
1177	Rehabilitation of Corps Engineers Constructed Dams	Guidance pending. No major barriers or problems identified.
1178	Columbia River	Guidance pending. No major barriers or problems identified.
1179	Missouri River	Guidance pending. No major barriers or problems identified.
1180	Chesapeake Bay Oyster Restoration	No guidance required. No major barriers or problems identified.
1181	Salton Sea, California	No guidance required. No major barriers or problems identified.
1182	Adjustment	Guidance issued. No major barriers or problems identified.
1183	Coastal Engineering	Guidance pending. No major barriers or problems identified.
1184	Consideration of Measures	Guidance issued. No major barriers or problems identified.
1185	Table Rock Lake, Arkansas and Missouri	Guidance issued. No major barriers or problems identified.
1186	Rural Western Water	Guidance issued. No major barriers or problems identified.
1187	Interstate Compacts	No guidance required. No major barriers or problems identified.
1188	Sense of Congress	No guidance required. No major barriers or problems identified.
1189	Dredged Material Disposal	No guidance required. No major barriers or problems identified.
1201	Authorization of Proposed Feasibility Studies	Guidance issued. No major barriers or problems identified.
1202	Additional Studies	Guidance issued. No major barriers or problems identified.
1203	North Atlantic Coastal Region	Guidance issued. No major barriers or problems identified.
1204	South Atlantic Coastal Study	Guidance issued. Identification of a non-Federal sponsor for the study is required before the study can be initiated.
1205	Texas Coastal Area	Guidance issued. No major barriers or problems identified.
1206	Upper Mississippi and Illinois Rivers	Guidance pending. No major barriers or problems identified.

1207	Kanawha River Basin	Guidance issued. No major barriers or problems identified.
1301	Deauthorization of Inactive Projects	No guidance required. No major barriers or problems identified.
1302	Backlog Prevention	No guidance required. No major barriers or problems identified.
1303	Valdez, Alaska	Guidance issued. No major barriers or problems identified.
1304	Lost Angeles County Drainage Area, Los Angeles County, California	Guidance issued. No major barriers or problems identified.
1305	Sutter Basin, California	Guidance issued. No major barriers or problems identified.
1306	Essex River, Massachusetts	No guidance required. No major barriers or problems identified.
1307	Port of Cascade Locks, Oregon	Guidance issued. No major barriers or problems identified.
1308	Central Delaware River, Philadelphia, Pennsylvania	Guidance issued. No major barriers or problems identified.
1309	Huntingdon County, Pennsylvania	No guidance required. No major barriers or problems identified.
1310	Rivercenter, Philadelphia, Pennsylvania	No guidance required. No major barriers or problems identified.
1311	Salt Creek, Graham, Texas	Guidance issued. No major barriers or problems identified.
1312	Texas City Ship Channel, Texas City, Texas	Guidance issued. No major barriers or problems identified.
1313	Stonington Harbour, Connecticut	No guidance required. No major barriers or problems identified.
1314	Red River Below Denison Dam, Texas, Oklahoma, Arkansas and Louisiana	Guidance issued. No major barriers or problems identified.
1315	Green River And Barren River, Kentucky	Guidance issued. No major barriers or problems identified.
1316	Hannibal Small Boat Harbor, Hannibal, Missouri	Guidance issued. No major barriers or problems identified.
1317	Land Transfer and Trust Land for Muscogee (Creek) Nation	Guidance issued. No major barriers or problems identified.
1318	Cameron County, Texas	Guidance issued. No major barriers or problems identified.
1319	New Savannah Bluff Lock and Dam, Georgia and South Carolina	Guidance issued. No major barriers or problems identified.
1320	Hamilton City, California	Guidance issued. No major barriers or problems identified.
1321	Conveyances	Guidance issued. Pensacola Dam and Reservoir, Grand River, Oklahoma conveyance pending non-Federal interest contributing funds.

1322	Expedited Considerations	Guidance pending. No major barriers or problems identified.
1401	Project Authorizations	Guidance issued. No major barriers or problems identified.
1402	Special Rules	Guidance issued. No major barriers or problems identified.
2112	Technical Assistance for Tribal Water Systems	No guidance required. No major barriers or problems identified.
3503	Program Establishment	Guidance pending. No major barriers or problems identified.
3603	Lake Tahoe Restoration	Guidance pending. No major barriers or problems identified.
3608	Choctaw Nation of Oklahoma and the Chickasaw Nation Water Settlement	No guidance required. No major barriers or problems identified.
5005	Great Lakes Restoration Initiative	No guidance required. No major barriers or problems identified.
5007	Chesapeake Bay Grass Survey	No guidance required. No major barriers or problems identified.
5013	Estuary Restoration	Guidance pending. No major barriers or problems identified.
5014	Environmental Banks	Guidance pending. No major barriers or problems identified.

WRRDA 2014 Implementation Guidance Status

Section	Section Name	Status
1001	Vertical integration and acceleration of studies	Guidance pending. No major barriers or problems identified.
1002	Consolidation of studies	Guidance issued. No major barriers or problems identified.
1003	Expedited completion of reports	Guidance issued. No major barriers or problems identified.
1004	Removal of duplicative analyses	Guidance issued. No major barriers or problems identified.
1005	Project acceleration	Guidance pending. No major barriers or problems identified.
1006	Expediting the evaluation and processing of permits	Guidance issued. No major barriers or problems identified.
1007	Expediting approval of modifications and alterations of projects by non-Federal interests	Guidance issued. No major barriers or problems identified.
1008	Expediting hydropower at Corps of Engineers facilities	Guidance issued. No major barriers or problems identified.

1009	Enhanced use of electronic commerce in Federal procurement	No guidance required. No major barriers or problems identified.
1010	Determination of project completion	Guidance issued. No major barriers or problems identified.
1011	Prioritization	No guidance required. No major barriers or problems identified.
1012	Transparency in accounting and administrative expenses	Guidance issued. No major barriers or problems identified.
1013	Evaluation of Project Partnership Agreements	Guidance issued. No major barriers or problems identified.
1014	Study and construction of water resources development projects by non-Federal interests.	Guidance issued. No major barriers or problems identified.
1015	Contributions by non-Federal interests	Guidance issued. No major barriers or problems identified.
1016	Operation and maintenance of certain projects	Guidance issued. No major barriers or problems identified.
1017	Acceptance of contributed funds to increase lock operations	Guidance issued. No major barriers or problems identified.
1018	Credit for in-kind contributions	Guidance issued. No major barriers or problems identified.
1019	Clarification of in-kind credit authority	Guidance issued. No major barriers or problems identified.
1020	Transfer of excess credit	Guidance issued. No major barriers or problems identified.
1021	Crediting authority for federally authorized navigation projects	Guidance pending. No major barriers or problems identified.
1022	Credit in lieu of reimbursement	Guidance issued. No major barriers or problems identified.
1023	Additional contributions by non-Federal interests	Guidance issued. No major barriers or problems identified.
1024	Authority to accept and use materials and services	Guidance issued. No major barriers or problems identified.
1025	Water resources projects on Federal land	Guidance issued. No major barriers or problems identified.
1026	Clarification of impacts to other Federal facilities	Guidance issued. No major barriers or problems identified.
1027	Clarification of munition disposal authorities	Guidance issued. No major barriers or problems identified.
1028	Clarification of mitigation authority	Guidance issued. No major barriers or problems identified.
1029	Clarification of interagency support authorities	Guidance issued. No major barriers or problems identified.
1030	Continuing authority	Guidance issued. No major barriers or problems identified.

1031	Tribal partnership program	Guidance issued. No major barriers or problems identified.
1032	Territories of the United States	Guidance issued. No major barriers or problems identified.
1033	Corrosion prevention	Guidance issued. No major barriers or problems identified.
1034	Advanced modeling technologies -- Engineering and Construction Bulletin No. 2016-3	Guidance issued. No major barriers or problems identified.
1035	Recreational access	Guidance issued. No major barriers or problems identified.
1036	Non-Federal plans to provide additional flood risk reduction	Guidance issued. No major barriers or problems identified.
1037	Hurricane and storm damage reduction	Guidance issued. No major barriers or problems identified.
1038	Reduction of Federal costs for hurricane and storm damage reduction projects	Guidance issued. No major barriers or problems identified.
1039	Invasive species	Guidance issued. No major barriers or problems identified.
1040	Fish and wildlife mitigation	No guidance required. No major barriers or problems identified.
1041	Mitigation status report	Guidance issued. No major barriers or problems identified.
1042	Reports to Congress	Guidance issued. No major barriers or problems identified.
1043	Non-Federal Implementation Pilot Program	Guidance pending. No major barriers or problems identified.
1044	Independent peer review	Guidance issued. No major barriers or problems identified.
1045	Report on surface elevations at drought affected lakes	Guidance issued. No major barriers or problems identified.
1046	Reservoir operations and water supply	Guidance issued. No major barriers or problems identified.
1047	Special use permits	Guidance issued. No major barriers or problems identified.
1048	America the Beautiful National Parks and Federal Recreational Lands Pass program	Guidance issued. No major barriers or problems identified.
1049	Applicability of spill prevention, control, and countermeasure rule	No guidance required. No major barriers or problems identified.
1050	Namings	Guidance issued. No major barriers or problems identified.
1051	Interstate water agreements and compacts	No guidance required. No major barriers or problems identified.
1052	Sense of Congress regarding water resources development bills	No guidance required. No major barriers or problems identified.

2001	Definitions	No guidance required. No major barriers or problems identified.
2002	Project Delivery Process Reforms	Guidance pending. No major barriers or problems identified.
2003	Efficiency of revenue collection	No guidance required. No major barriers or problems identified.
2004	Inland waterways revenue studies	Guidance issued. No major barriers or problems identified.
2005	Inland Waterways Stakeholder Roundtable	Guidance issued. No major barriers or problems identified.
2006	Preserving the Inland Waterway Trust Fund (Olmsted)	Guidance issued. No major barriers or problems identified.
2007	Inland waterways oversight	No guidance required. No major barriers or problems identified.
2008	Assessment of operation and maintenance needs of the Atlantic Intracoastal Waterway and the Gulf Intracoastal Waterway	Guidance issued. No major barriers or problems identified.
2009	Inland waterways riverbank stabilization	Guidance issued. No major barriers or problems identified.
2010	Upper Mississippi River Protection	Guidance issued. No major barriers or problems identified.
2011	Corps of Engineers lock and dam energy development	Guidance issued. No major barriers or problems identified.
2012	Restricted areas at Corps of Engineers dams	Guidance issued. No major barriers or problems identified.
2013	Operation and maintenance of fuel taxed inland waterways	Guidance issued. No major barriers or problems identified.
2101	Funding for harbor maintenance programs	No guidance required. No major barriers or problems identified.
2102	Operation and maintenance of harbor projects	Guidance issued. No major barriers or problems identified.
2103	Consolidation of deep draft navigation expertise	Guidance issued. No major barriers or problems identified.
2104	Remote and subsistence harbors	Guidance issued. No major barriers or problems identified.
2105	Arctic deep draft port development partnerships	Guidance issued. No major barriers or problems identified.
2106	Additional measures at donor ports and energy transfer ports	Guidance issued. No major barriers or problems identified.
2107	Preserving United States harbors	Guidance issued. No major barriers or problems identified.
3001	Dam Safety	No guidance required. No major barriers or problems identified.
3011	Systemwide improvement framework	No guidance required. No major barriers or problems identified.

3012	Management of flood risk reduction projects	Guidance issued. No major barriers or problems identified.
3013	Vegetation management policy	Guidance issued. No major barriers or problems identified.
3014	Levee certifications	Guidance issued. No major barriers or problems identified.
3015	Planning assistance to States	Guidance issued. No major barriers or problems identified.
3016	Levee safety	Guidance issued. No major barriers or problems identified.
3017	Rehabilitation of existing levees	Guidance issued. No major barriers or problems identified.
3021	Use of innovative materials	Guidance issued. No major barriers or problems identified.
3022	Durability, sustainability, and resilience	Guidance issued. No major barriers or problems identified.
3023	Study on risk reduction	Guidance issued. No major barriers or problems identified.
3024	Management of flood, drought, and storm damage	No guidance required. No major barriers or problems identified.
3025	Post-disaster watershed assessments	Guidance issued. No major barriers or problems identified.
3026	Hurricane and storm damage reduction study	Guidance issued. No major barriers or problems identified.
3027	Emergency communication of risk	Guidance issued. No major barriers or problems identified.
3028	Safety assurance review	No guidance required. No major barriers or problems identified.
3029	Emergency responses to natural disasters	Guidance issued. No major barriers or problems identified.
4001	River basin commissions	Guidance issued. No major barriers or problems identified.
4002	Mississippi River	Guidance issued. No major barriers or problems identified.
4003	Missouri River	Guidance issued. No major barriers or problems identified.
4004	Arkansas River	Guidance issued. No major barriers or problems identified.
4005	Columbia Basin	No guidance required. No major barriers or problems identified.
4006	Rio Grande	Guidance issued. No major barriers or problems identified.
4007	Northern Rockies headwaters	Guidance issued. No major barriers or problems identified.
4008	Rural Western water	No guidance required. No major barriers or problems identified.

4009	North Atlantic Coastal Region	Guidance issued. No major barriers or problems identified.
4010	Chesapeake Bay	Guidance issued. No major barriers or problems identified.
4011	Louisiana coastal area	Guidance issued. No major barriers or problems identified.
4012	Red River Basin	Guidance issued. No major barriers or problems identified.
4013	Technical corrections	Guidance issued. No major barriers or problems identified.
4014	Ocean and coastal resiliency	Guidance issued. No major barriers or problems identified.
5001	General authority for capitalization grants	No guidance required. No major barriers or problems identified.
5002	Capitalization grant agreements	No guidance required. No major barriers or problems identified.
5003	Water pollution control revolving loan funds	No guidance required. No major barriers or problems identified.
5004	Requirements	No guidance required. No major barriers or problems identified.
5005	Report on the allotment of funds	No guidance required. No major barriers or problems identified.
5006	Effective date	No guidance required. No major barriers or problems identified.
5011	Watershed pilot projects	No guidance required. No major barriers or problems identified.
5012	Definition of treatment works	No guidance required. No major barriers or problems identified.
5013	Funding for Indian programs	No guidance required. No major barriers or problems identified.
5014	Water infrastructure public-private partnership pilot program	Guidance issued. The FY 2017 Consolidated Appropriations Bill Statement of Managers directed the Corps to discontinue all work on project-specific public-private partnerships pending establishment of a P3 policy, which is under development.
5021	Short title	Guidance issued. No major barriers or problems identified.
5022	Definitions	Guidance issued. No major barriers or problems identified.
5023	Innovative Financing Pilot Projects	Guidance issued. Federal projects or activities are not eligible for Federal credit assistance. The Administration has proposed statutory modifications to EPA's WIFIA program to enable a

		broader range of non-Federal water resources projects to be eligible under EPA's credit assistance program, including some types of projects that may have historically been carried out by the Army Corps as Federal projects.
5024	Applications.	Guidance issued. No major barriers or problems identified.
5025	Eligible entities.	Guidance issued. No major barriers or problems identified.
5026	Projects eligible for assistance.	Guidance issued. No major barriers or problems identified.
5027	Activities eligible for assistance.	Guidance issued. No major barriers or problems identified.
5028	Determination of eligibility and project selection.	Guidance issued. No major barriers or problems identified.
5029	Secured loans.	Guidance issued. No major barriers or problems identified.
5030	Program administration.	Guidance issued. No major barriers or problems identified.
5031	State, tribal, and local permits.	Guidance issued. No major barriers or problems identified.
5032	Regulations.	Guidance issued. No major barriers or problems identified.
5033	Funding.	Guidance issued. No major barriers or problems identified.
5034	Reports on pilot program implementation.	Guidance issued. No major barriers or problems identified.
5035	Requirements.	Guidance issued. No major barriers or problems identified.
6001	Deauthorization of inactive projects	Guidance issued. No major barriers or problems identified.
6002	Review of Corps of Engineers assets	Guidance issued. No major barriers or problems identified.
6003	Backlog prevention	Guidance issued. No major barriers or problems identified.
6004	Deauthorizations	Guidance issued. No major barriers or problems identified.
6005	Land conveyances	Guidance issued. The Craney Island Eastward Expansion must be constructed before the Craney Island Dredged Material Management Area land conveyance can be completed.
7001	Annual report to congress	Guidance issued. No major barriers or problems identified.

7002	Authorization of final feasibility studies	No guidance required. No major barriers or problems identified.
7003	Authorization of project modifications recommended by the Secretary	No guidance required. No major barriers or problems identified.
7004	Expedited consideration in the House and Senate	No guidance required. No major barriers or problems identified.

Senator Moran:

4. Repairs and reconstruction of flood gates at Harlan County Lake for Dam Safety Assurance are placing an extraordinary financial burden on the Kansas and Nebraska Bostwick Irrigation Districts. According to Section 1203(a) of the Water Resources Development Act of 1986 regarding dam safety, when “the cause results from new hydrologic or seismic data or changes in state-of-the-art design or construction criteria deemed necessary for safety purposes,” repairs and reconstruction are to be cost shared at 15 percent of the normal operations & maintenance rate. The Army Corps guidance limits application of the 15 percent cost-share to only hydrologic or seismic inadequacy.

Tainter gates equipped on Harlan County Lake Dam do not meet current design criteria. The Army Corps has embarked on a repair of the Tainter gates at Harlan County Reservoir in 2013 to correct a design flaw using the most recent and up-to-date criteria.

Section 1139 of the Water Infrastructure Improvements for the Nation Act of 2016 states that “The Secretary shall issue guidance . . . (I) on the types of circumstances under which the requirement in section 1203(a) of the Water Resources Development Act of 1986, relating to state-of-the-art design or construction criteria deemed necessary for safety purposes applies to a dam safety repair project.”

How will you engage stakeholders in the development of the guidance required by Section 1139 of the Water Infrastructure Improvements for the Nation Act to Dam Safety Assurance projects like the one at Harlan County Lake?

Answer: Draft Implementation Guidance for Section 1139 is currently under development. While the Corps does not specifically solicit comments from the public when it develops draft implementation guidance of this kind, the Corps hosted several webinars where interested stakeholders could provide comments to the Corps. Where a stakeholder provides comments, the Corps will consider them in development of the relevant implementation guidance.

5. My state of Kansas recently undertook a \$20 million investment in a first-in-the-nation dredging initiative at the John Redmond Reservoir, the first non-Federal entity to dredge an Army Corps reservoir. Additional efforts continue in the watershed above John Redmond, and other reservoirs in the state to slow the loss of storage capacity, and maintain quality water supply for the state.

This also greatly contributes to the health of our nation's infrastructure, one of our most valuable assets. This state investment in federal reservoir protection and restoration is significant, yet the Army Corps does not grant any incentives, rewards, or credit for work done.

How will you and your office work with states, and Congress, on establishing some federal incentives for such activities?

Answer: In July 2017, the Corps released Implementation Guidance for Section 1115 of WRDA 2016, Reservoir Sediment. This provision authorizes a pilot program under which the Corps, at up to 10 of its dams, could accept services provided by non-Federal interests or commercial entities for the removal of sediment captured behind the dam for the purposes of restoring the authorized storage capacity. In exchange for providing this service, Section 1115 authorizes the non-Federal interest or commercial entity to retain, use, recycle, sell or otherwise dispose of any sediment removed in connection with the service. States or communities may also find the additional storage capacity afforded by the dredging activity to be a sufficient incentive.

6. Section 1046(d) of the Water Resources Reform and Development Act of 2014 allows the Assistant Secretary of the Army to accept plans from states and local interests for the utilization of allocated water storage for future use. Kansas submitted a 1046(d) proposal with three key provisions, including revision of contracts for a lower interest rate, modification of contract end dates, and the creation of water quality pools.

The Corps was supposed to enter into discussions with entities who submitted reports by March 31, 2016. That deadline is long-past, and there has been no word from the Army Corps on the report.

Will you follow-up on these reports under this provision with the states, and engage in meaningful dialogue with the State of Kansas on these issues?

Answer: Yes.

7. As you know, the Corps is engaged in the rulemaking with the in-process Water Supply Rule. The Army Corps must engage with the states to ensure that states are able to perform their duties of supplying an adequate water supply to their citizens.

The ability of states to engage with the Army Corps in this rulemaking is often limited to providing written comments, essentially after the fact, instead of active and beneficial dialogue throughout the process.

Will you engage states and other stakeholders in this process as required by Executive Order 13132 and President Trump's February 24th Executive Order for Enforcing the Regulatory Reform Agenda, to ensure that state rights and roles of water supply within their borders, as well as the principles of federalism implicated, are not impeded by proposed rules?

Answer: The Corps solicited public comments for nearly a year in this rulemaking, during a period that lasted from December 16, 2016 to November 16, 2017, and is currently reviewing the comments that were submitted. Prior to issuing a final rule, the Corps will comply with any applicable provisions of Executive Order 13777 (Enforcing the Regulatory Reform Agenda, Feb. 24, 2017).

As explained in the preamble to the proposed rule, published in the Federal Register in December 2016 (81 Fed. Reg. 91556, 91587 (December 16, 2016)), the Corps does not believe that the proposed rule would have federalism implications within the meaning of Executive Order 13132. The proposed rule would not affect water rights or the authority of States to allocate water, and would not change the operations of any Corps reservoir. Instead, the proposed rule is intended to improve the ability of the Corps to respond to requests to utilize Corps reservoirs in order to exercise water rights, consistent with existing state and federal laws.

Senator Sanders:

Rural Infrastructure

8. The Association of State Dam Safety Officials estimates that the combined total cost to rehabilitate the nation's non-Federal and federal dams exceeds \$64 billion. To rehabilitate just those dams categorized as most critical, or high-hazard, will cost nearly \$22 billion, a cost that continues to rise as maintenance, repair, and rehabilitation are delayed. How do you think the Army Corps could improve on providing funding and technical support to rural communities for to ensure these critical infrastructure needs are met, especially for rural communities? What additional tools does the Army Corps need to secure the nation's failing dams?

Answer: The rehabilitation of a non-Federal dam generally is the responsibility of the owner of the dam. All but one of the states (Alabama) now have programs to provide for the safety of these dams. The Federal role in this area is limited. The Federal Emergency Management Agency (FEMA) is the lead Federal agency. FEMA chairs the Interagency Committee on Dam Safety (ICODS) and the National Dam Safety Review Board (NDSRB). The policies and guidance that the ICODS and the NDSRB issue benefit both Federal and non-Federal agencies, and inform the state-based effort to provide for the safety and security of the non-Federal dams.

Climate Change

9. In 2017, extreme weather events, such as hurricanes, wild fires and floods damaged critical infrastructure all over the country. These extreme weather events are exacerbated by climate change. How is the Army Corps integrating the best available climate science in the formulation of future planning like feasibility studies for flood damage reduction, navigation, environmental restoration, and other projects?

Answer: The Corps has developed and implemented guidance and supporting methods and tools to address the risks associated with changing conditions such as extreme weather. They inform how we plan, engineer, operate, and maintain our projects.

Senator Whitehouse:

10. Many of the Corps' projects are built with the intention of lasting for years, if not decades. Given the long lives of many of these projects, how is the agency and its non-Federal partners considering the effects of climate change, especially along the coasts, in its work?

Answer: In 2013, the Corps released a report on "Coastal Risk Reduction and Resilience," which laid out a range of approaches that can be used in development of solutions to identified water resource challenges that will reduce flood risks in coastal areas, including natural or nature-based features (e.g., wetlands and dunes), nonstructural interventions (e.g., policies, building codes, and emergency response such as early warning systems and evacuation plans), and structural measures (e.g., seawalls and breakwaters).

In addition, for all of its projects, including those along the coast, the Corps considers ways to use engineering to help reduce vulnerabilities (such as the risk of project or component failure) and considers the dependencies among project features (their impacts on each other) over both the short- and long-term life of the project.

11. How does the Corps currently consider ancillary benefits, such as ecosystem resiliency and flood mitigation from longer-term sea level rise, in its benefit-cost analysis for coastal flood mitigation and storm damage reduction projects?

Answer: The benefit-cost analysis considers both the benefits and the costs associated with the risk of changing sea levels over a period of 50 years for the economic analysis and over an engineering planning horizon of 100 years.

12. With structures like the Fox Point Hurricane Barrier and Point Judith Harbor of Refuge in Rhode Island, the Corps has focused on the functionality of these structures under current conditions instead of long-term durability. However, future sea level rise and strong storms will likely overpower these and other Corps structures along the coast.
 - a. Given the time required to identify a new project and eventually complete the work, do you agree the Corps should be thinking now about the improvements and new structures that will be needed in the future?

Answer: All structures require maintenance over time. A decision on the nature and timing of an investment to rehabilitate a structure, improve or replace it, or abandon it, should consider the benefits and costs of each alternative, and the other potential uses of the available funds.

- b. If so, how could this forward-thinking mentality be better incorporated into the cost-benefit analysis the Corps uses to prioritize projects?

Answer: The Corps benefit-cost analysis already incorporates some aspects of changed future conditions throughout the period of economic analysis, generally 50 years, including sea level rise and storm intensity. The Corps continues to explore options for evaluating non-monetary benefits from projects. In some cases, it may be possible to use such metrics alongside the benefit-to-cost ratio to inform investment decisions.

13. The Water Resources Reform and Development Act of 2014 (WRRDA '14) included a requirement, Section 7001, for the Corps to submit an annual report to Congress on proposed feasibility studies and modifications submitted to the Corps by potential non-Federal partners. Any proposals that fall under the Corps' missions and meet basic requirements established in WRRDA must be included the report. Congress can then authorize these individual projects.

- a. Have all states been represented in a Section 7001 report to date?

Answer: No. Thirty-eight of the fifty United States have proposals submitted within their boundaries.

- b. If not, do you see a need for more education and outreach by the Corps on the Section 7001 report?

Answer: The Corps publishes information online and routinely reaches out to states and other stakeholders to ensure there is awareness of Section 7001 and an understanding of how to submit proposals.

14. Smaller projects responding to specific needs of town and communities, done through the Continuing Authority Programs, do not need additional Congressional authorization. The Corps, like all agencies, operates within a limited budget and has to prioritize what projects they are able to move ahead with. However, there is a lack of transparency when it comes to how projects are prioritized, particularly CAP projects. This creates a lot of uncertainty for sponsors of the projects, who have committed to share the cost, and other stakeholders. Aside from additional funding to help clear the backlog of CAP projects, do you have recommendations on what could be done to make prioritization more transparent and the Corps' funding rationale better understood by non-Federal sponsors and stakeholders?

Answer: Since FY 2015, the Continuing Authorities Program (CAP) follows the funding prioritization process identified in the Statement of Managers for the Energy and Water Development and Related Agencies Appropriations Act, 2015. The process includes maintaining an approximate 20 percent/80 percent initial allocation balance between the feasibility phase and design and implementation phase, and specifically allocating available funds until the funds are exhausted or all capability on active projects has been met, except in the case of CAP Section 14 projects. For CAP Section 14, the Corps allocates funds to the projects that address the most significant risks and adverse consequences, irrespective of phase or previous funding history.

15. Section 1030 of WRRDA '14 requires the Corps to provide a publically available list of prioritized CAP projects and the Secretary's justification for this prioritization. The Corps is also required to provide an annual report of these projects. Please provide an update on the Corps' implementation of Section 1030.

Answer: The information to support this report is under development by the Corps.

16. Extreme weather events put infrastructure at risk. In Rhode Island, Superstorm Sandy almost caused Narragansett Bay to breach the water supply for the City of Newport. The March 2010, storms flooded the Pawtuxet River, overtopping the Warwick Wastewater Treatment facility and sending untreated wastewater into surrounding neighborhoods, the River and Narragansett Bay. What do you see as the Army Corps' role in helping cities and towns respond to these increasingly frequent extreme weather events and ensure the safety of the nation's critical infrastructure?

Answer: The Corps has a variety of technical guidance that can assist communities who wish to undertake their own analysis related to extreme weather, including recently updated guidance on flood inundation mapping, management of water control systems, and detection of changing hydrologic conditions. The Corps has developed and made publicly available a range of tools for hydrologic analysis and for visualizing expected sea levels. Working with other Federal agencies, the Corps has been involved in aggregating, integrating, and translating the science of extreme weather into actionable options for decision makers, including those at the state and community level. Through its planning assistance to states and its floodplain management services programs, the Corps supports a wide variety of studies conducted at the state and local levels to better understand their flood risks, and address them, including the risks associated with extreme weather events. Corps water managers and emergency managers pay close attention to extreme weather events and continuously work to improve risk communication with local agencies.

17. For the past two years, I have included in my appropriations request for the Army Corps more parity between its inland and coastal Flood and Coastal Storm Damage Reduction accounts. The Corps' FY18 budget proposal sets aside for \$1.32 billion for inland projects under this program, and only \$46 million for coastal projects.
- a. Given the particular and severe risks facing our coasts from sea level rise, stronger storms, and storm surge, do you agree with this disparity between inland and coastal projects?

Answer: Most of the projects that the Corps has constructed to reduce flood risks along the coast involve beach nourishment. These projects do not require nourishment on an annual basis. Over the past several years, the Corps has used a combination of funding – provided both in annual and in supplemental appropriations in the flood control and coastal emergencies, operation and maintenance, and construction accounts, to re-nourish the beaches along our coasts.

The Corps evaluates all of its projects and each potential investment on an equal basis, using established performance guidelines to set priorities. This approach resulted in a portfolio of

proposed investments across the Nation, involving all of our programs. These investments, when viewed together, would provide the highest economic, environmental, and safety return to the Nation from the available funds.

b. Please explain how the Corps developed these inland and coastal budgets.

Answer: The budget recommendation is developed using established performance guidelines that include addressing dam safety concerns, providing high economic returns, and reducing significant risks to human safety. Projects are included in the budget recommendation using these guidelines.

c. Please explain how the Corps defines a “coastal” or “inland” project.

Answer: In the Corps flood and storm damage reduction program, we use the term “coastal projects” to refer to projects that are designed to reduce the risk of damage from the effects of flooding, wave action, and storm surges in a coastal storm, but not to the flooding that occurs along riverine systems near the coast from such storms. We use this term also to refer to projects designed to achieve those objectives along the coasts of the Great Lakes. By contrast, in this program we use the term “inland projects” to refer to projects that are designed to provide flood damage reduction benefits from the effects of riverine flooding. Many of these projects are located in the inland regions and river basins of the Nation, but some are located close to or even on our coasts – along the rivers that flow into them.

18. What is the Corps’ role in preparing ports for sea level rise, increased storm surge, and other consequences of climate change?

Answer: For ports that are under study by the Corps, we consider the effects of changing sea levels and related total water levels (e.g., tide, surge, waves) throughout the life of the project. This includes evaluation of impacts to all project components, including channels, jetties, dredge material containment dikes, floodwalls, bridge clearances, wetland functioning, and facilities. For other ports, we have developed simple tools to support local communities as they begin to assess the impacts of these changes, including a publicly available sea level calculator. Technical guidance provides information on how to conduct studies to analyze the effects of sea level rise, increased storm surge, and other consequences of climate change and to develop preparedness and resilience measures.

19. Section 4014 of WRRDA ‘14 authorized the Corps to undertake studies for coastal resiliency projects that could be completed under the CAP. The Water Infrastructure Improvements for the Nation Act of 2016 (WIIN ‘16), prioritized projects in areas threatened by sea level rise or where future emergency repair costs can be minimized or dredged material can be beneficially reused. It also called on the Corps to convene an interagency working group and conduct regional assessments of coastal flooding risks and resiliency needs. Please provide an update on the Corps’ implementation of Section 4014.

Answer: The Corps issued implementation guidance for this provision on May 16, 2016. The Corps has not yet implemented studies or projects under this authority.

20. Section 1164 of WIIN '16 expanded the Corps' authority to remove debris from marine channels and adjacent waters used for recreation and other purposes. Please provide an update on the Corps' implementation of Section 1164.

Answer: The Corps has not yet implemented work under Section 1164.

21. Section 1173 of WIIN '16 requires the Corps to hire the National Academy of Sciences to study the utility of innovative materials in water resources projects. Please provide an update on the status of this National Academy report

Answer: No funding has yet been appropriated for the National Academy of Sciences study.

Senator BARRASSO. Thank you, Mr. Fisher.
General SEMONITE.

**STATEMENT OF LIEUTENANT GENERAL TODD T. SEMONITE,
COMMANDING GENERAL AND CHIEF OF ENGINEERS, U.S.
ARMY CORPS OF ENGINEERS**

General SEMONITE. Chairman Barrasso, Ranking Member Carper, and distinguished members of the Committee, it is my pleasure to be here today, accompanied by Mr. Fisher, to provide testimony on the significance of the Water Resources Development Act, which provides the United States Army Corps of Engineers valuable authorities to implement the broad Civil Works program.

As Mr. Fisher mentioned, the Corps has played a significant role in the development of the Nation's water resources. This infrastructure is a vital component of our national economy, enabling the low-cost shipment of goods through our coastal ports and on the inland waterways, reducing the flood risk to communities and businesses, and restoring aquatic ecosystems.

I have been in command of the Corps now for just over a year and a half, and I continue to be amazed by the breadth and complexity of the Civil Works program, as well as the expertise and dedication of the professionals that work in our organization. It is my belief that the credibility of the Corps is measured by our ability to deliver results that are on time, on budget, and of exceptional quality. In order to achieve these standards, the Corps continues to evaluate itself on how we can best accomplish these outcomes. To be most effective at delivering the Nation's water infrastructure needs, the Corps must become more efficient and consider new ways to prioritize, finance, and incentivize investments in water resource infrastructure.

The Corps has sought to review and apply a wide array of authorities provided in recent Water Resource Development Acts in a diligent manner. We are rapidly approaching completion and communication of an implementation guidance for both the 2014 and the 2016 Acts. Our team has endeavored to make substantial improvements in tracking and accelerating this progress, and, looking ahead, I believe that we can continue to improve our methodologies.

The Corps is also working to develop policy and administrative advancements that can improve infrastructure delivery. More specifically, we are looking internally at our policies, regulations, organizations, and procedures in order to identify opportunities for increased efficiency and effectiveness. These efforts include reducing redundancy and delegating authority to decisionmaking to the most practical and appropriate level. Several examples include streamlining the review process for potential modifications to Civil Works projects and seeking improvements to the execution of the regulatory program.

The Corps is fully committed to addressing the water resource challenges of the 21st century and seeks to evaluate opportunities to be more efficient and effective in the delivery of the Civil Works program. We recognize the significance of infrastructure investment to the Nation's economy and we look forward to working with

this Committee as it develops a Water Resource Development Act for 2018.

Thank you for allowing me the time today to address the Committee.

Senate Committee on Environment and Public Works
Hearing entitled, "America's Water Infrastructure Needs and Challenges: Federal Panel."
January 17, 2018
Question for the Record for Lieutenant General Semonite

Chairman Barrasso:

1. An abundant water supply is a top priority for western states like Wyoming, which depend on it to sustain economic and population growth. In your oral testimony, you mentioned that the Corps is considering innovative technologies to remove sediment from reservoirs, thus increasing storage capacity. As you are aware, section 1179 of the Water Infrastructure Improvements for the Nation Act (Public Law 114-322) created a pilot program for the Corps to complete reservoir sediment management plans for the Upper Missouri River Basin, in partnership with the Bureau of Reclamation. These plans would identify options for sediment management while considering technical feasibility, economics, environmental impacts, and stakeholder input. They must also use, develop and demonstrate innovative technologies to the maximum extent practicable. This provision is an important priority for my state, and other western states in the Upper Missouri River Basin, which have seen water storage capacity decrease significantly in our reservoirs. Please describe in detail what is the status of the Corps' implementation of this provision? In addition, please advise as to whether there is anything that Congress can do to help enable this program to move forward.

Answer: The implementation guidance for the Water Resources Development Act of 2016, Section 1179 is under development. I am not aware of any major barriers or problems or need for further action by the Congress.

2. In parts of Wyoming around mountainous regions, seasonal flooding from snowpack melting is an important safety and economic issue. Section 4003 of the Water Resources Reform and Development Act of 2014 (Public Law 113-121) is intended to improve monitoring of snowpack and soil moisture in the Upper Mississippi River Basin to reduce flood risk and improve river and water resource management. What is the status of the Corps' implementation of this provision?

Answer: My assumption is that you are referring to the Missouri River, not the Mississippi River. The Corps continues to maintain an informal dialogue with other Federal agencies and the affected states on this subject. However, the Corps has not yet allocated any additional funds to monitor snowpack and soil moisture in the Upper Missouri River Basin in response to this provision, beyond the amounts that it would normally spend for such activities.

Ranking Member Carper:

3. Strong relationships and the timely flow of information between Congress and the Corps are essential for the future of the water infrastructure of this great nation. When I or my staff reaches out to the Philadelphia District, a very responsive and transparent operation, we generally get responded to in a matter of hours. In fact, my staff had a call with the

Philadelphia Corps on Monday of this week at 8 am and by 11 am we had a full response to our basic informational inquiry. This, however, appears to be the exception rather than the rule. My office, and it seems many other Member's offices, have consistently had trouble getting timely and accurate responses to our questions from the Corps. From what we learned at the hearing, this has been experienced in various degrees at Headquarters, Division and District levels. For example, the final confirmation of R.D. James was delayed due to unanswered questions about a Corps project which it appears to have taken the Corps over a month to even connect with the Member to discuss the concerns. My staff has had similar examples where the information flow between your staff and mine has been rather slow, which is extremely concerning given we have started the Water Resource Development Act process. Examples include requests for a list of the bridges not needed for Corps missions, and a list of the number of "new starts" for each of the past 15 years, both which took nearly 2 months to obtain. The past is the past, but going forward we need to have better communication and responses from the Corps at all levels. Will you work with Mr. James now that he has been confirmed to improve Congressional responsiveness and make sure timely responses are being provided to all members of Congress?

Answer: Absolutely.

4. The 2014 Water Resources Reform and Development Act expanded the levee safety program nationwide, but the program has not yet received any funding. What are your views about funding this program? What other measures should be taken with respect to our national inventory of levees?

Answer: The FY 2018 Budget includes \$30 million for programmatic levee safety activities by the Corps. The Corps would use this funding to continue its inventory and review of levees for the National Levee Database, including risk screenings of levee systems. It would also use these funds to develop and update its levee safety policies and risk assessment methodology, develop technical competencies, work with other Federal agencies on a common set of guidelines for the safety of their levees, and coordinate with FEMA and other stakeholders. The Corps also uses these funds to provide information to communities that will enable them to better understand and manage the risks – to people, the economy, and the environment – associated with their levee systems.

5. As you know, beach nourishment projects tend not to compete well overall in benefit cost ratio analysis when compared to larger projects like ports. This appears to be a larger problem impacting projects across almost all divisions of the Corps infrastructure portfolio. How should we update Benefit Cost Ratio to incorporate more value from these types of projects into the assessment?

Answer: As new, reliable, and scientifically supported methods for estimating the benefits and costs of a proposed water resources project are developed, the Corps will consider them. For example, for riverine flooding, the Corps is working on ways to improve project formulation based on an analysis of the alternatives that may be available to reduce a risk to public safety. In

some cases, it may be possible to use such metrics alongside the benefit-to-cost ratio to inform investment decisions.

6. Please provide the current status of the implementation of each provision of the last two Water Resources Development Acts regardless of whether USACE has issued implementation guidance or not. For each provision that has not been implemented, please provide a brief description of the reason(s), challenge(s) or barrier(s). For provisions where implementation/execution has been initiated, but where there are major barriers or problems, please identify the same. This information will place our committee in a position to be able to potentially resolve implementation issues through legislative fixes in the next Water Resources Development Act.

Answer:

WRDA 2016 Implementation Guidance Status

Section	Section Name	Status
1101	Youth Service and Conservation Corps Organizations	No guidance required. No major barriers or problems identified.
1102	Navigation Safety	Guidance pending. No major barriers or problems identified.
1103	Emerging Harbors	Guidance pending. No major barriers or problems identified.
1104	Federal Breakwaters and Jetties	Guidance issued. No major barriers or problems identified.
1105	Remote and Subsistence Harbors	Guidance issued. No major barriers or problems identified.
1106	Alternative Projects to Maintenance Dredging	Guidance pending. No major barriers or problems identified.
1107	Great Lakes Navigation Systems	Guidance pending. No major barriers or problems identified.
1108	Funding for Harbor Maintenance Programs	No guidance required. No major barriers or problems identified.
1109	Maintenance of Harbors of Refuge	Guidance issued. No major barriers or problems identified.
1110	Donor Ports and Energy Transfer Ports	Guidance issued. No major barriers or problems identified.
1111	Harbor Deepening	Guidance issued. Implementation pending a request from a non-Federal sponsor.
1112	Implementation Guidance	No guidance required. No major barriers or problems identified.
1113	Non-Federal Interest Dredging Authority	Guidance issued. No major barriers or problems identified.
1114	Transportation Cost Savings	Guidance pending. No major barriers or problems identified.

1115	Reservoir Sediment	Guidance issued. Implementation pending a request from a non-Federal interest.
1116	Water Supply Conservation	Guidance issued. Implementation pending a request from a non-Federal interest.
1117	Drought Emergencies	Guidance issued. No major barriers or problems identified.
1118	Leveraging Federal Infrastructure for Increased Water Supply	Guidance issued. Execution pending a request from a non-Federal interest.
1119	Indian Tribes	Guidance issued. No major barriers or problems identified.
1120	Tribal Consultation Reports	Guidance issued. No major barriers or problems identified.
1121	Tribal Partnership Program	Guidance pending. No major barriers or problems identified.
1122	Beneficial Use of Dredge Material	Guidance pending. No major barriers or problems identified.
1123	Great Lakes Fishery and Ecosystem Restoration	Guidance issued. No major barriers or problems identified.
1124	Corps of Engineers Operation of Unmanned Aircraft Systems	Guidance pending. No major barriers or problems identified.
1125	Funding to process permits	Guidance pending. No major barriers or problems identified.
1126	Study of Water Resources Development Projects by Non-Federal Interest	Guidance pending. No major barriers or problems identified.
1127	Non-Federal Construction of Authorized Flood Damage Reduction Projects	Guidance issued. No major barriers or problems identified.
1128	Multistate Activities	Guidance issued. Execution pending requests from two or more States.
1129	Planning Assistance to States	Guidance issued. No major barriers or problems identified.
1130	Regional Participation Assurance for Levee Safety Activities	Guidance issued. No major barriers or problems identified.
1131	Participation of Non-Federal Interests	Guidance issued. No major barriers or problems identified.
1132	Post Authorization Change Reports	Guidance pending. No major barriers or problems identified.
1133	Maintenance Dredging Data	Guidance issued. No major barriers or problems identified.
1134	Electronic Submission and Tracking of Permit Applications	No guidance required. No major barriers or problems identified.
1135	Data Transparency	Guidance issued. No major barriers or problems identified.
1136	Quality Control	No guidance required. No major barriers or problems identified.

1137	Report on Purchase of Foreign Manufactured Articles	Guidance pending. No major barriers or problems identified.
1138	International Outreach Program	No guidance required. No major barriers or problems identified.
1139	Dam Safety Repairs Projects	Guidance pending. No major barriers or problems identified.
1140	Federal cost Limitation for Certain Projects	Guidance issued. No major barriers or problems identified.
1141	Lake Kemp, Texas	No guidance required. No major barriers or problems identified.
1142	Corrosion Prevention	No guidance required. No major barriers or problems identified.
1143	Sediment Sources	Guidance issued. No major barriers or problems identified.
1144	Prioritization of Certain Project	No guidance required. No major barriers or problems identified.
1145	Gulf Coast Oyster Bed Recovery Assessment	Guidance issued. No major barriers or problems identified.
1146	Initiating Work on Separable Elements	No guidance required. No major barriers or problems identified.
1147	Lower Bois D'Arc Creek Reservoir Project, Fannin County, Texas	Guidance issued. No major barriers or problems identified.
1148	Recreational Access at Corps of Engineers Reservoirs	Guidance issued. No major barriers or problems identified.
1149	No Wake Zones in Navigation Channels	Guidance issued. No major barriers or problems identified.
1150	Ice Jam Prevention and Mitigation	Guidance issued. No major barriers or problems identified.
1151	Structural Health Monitoring	Guidance issued. No major barriers or problems identified.
1152	Kennewick Man	Guidance issued. No major barriers or problems identified.
1153	Authority to Accept and Use Materials and Services	Guidance issued. No major barriers or problems identified.
1154	Munitions Disposal	Guidance pending. No major barriers or problems identified.
1155	Management of Recreation Facilities	Guidance pending. No major barriers or problems identified.
1156	Structures and Facilities Constructed by Secretary	Guidance issued. No major barriers or problems identified.
1157	Project Completions	Guidance issued. No major barriers or problems identified.
1158	New England District Headquarters	Guidance issued. No major barriers or problems identified.
1159	Buffalo District Headquarters	Guidance issued. No major barriers or problems identified.

1160	Future Facility Investment	Guidance issued. No major barriers or problems identified.
1161	Completion of Ecosystem Restoration Projects	Guidance issued. No major barriers or problems identified.
1162	Fish and Wildlife Mitigation	Guidance pending. No major barriers or problems identified.
1163	Wetlands Mitigation	Guidance issued. No major barriers or problems identified.
1164	Debris Removal	No guidance required. No major barriers or problems identified.
1165	Disposition Studies	Guidance issued. No major barriers or problems identified.
1166	Transfer of Excess Credit	Guidance issued. No major barriers or problems identified.
1167	Hurricane and Storm Damage Reduction	Guidance issued. No major barriers or problems identified.
1168	Fish Hatcheries	Guidance pending. No major barriers or problems identified.
1169	Shore Damage Prevention or Mitigation	Guidance pending. No major barriers or problems identified.
1170	Enhancing Lake Recreation Opportunities	No guidance required. No major barriers or problems identified.
1171	Credit in Lieu of Reimbursement	Guidance issued. No major barriers or problems identified.
1172	Easements for Electric, Telephone, or Broadband Service Facilities	Guidance issued. No major barriers or problems identified.
1173	Study on Performance of Innovative Materials	Guidance issued. No major barriers or problems identified.
1174	Conversion of Surplus Water Agreements	Guidance issued. No major barriers or problems identified.
1175	Projects Funded by the Inland Waterways Trust Fund	No guidance required. No major barriers or problems identified.
1176	Rehabilitation Assistance	No guidance required. No major barriers or problems identified.
1177	Rehabilitation of Corps Engineers Constructed Dams	Guidance pending. No major barriers or problems identified.
1178	Columbia River	Guidance pending. No major barriers or problems identified.
1179	Missouri River	Guidance pending. No major barriers or problems identified.
1180	Chesapeake Bay Oyster Restoration	No guidance required. No major barriers or problems identified.
1181	Salton Sea, California	No guidance required. No major barriers or problems identified.
1182	Adjustment	Guidance issued. No major barriers or problems identified.

1183	Coastal Engineering	Guidance pending. No major barriers or problems identified.
1184	Consideration of Measures	Guidance issued. No major barriers or problems identified.
1185	Table Rock Lake, Arkansas and Missouri	Guidance issued. No major barriers or problems identified.
1186	Rural Western Water	Guidance issued. No major barriers or problems identified.
1187	Interstate Compacts	No guidance required. No major barriers or problems identified.
1188	Sense of Congress	No guidance required. No major barriers or problems identified.
1189	Dredged Material Disposal	No guidance required. No major barriers or problems identified.
1201	Authorization of Proposed Feasibility Studies	Guidance issued. No major barriers or problems identified.
1202	Additional Studies	Guidance issued. No major barriers or problems identified.
1203	North Atlantic Coastal Region	Guidance issued. No major barriers or problems identified.
1204	South Atlantic Coastal Study	Guidance issued. Identification of a non-Federal sponsor for the study is required before the study can be initiated.
1205	Texas Coastal Area	Guidance issued. No major barriers or problems identified.
1206	Upper Mississippi and Illinois Rivers	Guidance pending. No major barriers or problems identified.
1207	Kanawha River Basin	Guidance issued. No major barriers or problems identified.
1301	Deauthorization of Inactive Projects	No guidance required. No major barriers or problems identified.
1302	Backlog Prevention	No guidance required. No major barriers or problems identified.
1303	Valdez, Alaska	Guidance issued. No major barriers or problems identified.
1304	Lost Angeles County Drainage Area, Los Angeles County, California	Guidance issued. No major barriers or problems identified.
1305	Sutter Basin, California	Guidance issued. No major barriers or problems identified.
1306	Essex River, Massachusetts	No guidance required. No major barriers or problems identified.
1307	Port of Cascade Locks, Oregon	Guidance issued. No major barriers or problems identified.
1308	Central Delaware River, Philadelphia, Pennsylvania	Guidance issued. No major barriers or problems identified.

1309	Huntingdon County, Pennsylvania	No guidance required. No major barriers or problems identified.
1310	Rivercenter, Philadelphia, Pennsylvania	No guidance required. No major barriers or problems identified.
1311	Salt Creek, Graham, Texas	Guidance issued. No major barriers or problems identified.
1312	Texas City Ship Channel, Texas City, Texas	Guidance issued. No major barriers or problems identified.
1313	Stonington Harbour, Connecticut	No guidance required. No major barriers or problems identified.
1314	Red River Below Denison Dam, Texas, Oklahoma, Arkansas and Louisiana	Guidance issued. No major barriers or problems identified.
1315	Green River And Barren River, Kentucky	Guidance issued. No major barriers or problems identified.
1316	Hannibal Small Boat Harbor, Hannibal, Missouri	Guidance issued. No major barriers or problems identified.
1317	Land Transfer and Trust Land for Muscogee (Creek) Nation	Guidance issued. No major barriers or problems identified.
1318	Cameron County, Texas	Guidance issued. No major barriers or problems identified.
1319	New Savannah Bluff Lock and Dam, Georgia and South Carolina	Guidance issued. No major barriers or problems identified.
1320	Hamilton City, California	Guidance issued. No major barriers or problems identified.
1321	Conveyances	Guidance issued. Pensacola Dam and Reservoir, Grand River, Oklahoma conveyance pending non-Federal interest contributing funds.
1322	Expedited Considerations	Guidance pending. No major barriers or problems identified.
1401	Project Authorizations	Guidance issued. No major barriers or problems identified.
1402	Special Rules	Guidance issued. No major barriers or problems identified.
2112	Technical Assistance for Tribal Water Systems	No guidance required. No major barriers or problems identified.
3503	Program Establishment	Guidance pending. No major barriers or problems identified.
3603	Lake Tahoe Restoration	Guidance pending. No major barriers or problems identified.
3608	Choctaw Nation of Oklahoma and the Chickasaw Nation Water Settlement	No guidance required. No major barriers or problems identified.
5005	Great Lakes Restoration Initiative	No guidance required. No major barriers or problems identified.
5007	Chesapeake Bay Grass Survey	No guidance required. No major barriers or problems identified.

5013	Estuary Restoration	Guidance pending. No major barriers or problems identified.
5014	Environmental Banks	Guidance pending. No major barriers or problems identified.

WRRDA 2014 Implementation Guidance Status

Section	Section Name	Status
1001	Vertical integration and acceleration of studies	Guidance pending. No major barriers or problems identified.
1002	Consolidation of studies	Guidance issued. No major barriers or problems identified.
1003	Expedited completion of reports	Guidance issued. No major barriers or problems identified.
1004	Removal of duplicative analyses	Guidance issued. No major barriers or problems identified.
1005	Project acceleration	Guidance pending. No major barriers or problems identified.
1006	Expediting the evaluation and processing of permits	Guidance issued. No major barriers or problems identified.
1007	Expediting approval of modifications and alterations of projects by non-Federal interests	Guidance issued. No major barriers or problems identified.
1008	Expediting hydropower at Corps of Engineers facilities	Guidance issued. No major barriers or problems identified.
1009	Enhanced use of electronic commerce in Federal procurement	No guidance required. No major barriers or problems identified.
1010	Determination of project completion	Guidance issued. No major barriers or problems identified.
1011	Prioritization	No guidance required. No major barriers or problems identified.
1012	Transparency in accounting and administrative expenses	Guidance issued. No major barriers or problems identified.
1013	Evaluation of Project Partnership Agreements	Guidance issued. No major barriers or problems identified.
1014	Study and construction of water resources development projects by non-Federal interests.	Guidance issued. No major barriers or problems identified.
1015	Contributions by non-Federal interests	Guidance issued. No major barriers or problems identified.
1016	Operation and maintenance of certain projects	Guidance issued. No major barriers or problems identified.
1017	Acceptance of contributed funds to increase lock operations	Guidance issued. No major barriers or problems identified.
1018	Credit for in-kind contributions	Guidance issued. No major barriers or problems identified.

1019	Clarification of in-kind credit authority	Guidance issued. No major barriers or problems identified.
1020	Transfer of excess credit	Guidance issued. No major barriers or problems identified.
1021	Crediting authority for federally authorized navigation projects	Guidance pending. No major barriers or problems identified.
1022	Credit in lieu of reimbursement	Guidance issued. No major barriers or problems identified.
1023	Additional contributions by non-Federal interests	Guidance issued. No major barriers or problems identified.
1024	Authority to accept and use materials and services	Guidance issued. No major barriers or problems identified.
1025	Water resources projects on Federal land	Guidance issued. No major barriers or problems identified.
1026	Clarification of impacts to other Federal facilities	Guidance issued. No major barriers or problems identified.
1027	Clarification of munition disposal authorities	Guidance issued. No major barriers or problems identified.
1028	Clarification of mitigation authority	Guidance issued. No major barriers or problems identified.
1029	Clarification of interagency support authorities	Guidance issued. No major barriers or problems identified.
1030	Continuing authority	Guidance issued. No major barriers or problems identified.
1031	Tribal partnership program	Guidance issued. No major barriers or problems identified.
1032	Territories of the United States	Guidance issued. No major barriers or problems identified.
1033	Corrosion prevention	Guidance issued. No major barriers or problems identified.
1034	Advanced modeling technologies -- Engineering and Construction Bulletin No. 2016-3	Guidance issued. No major barriers or problems identified.
1035	Recreational access	Guidance issued. No major barriers or problems identified.
1036	Non-Federal plans to provide additional flood risk reduction	Guidance issued. No major barriers or problems identified.
1037	Hurricane and storm damage reduction	Guidance issued. No major barriers or problems identified.
1038	Reduction of Federal costs for hurricane and storm damage reduction projects	Guidance issued. No major barriers or problems identified.
1039	Invasive species	Guidance issued. No major barriers or problems identified.
1040	Fish and wildlife mitigation	No guidance required. No major barriers or problems identified.

1041	Mitigation status report	Guidance issued. No major barriers or problems identified.
1042	Reports to Congress	Guidance issued. No major barriers or problems identified.
1043	Non-Federal Implementation Pilot Program	Guidance pending. No major barriers or problems identified.
1044	Independent peer review	Guidance issued. No major barriers or problems identified.
1045	Report on surface elevations at drought affected lakes	Guidance issued. No major barriers or problems identified.
1046	Reservoir operations and water supply	Guidance issued. No major barriers or problems identified.
1047	Special use permits	Guidance issued. No major barriers or problems identified.
1048	America the Beautiful National Parks and Federal Recreational Lands Pass program	Guidance issued. No major barriers or problems identified.
1049	Applicability of spill prevention, control, and countermeasure rule	No guidance required. No major barriers or problems identified.
1050	Namings	Guidance issued. No major barriers or problems identified.
1051	Interstate water agreements and compacts	No guidance required. No major barriers or problems identified.
1052	Sense of Congress regarding water resources development bills	No guidance required. No major barriers or problems identified.
2001	Definitions	No guidance required. No major barriers or problems identified.
2002	Project Delivery Process Reforms	Guidance pending. No major barriers or problems identified.
2003	Efficiency of revenue collection	No guidance required. No major barriers or problems identified.
2004	Inland waterways revenue studies	Guidance issued. No major barriers or problems identified.
2005	Inland Waterways Stakeholder Roundtable	Guidance issued. No major barriers or problems identified.
2006	Preserving the Inland Waterway Trust Fund (Olmsted)	Guidance issued. No major barriers or problems identified.
2007	Inland waterways oversight	No guidance required. No major barriers or problems identified.
2008	Assessment of operation and maintenance needs of the Atlantic Intracoastal Waterway and the Gulf Intracoastal Waterway	Guidance issued. No major barriers or problems identified.
2009	Inland waterways riverbank stabilization	Guidance issued. No major barriers or problems identified.
2010	Upper Mississippi River Protection	Guidance issued. No major barriers or problems identified.

2011	Corps of Engineers lock and dam energy development	Guidance issued. No major barriers or problems identified.
2012	Restricted areas at Corps of Engineers dams	Guidance issued. No major barriers or problems identified.
2013	Operation and maintenance of fuel taxed inland waterways	Guidance issued. No major barriers or problems identified.
2101	Funding for harbor maintenance programs	No guidance required. No major barriers or problems identified.
2102	Operation and maintenance of harbor projects	Guidance issued. No major barriers or problems identified.
2103	Consolidation of deep draft navigation expertise	Guidance issued. No major barriers or problems identified.
2104	Remote and subsistence harbors	Guidance issued. No major barriers or problems identified.
2105	Arctic deep draft port development partnerships	Guidance issued. No major barriers or problems identified.
2106	Additional measures at donor ports and energy transfer ports	Guidance issued. No major barriers or problems identified.
2107	Preserving United States harbors	Guidance issued. No major barriers or problems identified.
3001	Dam Safety	No guidance required. No major barriers or problems identified.
3011	Systemwide improvement framework	No guidance required. No major barriers or problems identified.
3012	Management of flood risk reduction projects	Guidance issued. No major barriers or problems identified.
3013	Vegetation management policy	Guidance issued. No major barriers or problems identified.
3014	Levee certifications	Guidance issued. No major barriers or problems identified.
3015	Planning assistance to States	Guidance issued. No major barriers or problems identified.
3016	Levee safety	Guidance issued. No major barriers or problems identified.
3017	Rehabilitation of existing levees	Guidance issued. No major barriers or problems identified.
3021	Use of innovative materials	Guidance issued. No major barriers or problems identified.
3022	Durability, sustainability, and resilience	Guidance issued. No major barriers or problems identified.
3023	Study on risk reduction	Guidance issued. No major barriers or problems identified.
3024	Management of flood, drought, and storm damage	No guidance required. No major barriers or problems identified.
3025	Post-disaster watershed assessments	Guidance issued. No major barriers or problems identified.

3026	Hurricane and storm damage reduction study	Guidance issued. No major barriers or problems identified.
3027	Emergency communication of risk	Guidance issued. No major barriers or problems identified.
3028	Safety assurance review	No guidance required. No major barriers or problems identified.
3029	Emergency responses to natural disasters	Guidance issued. No major barriers or problems identified.
4001	River basin commissions	Guidance issued. No major barriers or problems identified.
4002	Mississippi River	Guidance issued. No major barriers or problems identified.
4003	Missouri River	Guidance issued. No major barriers or problems identified.
4004	Arkansas River	Guidance issued. No major barriers or problems identified.
4005	Columbia Basin	No guidance required. No major barriers or problems identified.
4006	Rio Grande	Guidance issued. No major barriers or problems identified.
4007	Northern Rockies headwaters	Guidance issued. No major barriers or problems identified.
4008	Rural Western water	No guidance required. No major barriers or problems identified.
4009	North Atlantic Coastal Region	Guidance issued. No major barriers or problems identified.
4010	Chesapeake Bay	Guidance issued. No major barriers or problems identified.
4011	Louisiana coastal area	Guidance issued. No major barriers or problems identified.
4012	Red River Basin	Guidance issued. No major barriers or problems identified.
4013	Technical corrections	Guidance issued. No major barriers or problems identified.
4014	Ocean and coastal resiliency	Guidance issued. No major barriers or problems identified.
5001	General authority for capitalization grants	No guidance required. No major barriers or problems identified.
5002	Capitalization grant agreements	No guidance required. No major barriers or problems identified.
5003	Water pollution control revolving loan funds	No guidance required. No major barriers or problems identified.
5004	Requirements	No guidance required. No major barriers or problems identified.
5005	Report on the allotment of funds	No guidance required. No major barriers or problems identified.

5006	Effective date	No guidance required. No major barriers or problems identified.
5011	Watershed pilot projects	No guidance required. No major barriers or problems identified.
5012	Definition of treatment works	No guidance required. No major barriers or problems identified.
5013	Funding for Indian programs	No guidance required. No major barriers or problems identified.
5014	Water infrastructure public-private partnership pilot program	Guidance issued. The FY 2017 Consolidated Appropriations Bill Statement of Managers directed the Corps to discontinue all work on project-specific public-private partnerships pending establishment of a P3 policy, which is under development.
5021	Short title	Guidance issued. No major barriers or problems identified.
5022	Definitions	Guidance issued. No major barriers or problems identified.
5023	Innovative Financing Pilot Projects	Guidance issued. Federal projects or activities are not eligible for Federal credit assistance. The Administration has proposed statutory modifications to EPA's WIFIA program to enable a broader range of non-Federal water resources projects to be eligible under EPA's credit assistance program, including some types of projects that may have historically been carried out by the Army Corps as Federal projects.
5024	Applications.	Guidance issued. No major barriers or problems identified.
5025	Eligible entities.	Guidance issued. No major barriers or problems identified.
5026	Projects eligible for assistance.	Guidance issued. No major barriers or problems identified.
5027	Activities eligible for assistance.	Guidance issued. No major barriers or problems identified.
5028	Determination of eligibility and project selection.	Guidance issued. No major barriers or problems identified.
5029	Secured loans.	Guidance issued. No major barriers or problems identified.
5030	Program administration.	Guidance issued. No major barriers or problems identified.
5031	State, tribal, and local permits.	Guidance issued. No major barriers or problems identified.

5032	Regulations.	Guidance issued. No major barriers or problems identified.
5033	Funding.	Guidance issued. No major barriers or problems identified.
5034	Reports on pilot program implementation.	Guidance issued. No major barriers or problems identified.
5035	Requirements.	Guidance issued. No major barriers or problems identified.
6001	Deauthorization of inactive projects	Guidance issued. No major barriers or problems identified.
6002	Review of Corps of Engineers assets	Guidance issued. No major barriers or problems identified.
6003	Backlog prevention	Guidance issued. No major barriers or problems identified.
6004	Deauthorizations	Guidance issued. No major barriers or problems identified.
6005	Land conveyances	Guidance issued. The Craney Island Eastward Expansion must be constructed before the Craney Island Dredged Material Management Area land conveyance can be completed.
7001	Annual report to congress	Guidance issued. No major barriers or problems identified.
7002	Authorization of final feasibility studies	No guidance required. No major barriers or problems identified.
7003	Authorization of project modifications recommended by the Secretary	No guidance required. No major barriers or problems identified.
7004	Expedited consideration in the House and Senate	No guidance required. No major barriers or problems identified.

Senator Sanders:

Implementation Guidance

7. One provision (Section 1177) of the 2016 Water Infrastructure Improvements for the Nation Act authorized efforts to study, design, and construct control gates, spillways, and dam safety improvements for aging flood control reservoirs constructed by the Army Corps of Engineers before 1940 that are now owned by non-federal entities. Currently, the Army Corps has not provided implementation language for this project. Please provide a timeline of when the Army Corps will issue the implementation guidance for Section 1177.

Answer: Implementation guidance for Section 1177 has not been completed but will be completed as soon as possible.

Puerto Rico

8. Puerto Rico and the U.S. Virgin Islands were hit by Hurricanes Irma and Maria well over four months ago. Yet, there are still around 400,000 citizens in Puerto Rico without electricity. What lessons has the Army Corps learned from the on-going process of reconstructing the grid in Puerto Rico? How can the Army Corps better prepare for the next time FEMA calls for the help of the Army Corps in rebuilding damaged electric grids after storms like Hurricanes Irma and Maria?

Answer: The Corps continues to participate in and contribute to discussions among the Federal agencies, including FEMA and DOE, regarding lessons learned from Hurricanes Irma and Maria to inform future disaster response involving electrical grid restoration. This would include consideration of various challenges, including geography and the logistics of getting people, equipment, and supplies quickly in the aftermath of a disaster. These discussions would help inform future local and Federal planning and preparedness efforts, and will cover issues such as training, exercises, stockpiling of equipment and supplies as well as development of any additional expertise or capability with regard to potential future emergency power restoration mission assignments.

9. Damage to the Guajataca Dam in Puerto Rico triggered the evacuation of thousands of people after Hurricane Maria. However, this dam is rated as a high hazard potential dam, which means it should have been inspected every one to two years, yet it had not been inspected since 2013. What tools does the Army Corps need to better address failing dams that are also in areas where climate impacts make them more vulnerable to threaten the lives of American Citizens?

Answer: The Guajataca Dam is a non-Federal dam. After Hurricane Maria, the Corps worked on repairs to its spillway under FEMA direction, as part of the overall Federal response in Puerto Rico under the Stafford Act. The Corps had sufficient tools to perform this work. The Puerto Rico Electric Power Authority, which owns this structure, is responsible for its safety and its maintenance.

Senator Whitehouse:

10. Many of the Corps' projects are built with the intention of lasting for years, if not decades. Given the long lives of many of these projects, how is the agency and its non-federal partners considering the effects of climate change, especially along the coasts, in its work?

Answer: In 2013, the Corps released a report on "Coastal Risk Reduction and Resilience," which laid out a range of approaches that can be used in development of solutions to identified water resource challenges that will reduce flood risks in coastal areas, including natural or nature-based features (e.g., wetlands and dunes), nonstructural interventions (e.g., policies, building codes, and emergency response such as early warning systems and evacuation plans), and structural measures (e.g., seawalls and breakwaters).

In addition, for all of its projects, including those along the coast, the Corps considers ways to use engineering to help reduce vulnerabilities (such as the risk of project or component failure) and considers the dependencies among project features (their impacts on each other) over both the short- and long-term life of the project.

11. How does the Corps currently consider ancillary benefits, such as ecosystem resiliency and flood mitigation from longer-term sea level rise, in its benefit-cost analysis for coastal flood mitigation and storm damage reduction projects?

Answer: The benefit-cost analysis considers both the benefits and the costs associated with the risk of changing sea levels over a period of 50 years for the economic analysis and over an engineering planning horizon of 100 years.

12. With structures like the Fox Point Hurricane Barrier and Point Judith Harbor of Refuge in Rhode Island, the Corps has focused on the functionality of these structures under current conditions instead of long-term durability. However, future sea level rise and strong storms will likely overpower these and other Corps structures along the coast.
 - a. Given the time required to identify a new project and eventually complete the work, do you agree the Corps should be thinking now about the improvements and new structures that will be needed in the future?

Answer: All structures require maintenance over time. A decision on the nature and timing of an investment to rehabilitate a structure, improve or replace it, or abandon it, should consider the benefits and costs of each alternative, and the other potential uses of the available funds.

- b. If so, how could this forward-thinking mentality be better incorporated into the cost-benefit analysis the Corps uses to prioritize projects?

Answer: The Corps benefit-cost analysis already incorporates some aspects of changed future conditions throughout the period of economic analysis, generally 50 years, including sea level rise and storm intensity. The Corps continues to explore options for evaluating non-monetary benefits from projects. In some cases, it may be possible to use such metrics alongside the benefit-to-cost ratio to inform investment decisions.

13. The Water Resources Reform and Development Act of 2014 (WRRDA '14) included a requirement, Section 7001, for the Corps to submit an annual report to Congress on proposed feasibility studies and modifications submitted to the Corps by potential non-federal partners. Any proposals that fall under the Corps' missions and meet basic requirements established in WRRDA must be included the report. Congress can then authorize these individual projects.

- a. Have all states been represented in a Section 7001 report to date?

Answer: No. Thirty-eight of the fifty United States have proposals submitted within their boundaries.

- b. If not, do you see a need for more education and outreach by the Corps on the Section 7001 report?

Answer: The Corps publishes information online and routinely reaches out to states and other stakeholders to ensure there is awareness of Section 7001 and an understanding of how to submit proposals.

14. Smaller projects responding to specific needs of town and communities, done through the Continuing Authority Programs, do not need additional Congressional authorization. The Corps, like all agencies, operates within a limited budget and has to prioritize what projects they are able to move ahead with. However, there is a lack of transparency when it comes to how projects are prioritized, particularly CAP projects. This creates a lot of uncertainty for sponsors of the projects, who have committed to share the cost, and other stakeholders. Aside from additional funding to help clear the backlog of CAP projects, do you have recommendations on what could be done to make prioritization more transparent and the Corps' funding rationale better understood by non-federal sponsors and stakeholders?

Answer: Since FY 2015, the Continuing Authorities Program (CAP) follows the funding prioritization process identified in the Statement of Managers for the Energy and Water Development and Related Agencies Appropriations Act, 2015. The process includes maintaining an approximate 20 percent/80 percent initial allocation balance between the feasibility phase and design and implementation phase, and specifically allocating available funds until the funds are exhausted or all capability on active projects has been met, except in the case of CAP Section 14 projects. For CAP Section 14, the Corps allocates funds to the projects that address the most significant risks and adverse consequences, irrespective of phase or previous funding history.

15. Section 1030 of WRRDA '14 requires the Corps to provide a publically available list of prioritized CAP projects and the Secretary's justification for this prioritization. The Corps is also required to provide an annual report of these projects. Please provide an update on the Corps' implementation of Section 1030.

Answer: The information to support this report is under development by the Corps.

16. Extreme weather events put infrastructure at risk. In Rhode Island, Superstorm Sandy almost caused Narragansett Bay to breach the water supply for the City of Newport. The March 2010, storms flooded the Pawtuxet River, overtopping the Warwick Wastewater Treatment facility and sending untreated wastewater into surrounding neighborhoods, the River and Narragansett Bay. What do you see as the Army Corps' role in helping cities and towns respond to these increasingly frequent extreme weather events and ensure the safety of the nation's critical infrastructure?

Answer: The Corps has a variety of technical guidance that can assist communities who wish to undertake their own analysis related to extreme weather, including recently updated guidance on flood inundation mapping, management of water control systems, and detection of changing

hydrologic conditions. The Corps has developed and made publicly available a range of tools for hydrologic analysis and for visualizing expected sea levels. Working with other Federal agencies, the Corps has been involved in aggregating, integrating, and translating the science of extreme weather into actionable options for decision makers, including those at the state and community level. Through its planning assistance to states and its floodplain management services programs, the Corps supports a wide variety of studies conducted at the state and local levels to better understand their flood risks, and address them, including the risks associated with extreme weather events. Corps water managers and emergency managers pay close attention to extreme weather events and continuously work to improve risk communication with local agencies.

17. For the past two years, I have included in my appropriations request for the Army Corps more parity between its inland and coastal Flood and Coastal Storm Damage Reduction accounts. The Corps' FY18 budget proposal sets aside for \$1.32 billion for inland projects under this program, and only \$46 million for coastal projects.

- a. Given the particular and severe risks facing our coasts from sea level rise, stronger storms, and storm surge, do you agree with this disparity between inland and coastal projects?

Answer: Most of the projects that the Corps has constructed to reduce flood risks along the coast involve beach nourishment. These projects do not require nourishment on an annual basis. Over the past several years, the Corps has used a combination of funding – provided both in annual and in supplemental appropriations in the flood control and coastal emergencies, operation and maintenance, and construction accounts, to re-nourish the beaches along our coasts.

The Corps evaluates all of its projects and each potential investment on an equal basis, using established performance guidelines to set priorities. This approach resulted in a portfolio of proposed investments across the Nation, involving all of our programs. These investments, when viewed together, would provide the highest economic, environmental, and safety return to the Nation from the available funds.

- b. Please explain how the Corps developed these inland and coastal budgets.

Answer: The budget recommendation is developed using established performance guidelines that include addressing dam safety concerns, providing high economic returns, and reducing significant risks to human safety. Projects are included in the budget recommendation using these guidelines.

- c. Please explain how the Corps defines a “coastal” or “inland” project.

Answer: In the Corps flood and storm damage reduction program, we use the term “coastal projects” to refer to projects that are designed to reduce the risk of damage from the effects of flooding, wave action, and storm surges in a coastal storm, but not to the flooding that occurs along riverine systems near the coast from such storms. We use this term also to refer to projects designed to achieve those objectives along the coasts of the Great Lakes. By contrast, in this

program we use the term “inland projects” to refer to projects that are designed to provide flood damage reduction benefits from the effects of riverine flooding. Many of these projects are located in the inland regions and river basins of the Nation, but some are located close to or even on our coasts – along the rivers that flow into them.

18. What is the Corps’ role in preparing ports for sea level rise, increased storm surge, and other consequences of climate change?

Answer: For ports that are under study by the Corps, we consider the effects of changing sea levels and related total water levels (e.g., tide, surge, waves) throughout the life of the project. This includes evaluation of impacts to all project components, including channels, jetties, dredge material containment dikes, floodwalls, bridge clearances, wetland functioning, and facilities. For other ports, we have developed simple tools to support local communities as they begin to assess the impacts of these changes, including a publicly available sea level calculator. Technical guidance provides information on how to conduct studies to analyze the effects of sea level rise, increased storm surge, and other consequences of climate change and to develop preparedness and resilience measures.

19. Section 4014 of WRRDA ’14 authorized the Corps to undertake studies for coastal resiliency projects that could be completed under the CAP. The Water Infrastructure Improvements for the Nation Act of 2016 (WIIN ’16), prioritized projects in areas threatened by sea level rise or where future emergency repair costs can be minimized or dredged material can be beneficially reused. It also called on the Corps to convene an interagency working group and conduct regional assessments of coastal flooding risks and resiliency needs. Please provide an update on the Corps’ implementation of Section 4014.

Answer: The Corps issued implementation guidance for this provision on May 16, 2016. The Corps has not yet implemented studies or projects under this authority.

20. Section 1164 of WIIN ’16 expanded the Corps’ authority to remove debris from marine channels and adjacent waters used for recreation and other purposes. Please provide an update on the Corps’ implementation of Section 1164.

Answer: The Corps has not yet implemented work under Section 1164.

21. Section 1173 of WIIN ’16 requires the Corps to hire the National Academy of Sciences to study the utility of innovative materials in water resources projects. Please provide an update on the status of this National Academy report.

Answer: No funding has yet been appropriated for the National Academy of Sciences study.

Senator BARRASSO. Well, thank you very much to both of you for your testimony. We have a number of members here with lots of interest and will ask about certain projects that are going on.

I would like to start. General Semonite, rural communities in Wyoming affected by ice jam flooding, the city of Worland that you are very familiar with, they are anxious to see projects built under the Ice Jam Prevention and Mitigation Pilot Program authorized by Section 1150 in the WIIN Act. Could you just give us an update of the status of the Corps' implementation of this Ice Jam Prevention and Mitigation Pilot Program?

General SEMONITE. Yes, sir. So, right now we have four pilots that we are working. One of these is an active pilot. It is in Mile City, Montana and it goes back to fully look at some innovative approaches to be able to do ice jams. Worland, Wyoming is clearly one of the ones that we want to continue to keep working. We are pending new start approval and funding right now, but we have received a request from a letter to be able to put this in the CAP data base and continue to work this out.

There is a third one in Platte River, Nebraska and a fourth one in Yellowstone River, Montana to be able to continue to find, I think, innovative ways. And you and I have talked about this in the past. We have to be able to figure out how can we use some of these emerging technologies to be able to try to bring down this disaster response.

I have also personally talked to my Cold Regions Laboratory in Hanover, New Hampshire on ways that they can do this, innovative approaches, and continue to infuse those in there. We are certainly willing to do up to ten of these pilots. Right now we have only really seen four different communities that are interested. There is a cost share to this, so that is where the communities have to be able to find available funds. But we are committed to continue to make progress in this ice jam initiative to be able to bring down that risk.

Senator BARRASSO. Thank you.

Mr. Fisher, since the General mentioned the CAP, the Continuing Authorities Program, I just want to ask you a little bit about that, because, as this is carried out by the Corps, it is vital to many rural communities. In particular, one of its several authorities concerns flood risk management challenges. What are your plans to help ensure that flood risk management projects that are backlogged in the CAP program queue are studied and billed in an efficient manner? And is there anything Congress can do to help the program succeed?

Mr. FISHER. So, yes, sir, the backlog is real, as was mentioned earlier, and it applies to every program, CAP included. I believe you are referencing the Section 205 flood risk program. The Administration, we are open to everything, basically. We have seen opportunities for contributed funds agreements, where non-Federal interests can contribute money toward construction, or even operation and maintenance in some cases. There is a lot of discussion, obviously, of the P3 public-private partnerships that this Administration is open to pursuing, as well. But as you mentioned, yes, \$96 billion backlog and a budget that is roughly \$5 billion, \$6 billion a year, that is very real and the Administration looks forward to

working with this Committee to find innovative ways to bolster that CAP program and other programs as well.

Senator BARRASSO. General Semonite, rural communities still face challenges associated with providing long-term water supply and storage. Federal water storage facilities out west continue to lose existing space as a result of sediment buildup. This is a major problem for western States' economies where there are rapidly growing populations enlarging energy industries, agriculture operations.

In 2016, Section 1115 of the Water Infrastructure Improvements for the Nation Act was enacted to help address this problem by creating the pilot programs to enable removal of sediment in Corps and Bureau of Reclamation reservoirs. Can you give us a little status on how things are going there?

General SEMONITE. Yes, sir. And we are worried about sediment buildup. I mean, the Nation has spent a lot of money building some of these structures. We want to make sure, first of all, we are optimizing that capacity. The more sediment goes in, obviously, the less water you can keep in there or the less flood control capacity. On the other hand, that continues to put pressure on the backside of these dams. Wherever we can mitigate that, we want to do it. We need to do it in an environmentally sensitive way. And the particular WRDA you are talking about does allow us to look at 10 different pilots to be able to go back and look at how can we remove sediment from behind dams. To be honest with you, though, we have not found partners right now that necessarily want to go into those pilots. So, we want to continue to stay open to that.

One of the things we do want to do, though, is look at those technologies. We have an environmental advisory board. We bring in some of the best from academia that are out in the Nation. I met with them in the Everglades last week, and some of the technologies we have seen in some areas where they are actually taking sediment, pumping it right over that structure and letting nature put that sediment back down in there. Now, we have to think about the environmental parts of that, but this might not be where you have to come in and dredge out the back of that dam and then find a way of getting rid of it; but how can you use regional sediment management to somehow let nature refresh where that sediment needs to go, and then you are really solving two problems with one.

So, this is some of the innovative stuff we have to do to find out. Don't just do it the old way, just the expensive way; how can we think out of the box and still do it so it is environmentally friendly.

Senator BARRASSO. Thank you.

Senator CARPER.

Senator CARPER. Question, if I could, for Mr. Fisher. Have you ever been to Delaware?

Mr. FISHER. Sir, I have not, not in this capacity.

Senator CARPER. Have you ever been to Maryland?

Mr. FISHER. Yes.

[Laughter.]

Senator CARPER. Well, you have been to Delmarva, but not to the Del portion of Delmarva.

We are proud of our beaches. We have, the last time I checked, more five-star beaches in Delaware, believe it or not, than, I think, maybe any other State. And there is some pretty good competition around us, so that is pretty good talking stuff.

Senator Cardin has a lot of interest in beach nourishment and beach replenishment, and certainly so do a lot of States up and down the East Coast. But for us in our State, we have maybe even more interest in the construction of a dune system that actually helps protect our beaches, not just our beaches, from loss down to Ocean City line, the Maryland line, but a dune system that protects not just our boardwalks, not just our businesses in the coastal towns, not just the folks who live there, our infrastructure, roads, highways, bridges, water, sewer, but all the above. And what we found out in the money that we spend in dune protection for our coastal towns, the cost of that is not cheap, but the cost of that is small compared to the cost of replacing one major hotel. So, it is really cost-effective.

I don't know that we do as good a job as we ought to be able to do on cost-benefit ratio, but here is my question. And if you can't answer this one right off the top of your head, then I will ask you to do it for the record. But it is important to us and it is important certainly to other States up and down the East Coast. But beach nourishment projects tend not to compete well in benefit-cost ratio analysis, which, compared to larger projects like ports. We have a great interest in ports as well, like the Port of Wilmington. How should we update or how could we update the benefit-cost ratio to incorporate more value from these types of projects into the assessment?

Mr. FISHER. Certainly. And I probably will have to do some research on this and get back to you with a fuller answer. BCR, as you know, is about maximizing return on investment; it is an opportunity cost calculation, and we certainly want to be looking at all the benefits of those dune projects and that sort of thing to make sure we are calculating all those effectively. But, yes, I will commit to providing you further information as I further research and briefed on that topic. Thank you.

Senator CARPER. We look forward to that soon. Thank you.

General Semonite, you want to make a quick comment on that?

General SEMONITE. Sure.

Senator CARPER. Let me just say again Delaware has a love affair with the Army Corps of Engineers. We just love the folks who work out of your Philadelphia office and just value very much the wonderful work they do not just for us, but up and down the Delmarva. Thank you.

General SEMONITE. Sir, to address your issue, and I think a theme that I would want to stress today is that just as you said up front, \$96 billion of construction backlog, this Country can't afford that, so we have to find innovative ways of having some of the stakeholders put some skin in the game. And if they are able to do that and somehow we can change the benefit-cost ratio to a point where now their project is able to see funding, then I think we have incentivized a lot of these people to be able to take some of that burden off the Federal Government. Right now, the processes don't necessarily allow, if somebody were to give money in,

to be able to add more to their cost share or to put more money in from that particular area. You would like to think that those would compete better to be able to bring down the Federal bill and also make those things more viable.

So I think as we work with the Committee, is it benefit-cost ratio or remaining benefit-cost ratio, it goes back to how OMB scores these, and how can somehow we find a way of changing some of this to a degree relatively a metric-based process to put a little bit more common sense back into how we use the Federal dollar.

Senator CARPER. Earlier in my time, in fact, when I was Governor, the Federal Government put up a very large portion of these projects on our coast. The State share was raised, as you know, a few years ago. States now pay more than one-third of the cost of most of these projects, which is, I think, appropriate. I think it is appropriate.

I have a question now, if I could, for both Mr. Fisher and General Semonite. In past budget cycles, my staff and I have worked to find out why Delaware projects were not included in the President's budget. A big one that was included was the dredging of the Delaware River Channel and Delaware Bay Channel, which is important for a number of our States, including New Jersey and PA. But on more than one occasion it appears that a given project was somehow mistakenly deleted or omitted during the Administration's budget develop and review process, including the Office of Management and Budget. We find this Administration black box to be a problem and a disservice to the American people. How do we create a more transparent and collaborative process to ensure that local and regional priorities do receive funding?

As you know, while Corps projects have a large national value, many times they primarily impact the local economy or the local health and safety, and it seems this gets lost in the current budgeting process. Any ideas on how we might address this? Thank you.

Mr. FISHER. Well, we certainly want to be working with all the relevant cost share partners and stakeholders on projects, be it in Delaware or anywhere.

Senator CARPER. I like that, Delaware or anywhere.

[Laughter.]

Mr. FISHER. But, no, this Administration, in the budget process, obviously, the Fiscal Year 2019 budget is being developed now, and, with limited resources, we want to make sure that we are targeting taxpayer funds where they are most needed, using risk-informed decisions to target that funding.

Senator CARPER. All right, thank you.

General SEMONITE. Sir, I think the word you used, transparent, we are committed to continue to be up-front and open, and to be able to make sure we are having this dialog. So, you talk about what is a national project, what is a local project. Wilmington Harbor right now is a great example. They are looking to try to have a new access channel, so we assigned an MOA to try to figure out how can we continue to be able to coach them through how to make their project viable and to be able to compete. So that is where we want to make sure we are up-front. What are some of the trap lines? What are some of the lessons learned we have learned? And then at some given point the best thing we can do in the Corps is

to give Mr. Fisher and you our recommendations of where the best use of that Federal dollar is.

Now, if it doesn't meet the cut line, then that is something we have to go back and look at. But I think when it goes to that, whether it is harbor deepening or some of these other infrastructure projects, the value back to the Nation here is unbelievable, and we have to be able to champion some of those the best we can.

Senator CARPER. All right. Thanks so much.

Senator BARRASSO. Senator Inhofe.

Senator INHOFE. Thank you, Mr. Chairman.

Secretary Fisher, following Senator Carper's lead, have you ever been to Oklahoma?

Mr. FISHER. I have not, sir.

Senator INHOFE. All right. Well, we may have to correct that, because we have some specific problems in Oklahoma that we have been working with the Corps, and I think we have sent letters to the Corps and OMB on the importance of prioritizing new start programs, some of our levee system that we have. Senator Boozman and I are very much concerned also about some of the problems we have with our best kept secret, and that is that my State of Oklahoma houses the most inland port in America, and we do have ships, barges coming up and down. But Senator Boozman and I are very much concerned about the condition of the locks and the dams, and we have been talking about that for a long period of time, and I would hope that we would be able to address this as we look at the Fiscal Year 2019 budget, as well as the Fiscal Year 2018 work plan. So just keep that in mind, and any comments you want to make about that at a later time would be fine.

In the WRDA bill in 2007, that was 10 years ago, I authored Section 3134, creating an innovative program for lakes within Oklahoma and elsewhere in America. This had been a contentious subject for a long time and we have had quotes from various people that have been in the Corps for a long period of time saying we are not in the recreational business, we are not going to be involved in that. However, they are involved. Anyway, just to make sure there is no question about that, I added language at that time, 10 years ago, and we actually, in the WIIN Act, more recently, removed the sunset provision to ensure that lake development innovation can be pursued by the Corps and used in other districts, too.

While we have seen a couple of truly great developments, and we have in Oklahoma, we have, unfortunately, been told that Congress did not provide the Corps with any additional authorities needed to actually be innovative.

Now, General Semonite, do you agree with that statement?

General SEMONITE. Sir, you know—

Senator INHOFE. It was made on behalf of the Corps. A quick answer is fine.

General SEMONITE. We definitely want to be as innovative as we can. I am not convinced that there is a funding piece there, though, that I can necessarily put my arms around.

Senator INHOFE. OK. Now, this is what I am going to ask you to do, because I can't find out what it is that we didn't do to give you the authority to do it, so I would like to maybe get a report from you or someone you can have address this subject, say, in the

next week or so. Let us know what are the obstacles out there, because I can't find them.

Second, the city of Bartlesville, Oklahoma currently has three water storage contracts at a particular lake and the most recent contract was secured at a rate of \$67.38 per acre foot. Now, that was the quote that we got, and it has been activated, from the Corps of Engineers.

Now, it is a growing city. They have problems over there and they have actually increased their use by 100 percent, and they really can't do much more. However, they just tried to get another quote from the Tulsa District Corps of Engineers, and that quote was \$1,997 per acre foot. Now, it has gone up from \$16 to \$2,000 an acre foot, and obviously that is something that can't be provided.

Now, my office initiated a dialog between the district and the city to find a compromise. It is my understanding that the district will be reaching out to the division and headquarters in order to do so. The Water Supply Act of 1958 directs the Corps to cooperate with States and local interests in developing water supplies in conjunction with Federal water projects.

Now, the problem that we had with the district office is that this is out of our jurisdiction; we are going to have to go up the ladder. Well, today we are going up the ladder; that is you. And we would like to have your—are you familiar with this problem in that particular city?

General SEMONITE. Sir, I am not familiar other than the last 24 hours. There was a GAO report that talked about Corps pricing. And I hate to say it, but the way that the rules were established several years ago, that pricing is different when it comes to State-to-State and city-to-city. Depends on how much did the project cost, when was it built, what were the authorized—

Senator INHOFE. That is the GAO—

General SEMONITE. That is the GAO report. So, the Tulsa District has provided a proposal to our Southwestern Division as of the last couple days. I will take a look at it. I will get back with you. I agree with you, you can't have that level of an increase, \$67 to \$1,900. Something sounds wrong there. Sounds to me like we have our hands tied with how we charge water supply rates based on the project's original construction cost, the year of the agreement, inflation, etcetera.

Senator INHOFE. OK.

General SEMONITE. So there is some formula that we are probably caught into, and we have to figure out how to get relief from that.

Senator INHOFE. OK, my time has expired, but you know that GAO has stated in this report that they didn't get the ample information from the Corps to be able to make these determinations.

General SEMONITE. Then I will solve that, sir.

Senator INHOFE. All right. Very good.

Thank you, Mr. Chairman.

Senator BARRASSO. Senator Booker.

Senator BOOKER. Thank you, Mr. Chairman.

Gentlemen, thank you both for your commitment to our Country. As you can hear from the passion of the folks, such important

projects for our communities are often the difference between security and safety and destruction or worse in some senses.

I want to focus in about the Rahway River Flood Control Project. This is an extremely high priority for tens of thousands of people in my constituents who live in the impacted area, which happens to be some of the most populated counties in my State. I want to reiterate that the storms in November 2007, Hurricane Irene, 2011 damaged hundreds and hundreds of homes and cost businesses over \$100 million due to the flood damage. I cannot overstate the importance to my constituents and the risks that they face from flooding from the Rahway River and the importance of finding a way forward on this incredible project. I know you are familiar with it, probably pretty intimately, at least I hope so.

There is so much concern at the end of the day that we will have studied this a lot, for over a decade, and little gets done. There is rising skepticism among some of my local leaders, cynicism that we are facing now. And I know that we can work together to overcome that skepticism, that cynicism, and you all have shown to me in the past your incredible creativity and engineering expertise, and I know that if we cooperate together with the local leaders that we can get this done and move forward.

So my first question, Lieutenant General, is I understand that there are ongoing discussions with the Corps that may be willing to both extend the 3x3x3 Rules, which I know you are familiar with, and continue the elevation of the project by doing a detailed geotechnical study of the Orange River Reservoir Dam. Can you confirm that, sir?

General SEMONITE. Senator, I can confirm that we are very involved with this. We do have the authority to extend the waiver, and we have extended a waiver to be able to make that study go longer. The other thing is we are very worried about the safety of that. This is a State dam, not a Federal dam, and some of the proposals that were asked for was to be able to do something that we don't think, in good engineering science, you can just go in and do. They were going to make some more outlet structures.

We want to work with the State to find a solution, but the actual recommended solution from the State we don't think is engineeringly viable. So, this is where we want to work with the locals to be able to figure out how we can get a better solution, continue the study to be able to figure out what options are out there, and then the question is how can we continue to make sure that it does compete for funding, if in fact we see the need out there.

But we are very concerned about the importance of that particular dam and we are committed to work with the State to try to find a solution, but it might not be the solution that the locals want. It is a very tight, constricted area and it is a very complicated dam. We know this one well, so we need to be able to really come up with a solution that is probably going to take a different engineering solution.

Senator BOOKER. No, I appreciate that. I think the commitment of being willing to extend the 3x3x3, that is huge, and your willingness to be creative in working with the locals to come up with a solution that works on both sides, that kind of passion is important. That kind of commitment is important to me.

General SEMONITE. Yes, Senator. And the cost of this is going to be out of the box. This is a very narrow area, so you are going to probably have to make the footprint bigger, so I am just saying it is not going to be an easy fix. But we are committed to find as much innovative solutions as we can, or at least be able to somehow put other mitigating effects in place to be able to bring down the risk to the local people that are there.

Senator BOOKER. That, I appreciate. For Senator Menendez and I this is such a top priority because, as you know, New Jersey is the most densely populated State in terms of population, and this is one of our most densely populated areas in a densely populated State, so I am really grateful for that commitment; it means a lot to me.

I want to, with my last minute here, really quick. The Federal flood risk management standard, you know that that has been changed, and after what we are seeing about a lot of the flooding and the challenges facing Texas and the Virgin Islands and Puerto Rico, the rule that was repealed would simply ensure that federally funded projects in a floodplain, such as roads, bridges, hospitals, infrastructure are built to withstand extreme weather and flooding that is often driven by some of the impacts we are seeing of climate change. So as the Federal Government is allocating tens of billions of dollars to help these communities to rebuild, I think it is essential that we make sound investments that will withstand the extreme weather.

So, the simple question I have really quick is as the Army Corps continues to work to help communities rebuild from natural disasters, how important do you think it is to have strong flood risk management standards that take into account climate science and the sea level rise that is happening?

General SEMONITE. Senator, I think it is very important. We are right in the middle of doing Puerto Rico and the Virgins right now, when you talk about resiliency there, so we have a lot of experience. But it does go back to we can't afford to continue to build products that are not going to be able to take care of what nature could throw at us. So, we have to be able to put that in accordance with the current authorities we have and to be able to continue to think of the deep fight. When we do plans and we do projects, we factor in how is that going to react when it comes to climate change or sea level rise.

Senator BOOKER. Thank you very much, sir. Appreciate your comments.

Thank you, Mr. Chairman.

Senator BARRASSO. Thank you, Senator Booker.

Senator FISCHER.

Senator FISCHER. Thank you, Mr. Chairman.

And thank you, Mr. Fisher and General, for being here today.

As I have mentioned many times before in this Committee, Nebraska operates a very unique system with our 23 natural resource districts, which are based on river basin boundaries rather than county lines. Our NRDs are governed by locally elected boards, enabling them to be effective in addressing local water concerns. Many times the NRDs are the local partners for a lot of the Corps-related projects.

However, due to the Corps' inability to operate in a time-efficient manner, these local partners are faced with astronomical costs and delayed projects. For example, one NRD has been working for the past 8 years to secure a 408 permit to begin construction of the Missouri River levees that protect Offutt Air Force Base, and currently this NRD has spent nearly \$5 million to secure this permit. Even more concerning is that the NRD has worked with six different permit review teams from the Omaha District Corps office. After eight very painful years and millions of dollars spent, the original levee design has changed very little. Consequently, the permitting process has added very little safety or resiliency value to the project. The delay in acquiring the 408 permit has undoubtedly added millions of dollars to the construction costs of the project, but, more importantly, it has placed Offutt Air Force Base, its personnel, private citizens, private and public property, and billions of dollars in infrastructure at an unnecessary risk because the levees are not yet rehabilitated.

General, I will ask you first. In your professional experience, is this delay acceptable? And will you commit to me today to expedite approval of the 408 permit for this project?

General SEMONITE. Senator, I will, not just for that project. What we have done in the last year, and I said this in my opening statement, I hate to say it, but over the last hundreds of years we have migrated a lot of stuff to Washington, DC. that probably didn't need to come here. The real true technical experts, a lot of times, are the local districts and those divisions. So, a 408 process, it got to the point where it was so backlogged that this caused us to be able to look at ourselves and say how can we delegate in power this down to the generals and the colonels that we hire to do this job. So, since I have talked to you last, the 408 program has completely been delegated back to the division and the district; there will be no 408 approvals in Washington, DC.

I don't know the exact process on the Offutt one, but I will find out, ma'am.

Senator FISCHER. But, sir, my issue here is with the district office, it is with the district office that has had six different permit review teams, that has spent 8 years in reviewing this project that has cost local taxpayers \$5 million. And we can't get this done for Offutt Air Force Base, which is home to the 55th Wing, which is home to STRATCOM, to build levees to protect this base. That is my issue, sir, it is with the local district.

General SEMONITE. OK, so, ma'am, I have to find out. I don't know exactly this deal. Most of the time the districts do have to send it up the chain. It starts at the district, but it had to come to Corps Headquarters, so we have delegated it down. We know Offutt very well; we are building STRATCOM's headquarters. We are very committed to the Air Force contingent back at Offutt, so I will find out what the status of this permit is. And unless there is something that we are doing that is either not in the realm of engineering science, there should be no reason why we can't find a solution to that permit. I don't know the details, so I can't promise you we will approve it, but we will certainly get rapid resolution.

It goes back to this whole streamlining thing. We should not have to take years to be able to resolve permits.

Senator FISCHER. And I would appreciate that, because it affects the base, it affects national security, it affects our local communities. So, I would appreciate hearing from you soon on that, sir. Thank you.

Mr. Fisher, how do you believe the Administration can assure us that the Corps is operating effectively and efficiently so that projects can be budgeted for completion and finished to provide for the public health and safety of the communities and citizens that these projects were designed to protect?

Mr. FISHER. Sure. Thank you. As has been discussed today by various members and myself, we recognize the construction backlog, and this Administration certainly wants to look at the innovative ways that the General has mentioned, contributed funds, other partnerships that, when we authorize something in a WRDA bill, that we can ultimately get to a completed project on those things.

Senator FISCHER. Well, thank you. And I would ask if you will commit to me that the Corps is going to review Section 408 permitting process and determine if it is needed for flood control projects. And once the Corps has made this determination, will you provide an update to this Committee?

Mr. FISHER. Yes, I can commit to that, working with the General on the 408 process and filing any report and communication that is needed.

Senator FISCHER. Thank you. I look forward to hearing from both of you.

Thank you.

Senator BARRASSO. Senator Cardin.

Senator CARDIN. Thank you, Mr. Chairman.

Secretary Fisher, thank you for your testimony, particularly looking for innovative ways. We all recognize that the backlog and resources are a mismatch here, and we have to find ways to move forward on very important projects for our communities and for our economy.

General Semonite, I appreciate very much your leadership in so many ways working with us. I will just mention what Senator Carper mentioned on beach renourishment. We talked about adapting to the realities of climate. The beach renourishments have saved millions and millions of dollars in property losses and has been our first offense against these storms. So, there are many reasons why we are pleased that we have been able to keep, actually we are a little ahead of schedule on the beach renourishments on the Atlantic coast of Delmarva, so thank you very much for your help in all of that.

I want to talk about one of the highest priorities in Maryland. You are not going to be surprised that I am going to mention Mid Bay. But I want to go back to Poplar Island, which was innovative at the time. We had never had a project that would be a location for dredge material, but would also be an environmental restoration where we would have a win-win situation that would not only allow us to move forward with dredging that was desperately needed for the economics of the shipping lanes, but also give us a plus for the community, which helped their local economy as well. So,

it was a win-win situation and Poplar Island has been very, very successful thanks to the courage of Congress to authorize this and the Corps to move forward with it.

The challenge is that we now need a second location, and Mid Bay is the second location within the Chesapeake Bay for the location of dredge materials. It has been authorized by Congress in 2014, so we are on schedule.

Just to followup on Senator Fischer's point about time, we need to be fully operational by 2029, and, in order to meet that date, we can't lose any of the dates moving forward. And we are concerned because it has not been budgeted for the first phase of preconstruction engineering, which is a matter of concern to all of us.

So my question to you is will you work with this Committee to do whatever we need to do within the next WRDA authorization to make sure Mid Bay stays on schedule? We understand funding issues, but stays on schedule from the point of view of congressional authorization?

General SEMONITE. Sir, I will talk a little bit about the project and I will let Mr. Fisher talk perhaps about the funding and the future commitments.

First of all, you and I met here a couple months ago. We had to get a revalidation on that done. The dredge material management plan has been approved since you and I met. We do have now the report. I will sign by the 31st of January basically a revised report that goes back to Mr. Fisher that validates that particular thing.

I think for all of the members in the Committee, I am concerned about dredge material management, and we, as we continue in this Nation to deepen harbors or to keep these harbors maintained, that material management is getting harder and harder to deal with. And if we don't think of innovative ways like Poplar Island and Mid Bay to be able to find environmentally sensitive ways of doing it, we are going to end up shutting down some of these harbors, and we can't afford that to happen. I was the guy that briefed Mid Bay back in 2007, when we came in here to say that this was a good project.

So, right now, what will happen is that report that I will sign will go to Mr. Fisher. It has to be cleared by OMB. If that happens and Mr. Fisher has the ability to be able to put PED money against it without any additional authority, he has that under his control. So, we think that from a Corps perspective we are on plan to continue with the process.

And I will let Mr. Fisher talk about any of the funding commitments.

Mr. FISHER. So, yes, we certainly want to work, when it gets to my desk, for there to be no surprises. I want to be able to work hand-in-hand with the General so that when it does come to our office we can expedite and help the project move forward and meet those 2029 and other milestones and deadlines you referenced.

General SEMONITE. I think, Senator Cardin, the other thing is we are using Mid Bay and Poplar Island as ways around the whole Nation that we should be doing some of this. We are looking at an option right now in the Upper Mississippi River. We have some other options we are working out in California. This ability to be

able to find an ecological restoration, but done on dredge material, is a smart way to go. We did the same thing in New York Harbor and Jamaica Bay, so it is the way. The Corps has to think out of the box to solve two problems with one.

Senator CARDIN. Well, General, I very much appreciate your leadership on these types of projects.

Mr. Secretary, I just urge you that in the OMB-type bureaucracies, these types of programs are not well understood, and unless we have an advocate, it can be delayed, and when it is delayed it looks like it could become an earmark in Congress rather than an authorized program by Congress. We have those hurdles we have to overcome. So, all I am suggesting is to stay on schedule, and I appreciate your willingness to do everything we can to stay on schedule. It does require us to be innovative to make sure that the formal requirements have been met so that the funding can continue and we don't run into a process obstacle from OMB, so we need your help.

Thank you, Mr. Chairman.

Senator BARRASSO. Thank you, Senator Cardin.

Senator ERNST.

Senator ERNST. Thank you, Mr. Chair.

Gentlemen, thank you for being here today.

General Semonite, always good to see you. I am sure you know the topic that I am going to bring up this morning, the Cedar Rapids Flood Mitigation Project.

Mr. Fisher, you and the General have both made references to value back to the Nation when it comes to the benefit-cost ratio. But when you talk about value back to the Nation, I think when you are referring to the BCR, you often, or what that brings to mind is the fact that those places with higher property values are worth much more to our Nation than the rural areas where property values are lower. And, since 2008, Cedar Rapids has experienced two major floods that have cost the city billions, billions of dollars in damages and lost economic activity.

Despite being authorized in WRRDA 2014 and mentioned for prioritization in 2016, the project has not received any Federal funding due to the low benefit-cost ratio that results from the city's relatively low property values. The Cedar Rapids Flood Project is \$600 million in total; the Federal cost share of that is only \$73 million. So, the city is bearing the brunt of that project, while the Federal Government would have \$73 million to contribute.

Now, going back to the BCR, the metric, as currently calculated, is very problematic. The lives and livelihoods of the people in Cedar Rapids are just as important as those of individuals who reside in those coastal areas with higher property values. A solution is needed to ensure that all areas of the Country have a fair shot when competing for these important Corps projects.

So, General Semonite, we have talked about this before. I am going to refer back to the December confirmation of R.D. James, the President's nominee to be Assistant Secretary of the Army for Civil Works. He committed to working with me and OMB to modify the BCR metrics in a timely manner, and I am going to quote his words: "It's not right that there's people in this Country who will

never ever get any type of water infrastructure project under the current BCR analysis.”

Do you agree with Mr. James’s assertion, and do you also agree that the metrics need to be changed?

General SEMONITE. Ma’am, I personally do agree that the metrics need to be changed. We can’t do one-size-fits-all or one-metric-fits-all. Your specific area is one where the local people out there saved lives because they were very, very aggressive in getting that flood fighting done, and we were lucky, to a degree, that somebody didn’t get hurt out there. But I think we have to go back in and take a look at this. I am not convinced, though, that under the current metric we are going to see the light of day on this one. So, this is where we have to do something different, either change the metric or go back and somehow reformulate the project to be able to figure out how can we get the cost down and maybe bring the risk down. I had a meeting with my guys yesterday to say we have to be able to figure out how to solve this somehow. Just plugging through and beating our head against the wall on this one is not going to make progress, so we either have to change the metric or go back in and actually say is there some way that we can redesign it to come into a benefit-cost ratio that is in line with current OMB metrics.

Senator ERNST. I appreciate that, and I will hold you to that because we do have to make progress on this. We have been through a number of flood events there and we will probably have another flood event before we get this solved.

In Fiscal Year 2017, five projects received funding under the human safety exception, five, human safety exception, which gives the Corps discretion to fund projects with low BCRs if it deems there is a significant risk to human safety. Four of the five projects were in California. Four of five. And in a December 2016 letter to me, the Corps indicated that the decisions are determined on a case-by-case basis.

Can you shed some light on this process, because, as we have discussed in this Committee before, there does seem to be a black hole of decisionmaking? Can you talk to me about the process and how those decisions are arrived?

General SEMONITE. So, ma’am, I am not exactly an expert on this, but I did talk to Mr. Fisher yesterday. I think we both have to take a look at this process and go back, especially on that particular project, is there the ability to be able to apply this human exemption back on that particular project and revisit that decision, if nothing else, based on some of the other ones we have learned, and based on the fact that I don’t necessarily see this thing happening the normal way. So, unless we are innovative in thinking what other tool in our kit bag can we use to get it authorized, then I don’t see it happening, so this is where I think we both have to take a hard look at it.

You and I have talked several times on this. I would love to come back and say here is the realm of what, if anything, the Committee needs to do to have this one see the light of day.

Senator ERNST. We will have you back, sir. You are welcome in my office any time, and I look forward to having those discussions.

General SEMONITE. Thanks, ma’am.

Senator ERNST. Thank you very much.

Senator BARRASSO. Thank you, Senator Ernst.

Senator WHITEHOUSE.

Senator WHITEHOUSE. Thank you, Chairman.

Gentlemen, thank you very much for being here. We look forward to working with you as we do our next WRDA bill. And although this is not always a bipartisan Committee in the area of interest to you, it is a bipartisan Committee, and I hope you take advantage of that fact.

One of the predicaments that coastal States like mine face is the sea level rising along our shores. NOAA has recently increased its predictions for global sea level rise and, in certain areas, particularly in my State, because of the way the ocean flows and works, that actually gets amplified a little bit further.

Let me ask you first if the Army Corps has any quarrel or dispute with those NOAA sea level rise projections.

General SEMONITE. Sir, I am not sure that I am smart enough to know on how they apply to Rhode Island right now. I don't think, fundamentally, we have any—

Senator WHITEHOUSE. Well, we will take care of that for you. We have very good people working on it.

General SEMONITE. And, sir, I will ask the New England District as well so that we can take a look. I know you are specifically concerned about—

Senator WHITEHOUSE. Do you have any quarrel or dispute with the NOAA general sea level rise findings that they have proposed?

General SEMONITE. No, sir.

Senator WHITEHOUSE. So, you will be taking that information into account in your planning of coastal projects?

General SEMONITE. We take that, along with any other technical information that is out there, sir. Our expectation is to make sure we are using the best science available.

Senator WHITEHOUSE. And particularly where you are dealing with long-lived projects, it is important, is it not, to understand the conditions that those projects will be facing all the way through their useful life, and not just at the point of completion of the construction?

General SEMONITE. Fox Point is a great example of that, sir.

Senator WHITEHOUSE. Yes. We are probably going to have to rebuild all that at some point fairly soon, and we have people in Rhode Island starting to look at how we wall off the city of Providence from much heightened storms.

We have an additional problem, which is that the FEMA projections for coastal flooding have, over and over, been proved very badly wrong. In Houston and in Florida they just had some pretty harsh experience of what the flooding actually looked like compared to what FEMA maps had predicted. In Rhode Island we have very good work that has been done at the local level looking into how FEMA got its maps done with huge anomalies like multi-foot discrepancies on either side of one of the transects that gets done, which is obviously impossible in nature, and yet was obviously satisfying to the contractors who did this work for FEMA.

So, I think we have two problems. One, as Members of Congress, we need to make sure that FEMA's mapping gets up to speed and that communities are not being asked to rely on false information

and bad mapping estimates. But the second thing is we have you to work with. And to the extent that you, in your projections, are relying on those same FEMA maps, and not trying to improve or supplement them, your work faces the same problem that we face. How are you addressing this problem of FEMA's erroneous coastal flood mapping?

General SEMONITE. Sir, I probably don't have a good answer for that on the fact that I don't think we lean just on FEMA. I think we look at the rest of that science out there. NOAA is another very, very reliable source. I don't think we are 100 percent reliable on FEMA. We take that information and obviously there are going to be different interpretations of it, but if you need to, I will certainly come back and give you a better answer specifically with Rhode Island. But right now I think when it goes back to you have two things you addressed. One is future projects we have to look at, how do we make sure we wrap sea level rise and climate change into that; and then the other one existing infrastructure. That barrier is a 1958 barrier, so a lot has changed in the last 50 years. How do we make sure—

Senator WHITEHOUSE. What used to be adequate is not adequate.

General SEMONITE. And then is there a modification we can make? Do we need to figure out how to study it? But you are right on the point. We have to be able to figure the requirement and the risk before we can start putting an engineering solution in.

Senator WHITEHOUSE. I am down to 30 seconds, so let me ask my last question, which is that in your Fiscal Year 2018 budget, the Army Corps of Engineers designates \$1.32 billion for what the Army Corps describes as inland projects. And the Fiscal Year 2018 budget defines \$46 million in proposed expenditure for what it defines as coastal projects. That is a 30:1 ratio favoring inland projects over coastal projects. Should that be the case? And particularly should that be the case in the light of the dramatic changes that coastal States are seeing?

Mr. FISHER. Yes, Senator, I will take that question.

Senator WHITEHOUSE. Because we are on the losing end of 30:1 in Rhode Island.

Mr. FISHER. Right. I understand that. I appreciate the concern. The budget amount, Fiscal Year 2018 budget amount is appropriate given the President's fiscal priorities and the Corps of Engineers' Civil Works responsibilities, and the need to reduce the Federal deficit, as well. But I appreciate the concern. I will certainly look into that discrepancy between inland versus coastal and look forward to working with you and this Committee further on that and what the rationale behind that might be.

Senator WHITEHOUSE. Thank you. Thirty to 1 seems like a lot, particularly given what is happening along our coasts. Thank you, sir.

Senator BARRASSO. Senator Shelby.

Senator SHELBY. Thank you, Mr. Chairman.

Secretary Fisher, thank you. We are hoping before long you will only have one hat to wear, because it is difficult to wear two, but you are doing a good job of it. But I know that you are in the policy area; I know what your job is, to approve things. I don't know if you have been to Alabama or not, but I know you are aware of our

problems down there in Mobile and what we are trying to do, and that is what counts. But I know the General has; he has spent a lot of time in the Mobile area and he knows, so I want to address some of my questions to him.

General, we have been through this before and I have talked with you about this, but bring us up to date on your view of where we are going, where we are as far as deepening the Port of Mobile from 45 feet, say, to 50 feet, and also widening it, because a lot of us believe that is a game-changer down there.

General SEMONITE. Senator, I think you are the one that said your top 10 priorities are Mobile Harbor.

Senator SHELBY. No. 1.

General SEMONITE. Yes, sir. So, we certainly understand that. There is a lot of potential in Mobile Harbor, as there are in a lot of these other coastal ports that continue to help the Nation's economy. Right now we are right in the middle of a GRR, a re-evaluation report. As you and I have talked, I would love to be able to get that done earlier. Our current estimate is to have that done by November 19, which will then set that up for Mr. Fisher to be able to approve PED money, which is that design, which means that theoretically you could continue to see a lot of progress going.

I would love to try to push that to the left. I will talk to the district commander and see what we can do to accelerate that. On the other hand, because we want to make sure we have a good project, I would rather get it done right and have all of the right stuff, than try to do it too fast.

Senator SHELBY. We want you to do it right.

General SEMONITE. So, we are committed to meet that November 19 date. If there is ever a time where I think we can cheat that to the left and do it the right way, we will certainly do that.

Senator SHELBY. In your judgment, what will deepening a port from 45 feet to 50 feet do for the port itself, as far as—

General SEMONITE. Well, one of the things is that businesses are going to go where they are going to be able to get the best return on value and they are going to make the most money, so they have to come into a port these days and be what we call light-loaded. In other words, if they can't use the full 100 percent optimization of that particular ship, then that means that port is less viable. They are going to go somewhere else. And we are deepening a lot of ports certainly in the Gulf and in the East Coast. So that means that at some point you are going to find that businesses would be more likely to come to Mobile if they can get that extra 5 feet of depth.

Now, I think the other part of that is that we also have to make sure that our commitment back to protecting the environment is done right, and Mobile Harbor, sir, you need to know, is one of the case studies of the right way to do that. We are using that dredge material management and we are taking that to either put in to be able to recreate wetlands on the east side of the bay or even to put that back on one of the—

Senator SHELBY. In the Dauphin Island area.

General SEMONITE. The Dauphin Island, as well. And there are some differing opinions as to the deepening of the harbor with respect to perhaps erosion on Dauphin Harbor. We aren't necessarily

in agreement with that particular opinion. We think you can effectively deepen Mobile Harbor without causing undue environmental damage.

Senator SHELBY. Well, we appreciate your work there, and also Secretary Fisher's. I am going to continue to work with you because, as you said, this is my No. 1 priority, and I believe it is the No. 1 priority for the region there. Thank you.

General SEMONITE. Thank you, Senator.

Senator BARRASSO. Senator Van Hollen.

Senator Van Hollen. Thank you, Mr. Chairman.

Mr. Fisher, General Semonite, good to be with you today. I just have a couple questions following up on some of the issues Senator Cardin raised.

General Semonite, you have been in a number of meetings on that issue with respect to the Mid Chesapeake Bay project, which is essential for creating an ecosystem with the dredge material from the channel to keep the Port of Baltimore competitive. And my understanding is that both of you said that you would get the predesign funding ready so that we could also get to the construction funding within the current authorization window, is that correct?

Mr. FISHER. I don't believe we committed to the PED funding; it was certainly mentioned and we will certainly take a look at it as that moves from General Semonite's office to mine, absolutely.

General SEMONITE. Senator, just a quick update. The material management plan has been done since we talked last. Right now, I will sign a validation of that particular project by the 31st of January and give it to Mr. Fisher. It does have to clear OMB. Senator Cardin and I just talked about that, but the bottom line is, once that clears, then it is the Secretary's decision to go ahead and put PED. But we don't need any additional authority so we can start right into the planning and design.

Senator Van Hollen. So you can move forward with that aspect of it before you get the authorization.

General SEMONITE. It does have to clear OMB, as I understand it.

Senator Van Hollen. I just want to make sure I understand the timeline and which budget submission we are talking about here. So, this ultimately has to be in the President's budget submission, is that correct?

Mr. FISHER. Yes, the PED funding would need to be in that submission. And like the General mentioned, I will certainly commit to working with OMB so that they are aware of this and they are getting everything they need from the Corps and my office as well.

Senator Van Hollen. OK. Have you had any conversations with OMB about this project? Either of you gentlemen.

Mr. FISHER. To date, no, I have not.

General SEMONITE. I have not, sir, not on that one.

Senator Van Hollen. OK. If I could just ask a broader question with respect to the Harbor Maintenance Trust Fund. I don't know what input, if any, either of you have on those issues. Is that something you are very involved with, the expenditure of those funds?

Mr. FISHER. Yes. We budget for those, yes.

Senator Van Hollen. So my question is, given the current backlog, I believe it is about \$56 billion in backlog in the Harbor Maintenance Fund and \$3.24 billion in the Operation and Maintenance Fund, the \$56 billion being the shortfall in the construction and \$3.2 billion in the Operation and Maintenance Fund. Do you believe that the Congress should direct more of the funds from that account into harbor maintenance at this point in time in order to make sure that we have the dredging that we need to make sure our ports are competitive?

Mr. FISHER. I would say that while additional funds can certainly be expended for critical dredging and maintenance of coastal harbors and channels, the current budget, the Fiscal Year 2018 budget proposed by the President is the appropriate amount given the President's fiscal priorities and the responsibilities of the Corps' Civil Works program. But I do look forward to working further with you and this Committee to find innovative ways to use that trust fund and get the most out of it.

Senator Van Hollen. Well, do you agree with the assessment that there is a \$56 billion backlog in construction projects in harbor maintenance?

Mr. FISHER. I don't know the number, sir, but I am very aware that there is a backlog.

Senator Van Hollen. And the purpose of these fees that go into a fund are for harbor maintenance, isn't that the case?

Mr. FISHER. Yes.

Senator Van Hollen. So how would you justify diverting funds that were raised for that specific purpose from people who were essentially paying a user fee, how can you justify diverting those funds for other purposes within the budget?

Mr. FISHER. Sir, I don't believe we would try to justify that. We want to be able to use the funds for that purpose which they were intended.

Senator Van Hollen. So you would support an effort to make sure that more of the funds that are raised into the Harbor Maintenance Fund go for that purpose, is that correct?

Mr. FISHER. Yes.

Senator Van Hollen. OK. Thank you.

Thank you, Mr. Chairman.

Senator BARRASSO. Senator Boozman.

Senator BOOZMAN. Thank you, Mr. Chairman. I just want to take a second to echo what Senator Inhofe said earlier about the importance of the McClellan-Kerr Waterway for not only the State of Arkansas and the State of Oklahoma, but the entire region and the whole system put together.

Lieutenant General Semonite, certainly, I agree with you, I think all of us agree with you that we simply don't have enough appropriations to properly address America's crumbling water infrastructure, and infrastructure in general. Because of our debt and deficit, though, we are certainly in need of innovative funding mechanisms. One of the tools that the Corps has at its disposal is the WIFIA program that was established in WRRDA 2014. While the USEPA, Environmental Protection Agency, has published guidance, received appropriations, and issued a request for projects to begin implementing the EPA WIFIA program, the Corps WIFIA program

has no published guidance or Federal funding. The final WIFIA authorization of appropriations for the Corps and the EPA is 2019. The WIFIA program has great leveraging power to make taxpayer money go further, while also incentivizing the private sector to get involved in public-private partnerships, the P3s that we are hearing so much about right now.

Can you tell me does the Corps not view the WIFIA program as a viable option to address infrastructure? Also, what steps has the Corps taking to get the WIFIA program off the ground, if any?

I will take either one of you. Mr. Secretary?

Mr. FISHER. This is probably going to be one of these questions I have to get back to you on. I need to get a fuller brief. I know that the Corps has a lot of federally owned and operated projects. When you take a look at how WIFIA applies in that instance, as well as what you reference, P3s, we need to determine what actions are going to be required to foster that public-private partnership investment as well. So, if I can, I will have to come back to you on that.

Senator BOOZMAN. It didn't sound like it is a priority.

General SEMONITE. Senator, one of the things that we are doing, and it goes both for P3 and WIFIA, is that we have to make sure we have that policy. The House did pass guidance that the Corps should slow down on any P3s, actually banned us from doing P3s, other than Fargo-Moorhead, which is a project in North Dakota, until we establish policy. And we certainly understand we have to have some degree of policy. We are, right now, drafting that WIFIA policy inside of our headquarters. We will get with the Secretary to work through that. I do think we have to continue to work down this road because, as you said, we have to find innovative ways of doing that.

And I think this is something that both the Secretary and I could come back to give you, to the Committee or you personally, an update of where we are going; what are the milestones, what do we hope to achieve, when are we going to get it done.

Senator BOOZMAN. No, I understand. The House also, in 2014, passed the WIFIA program, and earlier you talked about on time, on budget; and there is a huge lag here. And that is one of the problems that we have with the bureaucracy, is this kind of thing.

In WRRDA 2014 and the Act of 2016, Congress attempted to advance projects by allowing non-Federal entities to fund projects by expanding reimbursement opportunities and credit. In December 2016, the GAO reported that non-Federal sponsors are leading \$4 billion in Corps-related studies and projects. From that \$4 billion, the Federal Government has reimbursed \$400 million to cover some of the Federal costs related to those projects.

Lieutenant General Semonite, what can non-Federal entities expect from the Federal Government regarding credit and reimbursement opportunities? Also, what else can the Federal Government do to incentivize non-Federal entities to get involved in more projects?

General SEMONITE. So, I will answer it in two ways. One is that we do have a relatively robust program for non-Federal sponsors to be able to put money in, and we call those either contributed funds or accelerated funds or advanced funds, and there are different

rules on each type of those three. But that way, if a stakeholder wants to go faster, they can put in their money. And a lot of times they will advance those moneys up front so we can start that project, get it going, and then give them credit down the road. And that program works pretty well and we have streamlined our ability to receive funds, and you have given us some extra flexibility to be able to do that.

I think the other thing we have to look at is it goes back to this point of if a stakeholder is ready to put more funds in, then, like I said earlier, that should make that benefit-cost ratio revised, because the actual cost to the Federal Government is now much less. And if you have a project that is close, if it is 2 to 2.3 or something and somewhere there is that extra money put in, that would advise that mass, so now you are going to be able to get that across an OMB metric. And although I think the metric ought to be changed, if in fact it is not, at least it shows if a stakeholder puts skin in the game and puts money and contributions in, now, then, that will incentivize the process and be able to get those projects approved.

So, I think this is goes back to this benefit-cost ratio versus revised benefit-cost ratio, and you and I have talked about this in the past, sir; how do we continue to work with OMB to find some innovative ways to be able to really bring down the burden on the Federal Government.

Senator BOOZMAN. Thank you very much, and we do appreciate your hard work.

Senator BARRASSO. Thank you, Senator Boozman.

Senator CAPITO.

Senator CAPITO. Thank you all for your testimony.

Thank you, Mr. Chairman.

I was going to ask you about the WIFIA program, but my colleague from Arkansas did a good job in talking about that, and hopefully we will get some further information. Certainly, as we look at an infrastructure package coming in from the President, there has been a lot of talk about modeling things after TIFIA, which is what WIFIA was modeled after. But if, for some reason, there are obstacles there, I think we need to make sure that we know exactly what they are and how to avoid those in terms of a vibrant infrastructure package.

I am from West Virginia. We have the Mon River locks and the Ohio River locks, obviously, I would suppose, some of the oldest locks and dams in the Country, particularly on the commercial side. And we have seen over the years how one large project like Olmsted can crowd out all of the other projects. So I guess, just briefly, what is the status of that project? And, in the future, do you see or how do we prevent a high profile, say, port project crowding out all of the other projects, because there is so much need, and how do you prioritize that as you are moving through to avoid this kind of situation in the future?

General SEMONITE. So, the Olmsted project is going very well. We are on plan to be able to continue to bring that to closure here in the next year. I think that that will allow some additional investment in other construction accounts in the years out there.

One of the challenges, and maybe one of the successes, and the Committee has done quite well at it, if in fact there is a special,

I will call it a bin of projects, how do you somehow, as opposed to having everything rack and stack, ma'am, against the overall bin, how do you carve out some?

A good example is refuge harbors. Right now there is a certain bin that we put a certain amount of money into on small harbors that would never compete well against a large harbor. So, if there are some special categories that we could then carve out to be able to make sure they do compete within that sub-bin, I think that is a pretty good model to be able to say big projects are going to compete on their own. But where we really do have equities out in some of these niche capabilities that just can't compete because of the benefit-cost ratio, we ought to look at that. And it really goes back to this idea you have given us a lot of tools. Have we used those to the best of our advantage to figure out every single way we can try to get some of these projects approved? It doesn't mean more money, necessarily, but it means that they will be able to compete better against the existing funds that are available.

Senator CAPITO. I would say, too, for the areas most affected of the smaller projects, the impacts can be as great, maybe not economic impacts as measurable, but ability to grow, live, and prosper in a certain region certainly are critical to having those infrastructure. And a lot of times you can get a bigger bang for your buck, too, because they are less expensive.

General SEMONITE. Sure.

Senator CAPITO. You know, I think one thing that was a great thing that we did in the last WRDA bill, I think it was the WRDA bill, when the revenue from diesel fuel went up and Congress increased that tax from 20 cents a gallon to 29 cents a gallon. Now, I can tell you I have been in Congress for probably longer than some other people would want me to be, but I can count on one hand how many people have come in my office and said we will help pay for this. You know, they weren't looking for the Federal Government to actually be the be-all and the end-all, but we will take this is so important to us, it is such an economic driver for us that raising the tax on something we use every day as a critical part of our expenses is something that we need to do and we are willing to do.

So, I think if we can look for other ways to do that, you know, in general, in the infrastructure package I think would probably be a good idea.

Streamlining of the regulatory process, do you have a dashboard now where you have all your different agencies weighing in, or would that concept be good for you as we move forward in some of these larger projects, where the stakeholders can find out exactly where they are, when they are, and how they expect to get where they want to be, whether it is you, EPA, Fish and Wildlife, Forest Service? You can imagine how confusing it is for all of the different agencies to figure out, particularly on the NEPA review issue.

General SEMONITE. So, Senator, I did talk in the beginning. We are beginning to streamlining these, and a lot of that does go back to delegating that authority down to a level that has the capacity and the competency to be able to do that, so we are seeing progress there.

We have a series of different dashboards. I would like to think that they are responsive back out to the public. But we are doing about 80,000 permits now, so you can come back onboard, see the status out there. Sometimes, though, if it is not responsive enough, we want to be able to have them call into the district to find out what is out there. Sometimes the applicant doesn't put in all the right things, so they might think they have supplied everything; we might still be waiting on something; and that is where the dialog has to go back.

I think we have to continue to look at more innovative ways from an IT perspective of how can we be more transparent and be able to be more responsive back out there. So, I am not sure exactly, if in fact we are meeting the need. If not, I will certainly try to change what we have to do. But we are committed to trying to give responsive feedback to permit applicants so they know what the status of their permits are.

Senator CAPITO. Well, just anecdotally, because I have you in front of me, I would like to say that the Huntington Corps and the Pittsburgh Corps are great to work with; they have been very responsive with our office, and I would just like to give them a pat on the back. Thank you.

General SEMONITE. Thanks, ma'am.

Senator BARRASSO. Thank you, Senator Capito.

Senator GILLIBRAND.

Senator GILLIBRAND. Thank you, Mr. Chairman.

General Semonite, I am concerned about the progress of the Hudson-Raritan Estuary Ecosystem Restoration Study that is currently being undertaken by the Army Corps. This comprehensive study will result in environmental restoration projects across the New York-New Jersey region. Section 1322 of the 2006 Water Infrastructure Improvements for the Nation Act directed the Army Corps to expedite completion of this study. However, it continues to be delayed due to bureaucratic hurdles and restrictive Army Corps policies that make it difficult to complete large, complex studies such as this.

Will the Army Corps prioritize completing this study as soon as possible?

General SEMONITE. Senator, we will. I would like to come and probably have our guys lay that out for you and be able to make sure we give you more detail on exactly what some of the challenges are there, but we are committed to that study. It is an important area. There is risk there, without a doubt, and we do want to continue to be as aggressive as we can in bringing this study to closure.

Senator GILLIBRAND. Concerns have been raised to my office that completing the Hudson-Raritan Feasibility Study has been made difficult by the Army Corps' 3x3x3 Rule, which requires feasibility studies to be completed in 3 years, cost up to \$3 million, and involve all three levels of Corps review throughout the study process.

What flexibility does the Army Corps have to adapt study requirements for large, complete projects, like the Hudson-Raritan study, that cannot conform to the restrictions of the 3x3x3 Rule because of their size and scope?

General SEMONITE. So, Senator, like all rules, we put that in effect to try to be aggressive, to try to be able to bring down our timelines, find out ways of being more economical studies and doing them quicker. Unfortunately, some of these large studies do have to take more than \$3 million and more than 3 years, so we have a process. The 2-star general sitting behind me, he is the guy that approves that authority to be able to waive that, so we certainly have the authority to have some of these more complicated studies like that go longer, and we certainly have no problem doing that because we want to do that science right and get it done appropriately.

Senator GILLIBRAND. So, do you believe you have the flexibility you need to ensure that these types of studies which have Federal funding and a non-Federal partner are not unnecessarily delayed due to arbitrary bureaucratic constraints?

General SEMONITE. I certainly think I have all that flexibility. If I find out later that something is wrong on this particular one, I will get back with you, ma'am, but right now I don't think we have our hands tied at all.

Senator GILLIBRAND. Great.

I am also troubled by the pace of recovery for Puerto Rico and, in particular, the length of time it has taken to restore power. In particular, I have heard horror stories about the situation on the Island of Vieques and the dire situation that exists there due to, in large part, the lack of electricity.

What is the current status of the Army Corps' work overseeing the restoration of the power grid on the Island of Vieques?

General SEMONITE. So, Senator, I have taken five trips to Puerto Rico in the last 7 weeks. I know Puerto Rico very, very well. We have about 2,000 people down there working through Christmas, working through the holidays. Today we have about 80 percent of the load restored. That is not necessarily people; that is the load on how much has historically been out there.

Just Puerto Rico alone, a very, very quick data point, 62,000 power poles; 3,100 miles of cable. That all had to be brought in. The problem was this was after Texas got hit, Florida got hit, and the Virgin Islands got hit. So, the demand on the electrical system to be able to provide that material, it took us a while to do that.

Right now, our goal is to get 50 percent by the end of November. We met that goal. Seventy-five percent by the end of January. We are at 80 percent today and it is only the 17th of January. I committed to the Governor to try to get 95 percent of that power up by the end of February, but, Senator, unfortunately, there are some parts, on top of those mountains, where there are 5 or 10 houses way down at the top of the ridgeline. The electricity for those 5 houses on the side of a cliff. So, it could be as late as May for the last 5 percent. I want to make sure I clarify because I don't want to over-promise. I would much rather deliver this as fast as we could. But we are all in to fixing the grid in Puerto Rico. This is normally not a Corps of Engineers mission, but we are honored to step up to be able to try to get it, and we are 100 percent committed to get electricity on as fast as possible.

I tell the Governor every single day you have a right to be frustrated down there because everybody deserves power, but it is not

because the Corps of Engineers is not going as fast as we possibly can.

Senator GILLIBRAND. Have you been able to build in any resiliency, or are you just doing patchwork?

General SEMONITE. So, the way that the Stafford Act is there is response and then there is recovery, so basically we are going back in with all new materials and we are putting it to code and to standard. I hate to say it, some of the lines we are replacing actually had two or three storms' worth of damage, but they were just leaning over, so all the trees fell on top of the lines, all the lines come out. So now we are putting all of it back up. We, by the Stafford Act, are putting it back up to the original standard unless we have FEMA's flexibility in some areas to be able to make it more resilient. But that is something where the guidance we have gotten from Mr. Long is to be able to basically rebuild the existing standard, but with new equipment to code. That alone will give us more resiliency.

Senator GILLIBRAND. We have been trying to amend those rules so that, actually, you can build in resiliency.

General SEMONITE. Yes, ma'am.

Senator GILLIBRAND. Because it is kind of absurd to say, oh, well, it was built in 1970; we are just going to put it back to 1970 standards. Like that is a waste of money. So, I urge you to ask Congress for the ability to, when you do do these projects, build them to state-of-the-art with resiliency enhanced so we are not there after the next storm. We have a bipartisan bill to do that. We are hoping to be able to get votes on that bill, but that is the kind of work I would like you to aspire to do in the future.

General SEMONITE. Yes, Senator. We have testified several times and we certainly are more than willing to do that if we have the flexibility. Good example, what kind of pole do you put in? If we can put in a stronger pole, but still underneath the authorities we have, we certainly want to do that.

Senator GILLIBRAND. And you have not been able to do that for Puerto Rico?

General SEMONITE. We have when it comes to materials. We have better materials in there. And, like I said, a lot of areas where they were built, it was never built to code. This is an antiquated system. I did the grid in Iraq in 2004. Parts of Puerto Rico were worse than what I saw in Iraq in 2004.

Senator GILLIBRAND. Thank you, sir.

Thank you.

Senator BARRASSO. Thank you, Senator Gillibrand.

Senator WICKER.

Senator WICKER. Mr. Chairman, let me just note for the record how much I appreciate Senator Gillibrand mentioning the Island of Vieques and the situation in Puerto Rico.

And, General, I don't have a question about that, but those listening should understand that there is bipartisan support for doing as much as we can as quickly as possible to alleviate the suffering there.

You know, this is about America's water infrastructure needs and challenges, and, you know, I don't know how well it is understood among the public, until we have a disaster, how important

our Nation's infrastructure is and how vital the Corps of Engineers is until you have an event, and then we wonder why it hasn't all been taken care of beforehand. And I particularly would direct our witnesses' attention to the Mississippi River Tributaries Program, which has been around since 1928 and is still not completed after all these years.

If you read or go back and re-read the book "Rising Tide" by John Barry and understand the absolute devastation that took place to our Country, that rose all the way up to a president of the United States and a secretary of commerce and millions and millions of people, until you go back and remember what could happen if we didn't have the Corps there, if we didn't have programs like the MR&T project, we don't fully understand this.

Some people out in the Country like to call this pork barrel or talk about projects as if they are somebody's pet project or pet program. This MR&T program and the other infrastructure that we have all around the Country is just vital to people's lives, to our ability to earn a living and to recover from those disasters that we know are coming.

You know, I am told that there is a 54:1 benefit-to-cost ratio for what we have done so far in the Mississippi River and Tributaries Project. We have invested over \$14 billion, a lot of money, but we have prevented over \$800 billion in damages.

Lieutenant General, those figures are pretty accurate, aren't they?

General SEMONITE. Sir, you are exactly right. I mean, this is about 88 percent done. We have continued to put about \$350 million into this, but there is still more work to get done. And I have been down to that project several times and the investment of proactive up-front certainly pays dividends when it comes to a storm coming back through, the ability to alleviate risk.

Senator WICKER. These are real benefits, real disasters, real damages that haven't happened to people because we are able to do this. And yet we have this annual fight; it doesn't matter if it is a Republican administration or a Democratic administration. In 2015, the administration requested \$245 million; the appropriators and the Congress ratifying upped that to \$302 million. In 2016, the administration came in, and this was the Obama administration, \$225 million requested; the Congress upped that to \$345 million. 2017 request, \$220 million; that appropriation turned out to be raised from 220 to \$368 million. And the request this year is \$253 million. We will have to increase that. It makes us look like spend-thrifts.

I am not on the committee anymore, I was back in another day and another job I had, but it just seems to me that I am not even going to ask you, Mr. Fisher, to justify this, because I think it would be unfair to you. Let me just say that this investment that we have made, that the Lieutenant General spoke about, that has gotten us to the point of 88 percent and saved all these lives and all this heartache, is really money that we have appropriated over and above what administration after administration after administration has been requesting.

I will just leave that statement out there. I will let you comment, if you would like.

Also, let me just say we have to fix this Mat Sinking Unit problem, and it has to come out of O&M.

General, if we do what we need to do on the Mat Sinking Unit, it is going to take quite a chunk out of O&M, is that correct?

General SEMONITE. It is, Senator. About 4 months ago I was on that Mat Sinking Unit working one of those machines, you know, tying the mats together. That is an antiquated system. It looks like something that came off a farm back in 1952.

Senator WICKER. And it keeps the levees from washing away.

General SEMONITE. Yes, sir, it does. But, on the other hand, you can't just continue to keep putting Band-Aids on it. So, we have a long-term plan, a funding schedule. I mean, it is in the order of \$20 million to \$30 million a year, but we would, at least myself personally, would continue to recommend to the Committee to keep funding in that so we can continue to keep that critical—we have to replace this thing. So that is what that funding schedule does, is continue to get the new unit back up and running and getting it on-board. We are in the design right now, which is good. We have some money this year, we are doing a prototype, but we see great value in a replacement for the Mat Sinking Unit.

Senator WICKER. Well, you know, Mr. Chairman, I have gone way over. It is not really a very sexy topic, but when the water is up and the soil starts churning on the other side of that levee, and you start worrying about the levee failing, it gets pretty serious to millions and millions of Americans.

Thank you for your indulgence, Mr. Chairman.

Senator BARRASSO. Thank you, Senator Wicker.

Senator MARKEY.

Senator MARKEY. Thank you, Mr. Chairman, very much.

Welcome. Thank you both for your service.

General, the Sagamore and the Bourne Bridges are the only two roads connecting Cape Cod to Massachusetts. I don't have to tell you that at all. But, regrettably, these two 80-year-old bridges, which are crucial evacuation routes since it is the only way off, are structurally deficient. The Corps of Engineers maintains the bridges and is currently conducting a study to evaluate whether they need to be replaced.

General, as an agency charged with reducing risks from disaster, how does the Corps of Engineers rehabilitate bridges that serve an essential public safety and commercial function, and would it be helpful if Congress created an authority that dedicates Federal funding for the replacement or restoration of these types of assets and then allows the Corps to divest the bridges to be able to able and willing non-Federal partners?

General SEMONITE. Senator, I strongly agree with you that we have to do something different on bridging. We have 897 bridges. Some of these are small ones across like the intercoastal waterway. But those two you talked about, and I was on those 4 months ago, as well as about five gigantic bridges we have in Pennsylvania, are big, big bills. Right now, per bridge, each one of those, if we rehab it, it is going to be \$300 million; if we replace it, it is going to be about \$400 million. So, you are talking about an \$800 million deficit.

Now, the question is does the Federal Government need to be able to keep bridges in our inventory. I would recommend that we have to go down this path of finding a way to divest those. It would be great if the State came in and took those over, but the State is probably going to say we will only do that once you bring them up to a given standard.

So, we want to work with the Committee to try to find ways, and it goes back to critical infrastructure and water. If we can figure out how to somehow bring down some of the bills that we have for these old bridges, then we are able to use that same money, assuming Congress keeps appropriating that, into other areas that might be a better return investment back for the Nation.

Senator MARKEY. And I agree with you, and that is why Federal money is so important; we have that leverage going into a negotiation on an issue like that.

General SEMONITE. And early on I said what about innovative approaches. This goes back to where is a local or State interest to be able to step up to take some of these things over. We just have a lot of inventory in the Federal Government. I would love to see some of this divested back into locals that maybe can take care of it and budget for it better than we can.

Senator MARKEY. Thank you, sir.

I have always supported environmentally responsible shoreline protection projects where sand is pumped onto beaches to protect against storm surge and coastal erosion, but when the Town of Sandwich, Massachusetts attempted to use sand from the Federal Cape Cod Canal that otherwise would be dumped in the ocean to protect their community, Federal requirements became a major obstacle. The U.S. Army Corps required the homeowners to provide easement, ceding away their coastal property line forever, even though the sand from this beneficial use project would only remain on the beach for 5 years. Ultimately, the town was unable to use Federal funding for this essential shoreline protection project, which, to me, makes no sense at all.

So, General, should we explore opportunities to make the Corps project requirements more flexible for these beneficial use of dredge material projects? Shouldn't we find better ways to ensure that these requirements are not preventing the Corps from using quality sediment for beach nourishment and aquatic restoration?

General SEMONITE. So, Senator, I am a big fan of considering dredge material as a resource as regional sediment management. There is a lot of places that we can put this type sand to do exactly what you are talking about. There is current policy, though, that if in fact we use beach renourishment, then at some given point there are local homeowners' association there and access back to that beach.

I am not specifically aware of the project in Sandwich. I would like to think that somewhere we could have figured out a solution somewhere, but, if nothing else, we will certainly find out and I will talk to the New England District and figure out what happened and how can we somehow figure out, without perhaps challenging the policy that is a national policy, how could we have found a better way to use that sand. Taking it out to the ocean, sir, is a waste of a good resource.

Senator MARKEY. It is a waste of a good resource, and saying you have to give up permanent in order to get something that only lasts for 5 years is something that ultimately, then, reach stalemate, so that is not good.

Finally, if I may, for some communities in Massachusetts, Wellfleet, Plymouth, New Bedford, Essex, Gloucester, Newburyport, the waterways are filling up with so much sand that vessels cannot reliably and safely pass, which harms commerce, recreation, and safety. Many of these waterways are federally owned, and it is the U.S. Army Corps of Engineers' responsibility to dredge these waterways, and that is why I believe that we should use all of the resources in the Harbor Maintenance Trust Fund for these important dredging projects, instead of raiding that pot of vital funding for deficit reduction, as we are doing now. And I hope that we can address this issue in the upcoming water resources bill.

Maybe, if you could, General, just give us a few comments on that issue in terms of the resources you need in order to get the job done in communities like Wellfleet and others that I just mentioned.

General SEMONITE. Sir, I will just hit on the current dredging. We clearly have a lot more requirements right now than we have funds, so we do have to prioritize; and we have a relatively deliberate formula as to where can we dredge and where we can't. I will let Mr. Fisher address the Harbor Maintenance Trust Fund, but we definitely have requirements that exceed our capabilities, and that means in some areas we have not been able to dredge, and some of those rivers have almost gone into a caretaker status because we have not been able to do what we need to do to protect the Federal waterways.

Mr. FISHER. Sir, I would just add I am very aware of the balance, the large balance in the Trust Fund, as you mentioned, and we certainly want to make sure that those fees that are collected are targeted to the improvements they were intended to be.

Senator MARKEY. Because these communities are really under stress. And it is a nationwide issue, so the more that we can work on that project maybe in the infrastructure bill, I think the better off we would be for the economy of our Country, as well, for the growth that is possible, because you are dealing with these central issues.

Thank you, Mr. Chairman.

Senator BARRASSO. Thank you, Senator Markey.

Senator CARPER.

Senator CARPER. Not every member of our Committee, in their comments and questions, have raised the issue of our failure to appropriate the dollars that are needed to enable the Army Corps of Engineers to do your job. It is not even close. It is not even close.

I mentioned the estimates of the American Association of Port Authorities. The underfunding in port infrastructure alone cited by them, I guess last year, \$65 billion in investment over the next 10 years. Actually, if we are interested in a nurturing environment, includes the work that we do in infrastructure on our rivers, ports, levees, so forth. Sixty-five billion dollars over the next decade they say is needed.

And our friends over at the American Society of Civil Engineers, their infrastructure report card, which just came out, tells an even more unsettling story; not \$65 billion, but their report card estimated, I think, about \$162 billion in investments that are needed in dams, levees, inland waterways, and so forth. A hundred and sixty-two billion.

And what do we do in response to this? I think we have a budget for the Army Corps of Engineers that hovers just under \$5 billion. And we are looking at these kinds of needs. We know that we need them. We know that if we invest money in these ways, it will actually grow our economy, strengthen our economy, make us safer and smarter. And we are considering a budget. I don't know if we are going to actually pass a real budget this week or another some kind of short-term funding resolution, but the Administration is asking for, I want to say, tens of billions of dollars more money for defense spending. The U.S. already spends more, Mr. Chairman, I am told, than the next 10 nations combined, and we are going to add to that. We are going to be spending more than the next 12 nations combined.

The President just signed legislation into law last month that reduces revenues for running the Government by \$1.5 trillion to \$2 trillion over the next 10 years, and we sit all around here today bemoaning the fact that the Army Corps doesn't have the money they need, doesn't have the resources they need. Well, there is a good reason why not: we are not providing it. We are not providing it. In this case the Administration is not asking for it and we are not providing money. I think it is shameful. I think it is shameful.

We ask you and the folks that work for you to do more than any humans could actually do. Maybe no one else feels a sense of shame on this Committee. I do. The old comic strip character, Pogo, we see the problem, and it is us. We are a big part of the problem.

I want to come back to Puerto Rico. General Semonite, you and I have talked about Puerto Rico before. I appreciate what you said in response to Senator Gillibrand's question. We think of Puerto Rico as Puerto Rico. This is north, this is south, this is east, and this is west, and most of the generating capacity for electricity is in the south, as I recall. Most of the generating capacity is down here to the south. Not all of it, but a lot of it is diesel. They bring it up from Venezuela and places like that in the south. They spend, I think, and the General can correct me if I am wrong, 27 cents per kilowatt hour in our State, so we spend maybe a quarter of that. And yet somehow they are supposed to be able to compete economically.

The question about rebuilding to code and that sort of thing, I was largely encouraged by what you said on that, but I think if you have most of the generating capacity for electricity down here in the south and most of the people live up here in the north, and in between you have mountains, and we are spending a fair amount of money trying to get the electricity from the south to the north, why don't we bring down some liquid natural gas in big ships from the north, which would be the U.S., and build some new generating capacity? It would bring down the cost of electricity dramatically and the folks in Puerto Rico could actually cleanup their air and their environment as well.

And I know this is not all on the Army Corps, the Department of Energy has requirements here and expectations here, but my dad used to say use some common sense. That would be, in my judgment, using some common sense.

But for folks in Puerto Rico who are still struggling, I am glad that we are still concerned. We want them to know that we are still concerned. I hope to talk to Governor Rosello tomorrow about this. But for the work that has been done on their behalf in some cases, without a lot of thanks, we want to say thanks to those people who have been helping and the businesses that have been helped.

The last thing I want to mention, if I could, Mr. Chairman, I mentioned earlier in my statement, Mr. Fisher and General, that the people of Delaware have had just a wonderful relationship for years with the Philadelphia Office of the Army Corps of Engineers. We have been very, very grateful for the work that they do and their responsiveness.

My staff tells me that sometimes they experience frustration in being able to obtain timely information from the Corps Headquarters staff and other regions. Maybe you don't have the folks or maybe you are just not aware of this, but I said give me an example, and they could give me several examples. They have written them down here. I am not going to take the time now, I am out of time, to go through them, but I just want to flag it and I will follow with a QFR, question for the record, and I will actually give you some specifics here.

But that is it for me, folks, and we thank you for being here.

Ryan, when I became Governor of Delaware, they asked me, if I had a magic wand, what would I do with my magic wand. I had just been elected; hadn't even been sworn in. They said what would you like to use with a magic wand, and I was with Mike Castle. He had been Governor; he was just about to become a Congressman. We were just trading places; I had been a Congressman and was about to become Governor. And I said, if I had a magic wand as a new Governor, I think I would like to have a magic wand that would enable me to make sure that every kid growing up in my State has at least one good nurturing, mentoring, caring parent with high expectations for that child, at least one. Hopefully two, but at least one.

I was inaugurated as Governor a couple weeks later and I got in my office, opened up my desk where I looked for the magic wand, but didn't find it. Didn't find it. And we have done a whole lot of things in 8 years to try to make sure that we are doing what we need to do to strengthen families. That was what we did for 8 years, strengthened families; basic building block of our society.

You are new. When you go look in your office drawer and you are looking around for a magic wand, you probably could use one that would cough up about \$200 billion in infrastructure improvements over the next decade. That would be about \$20 billion a year. I don't know that we can do that, but, Mr. Chairman, we have to do better than this. We have to do better than this if we are serious. I am serious; I know you are as well. We have to do better than this.

General SEMONITE. Senator Carper, if I could just make one comment. You said earlier about how is the Committee doing on funding. I just want to make sure that both of you understand our appreciation for the debt that you do give us. Regardless of what comes in the budget, that extra money, we distribute that through the workplan. It is not billions and billions and billions of dollars, but I will tell you what, we go very, very hard to make sure we are finding the best ways to use that; and that extra money, last year it was about \$1.2 billion, it pays an awful lot of dividends back into some of these projects, so I personally want to thank you for that extra commitment.

Senator CARPER. You are welcome. Thank you.

Senator BARRASSO. And, General, if you can't find a magic wand, we are hoping that you can find some scissors to cut through some of the government red tape that I hear about from communities, as well, trying to solve these problems.

Is there anything that you need in terms of potential statutory authorities that could help improve the Corps' and local communities' ability to complete work on water resource infrastructure in a more efficient and maybe cost-effective way? Anything you can think of we can do for you?

General SEMONITE. Senator, I will be honest with you. I have never been in a Senator's or Representative's office where they haven't offered that same thing; what can we do to give you some advice. We are certainly looking at how we can do it. We have done a lot of work in the last couple months of figuring out what are some of those things we can ask for you. I think the single biggest issue is probably that benefit-cost ratio. How can we somehow get some degree of relief there? And you and I talked about this last year. How do we make sure that that money is going to the right place even if in fact the arbitrary metric doesn't necessarily apply? So, I think that is where we have to look at some innovative solutions. And, again, we aren't looking at the pot is going to necessarily get any bigger, but how can we make sure some of those projects that are very, very viable at least compete better for funding.

Senator BARRASSO. And following up with a final question for Mr. Fisher, just in terms of ability to complete projects, as opposed to partially built projects and lengthy constructions that drag on and on, I am interested in learning your view on how the Corps can work to help ensure the projects included in any potential WRDA bill are built to completion using kind of efficient funding streams to provide for much of the project funds up-front, rather than every year trying to get additional funding. Anything that you have, any thoughts on that?

Mr. FISHER. I think it would be similar to my answer at the opening of the hearing about the CAP 205 program you referenced. We want to keep using those contributed funds authorities that are out there. We want to look at public-private partnerships and non-Federal investment in these things as a way to innovatively move these projects from WRDA to completion.

Senator BARRASSO. It doesn't look like there are any more questions today, to be asked today, but, as Senator Carper said, he may put in some written questions. Other members may put in some

additional questions for the record, so the hearing record is going to remain open for 2 weeks.

But I want to thank both of you for being here for your testimony and for your time.

The hearing is adjourned.

[Whereupon, at 1:51 p.m. the Committee was adjourned.]

[Additional material submitted for the record follows.]



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Statement for the Record of
The American Society of Civil Engineers
on
“America’s Water Infrastructure Needs and Challenges”
United States Senate
Committee on Environment and Public Works
January 10, 2018

Introduction

The American Society of Civil Engineers (ASCE)¹ appreciates the opportunity to submit our position on the importance of long-term, strategic investment in our nation's water resources infrastructure systems. We also want to thank the U.S. Senate Committee on Environment and Public Works for your efforts to keep the Water Resources and Development Act on a biennial authorization cycle. ASCE is eager to work with the Committee in 2018 to find ways to further improve our nation's vital water resources infrastructure systems.

Our nation's water resources infrastructure systems are critical to our nation's economy, public safety, and the preservation and enhancement 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. However, many of these infrastructure assets have reached the end of their design life, and coupled with a generations-long underinvestment, a large and growing investment gap has emerged; this gap must be closed if we hope to both repair and modernize our water resources infrastructure systems to be competitive in the 21st century.

ASCE's 2017 Infrastructure Report Card

Infrastructure is the foundation that connects the nation's businesses, communities, and people, serves as the backbone to the U.S. economy, and is vital to the nation's public health and welfare. Every four years, ASCE publishes the *Infrastructure Report Card*, which grades 16 major infrastructure categories using a simple A to F school report card format. Last March, ASCE released its *2017 Infrastructure Report Card*², giving the nation's overall infrastructure a grade of "D+," with an investment gap of \$2 trillion. ASCE urges Congress to focus first on prioritizing those aspects of our infrastructure most in need of repair, replacement, and modernization to sustain our economy, public health, and safety.

Water Resources Infrastructure Systems

Dams & Levees

Our nation's 90,580 dams and 30,000 miles of levees are critical components of risk

¹ ASCE was founded in 1852 and is the country's oldest national civil engineering organization. It represents more than 150,000 civil engineers individually in private practice, government, industry, and academia who are dedicated to the advancement of the science and profession of civil engineering. ASCE is a non-profit educational and professional society organized under Part 1.501(c) (3) of the Internal Revenue Code. www.asce.org.

² <https://www.infrastructurereportcard.org/>

reduction and protect communities, critical infrastructure, and trillions of dollars in property. In fact, decades of levee upgrades along the Mississippi River have prevented \$306 billion in flood damage prevention, or a 24:1 return on investment. It is estimated that \$80 billion is needed in the next 10 years to maintain and improve the nation's levees, while the Association of State Dam Safety Officials estimates the cost to rehabilitating our nation's federal and non-federal dams to exceed \$64 billion. Included in this is the U.S. Army Corps of Engineers' (USACE) estimate that more than \$25 billion will be required to address dam deficiencies for Corps-owned dams; at the current rate of investment, these repairs would take over 50 years to complete.

Investment is needed to rehabilitate deficient dams and to complete the national inventory of levees outside of the USACE's authority. Although ASCE was pleased that the Water Resources Reform and Development Act (WRRDA) of 2014 reauthorized the National Dam Safety Program and that the Water Infrastructure Improvements for the Nation (WIIN) Act authorized the High Hazard Potential Dam Rehabilitation Program, the former program consistently receives only a portion of its annual \$13.9 million appropriations, while the latter has yet to receive any appropriations. Likewise, WRRDA 2014 created a new National Levee Safety Initiative (NLSI) to promote consistent safety standards, create levee safety guidelines, and provide funding assistance to states for establishing participating levee safety programs, yet it has received no funding other than funding for the levee inventory.

Ports

The nation's 926 ports support over 23.1 million jobs and are responsible for \$4.6 trillion in economic activity. In fact, our ports serve as the gateway through which 99 percent of America's overseas trade passes. Both the Fixing America's Surface Transportation (FAST) Act and WRRDA 2014 authorized competitive grant programs and port-related projects, respectively, but upgrades to these systems lag far behind largely due to a lack of federal appropriations. Underinvestment in our nation's ports has resulted in a 25 percent decrease in port productivity in the past ten years. To remain competitive in the global market and to accommodate larger vessels, ports have been investing in their facilities and plan to spend over \$154 billion from 2016 to 2020 on expansion, modernization, and repair.

ASCE supported the provision in WRRDA 2014 designed to encourage the use of the Harbor Maintenance Trust Fund (HMTF) for its designated purpose. Full appropriations of these funds have not yet occurred, and once it does, it will take five years of complete HMTF funding to dredge and restore channel depths and widths.

Inland Waterways

The USACE operates and maintains a vast network of 25,000 miles of inland waterways and 239 locks that support half a million jobs, deliver more than 600 million tons of cargo annually, and are the nation's connection to inland and ocean ports and international markets. Barge transport is the most fuel-efficient mode of the transportation of goods, but

with a majority of locks and dams reaching well beyond their 50-year design life and thus requiring frequent shutdowns for maintenance and repairs, nearly half of all vessels traveling through our inland waterways experience delays.

ASCE supported the 2015 increase of the Inland Waterways Trust Fund user tax, and although recent increases in investment have resulted in some improvement in the projected completion date of many inland waterway lock and dam rehabilitation projects, funding must continue at a higher and more consistent level to meet the large backlog of needs. ASCE also championed Section 5014 of WRRDA 2014, which authorizes the USACE to enter agreements with non-federal interests, including private entities, to finance construction of at least 15 authorized water resources development projects. This alternative financing and delivery mechanism is an important new resourcing tool that, if appropriated, can help the USACE meet the growing needs of our nation's inland waterways infrastructure.

Drinking Water & Wastewater

Well-maintained public drinking water and wastewater infrastructure systems are critical for public health, strong businesses, and clean waters and aquifers. Despite increased efficiency methods and sustainable practices, there is a growing gap between the capital needed to maintain drinking water and wastewater infrastructure and the actual investments made. By 2025, the investment gap for drinking water and wastewater infrastructure systems is estimated at \$105 billion.

The nation's drinking water and wastewater systems face staggering public investment needs over the next several decades. According to the American Water Works Association³, \$1 trillion will be needed to maintain and expand drinking water service demands during the next 25 years.

As cities continue to experience population growth and as rural households switch from septic systems to public sewers, pressure on existing centralized wastewater systems will require billions of dollars in investment to meet federal regulatory requirements.

Solutions

Our nation's elected leaders need to act quickly to address the widening investment gap for water resources infrastructure systems. We urge Congress to:

- Pass a Water Resources Development Act this year, to continue the two-year cycle;

³ American Water Works Association, Buried No Longer: Confronting America's Water Infrastructure Challenge, February 2012.

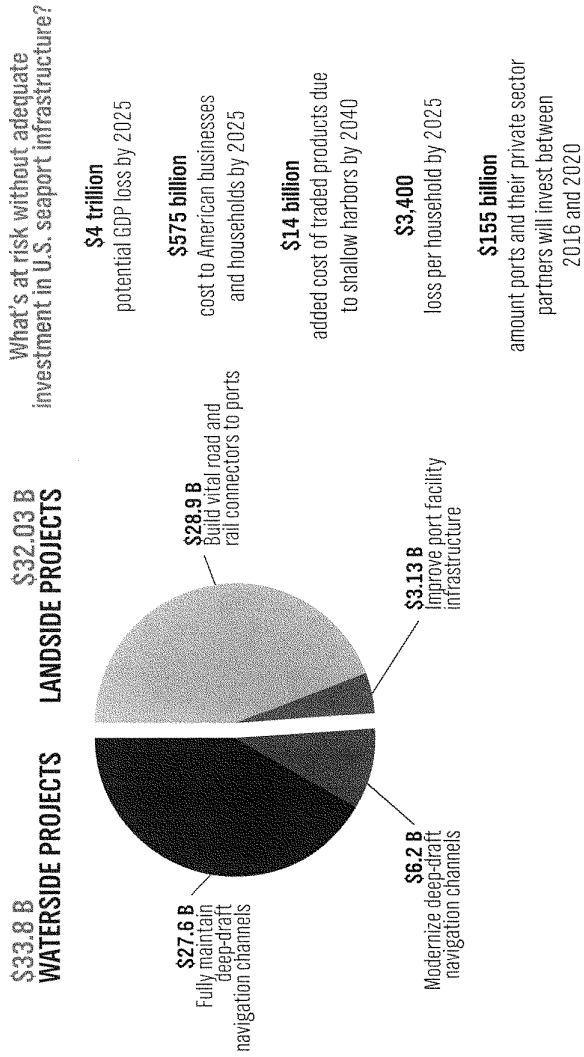
- Give the USACE contract authority for projects to avoid the stop-and-start of construction currently occurring because of the annual appropriations process;
- Fund inland waterways projects at the authorized levels and do so consistently;
- Utilize alternative financing and delivery methods, such as public-private partnerships, when appropriate, including implementation of both the USACE's Water Infrastructure Finance and Innovation Act (WIFIA) program and Section 5014 of WRRDA 2014 that authorizes the USACE to enter agreements with non-federal interests to finance construction of at least 15 authorized water resources development projects, and;
- Fully appropriate funds for existing federal infrastructure programs that have been authorized, including:
 - the WIFIA program at \$175 million over five years;
 - the High Hazard Potential Dam Rehabilitation Program at \$445 million over ten years;
 - the National Levee Safety Initiative at \$79 million annually, and;
 - the Harbor Maintenance Trust Fund at the full amount of fees collected to be allocated for its intended purpose.

The projects funded by these programs have already proven to be successful; providing more funding to existing programs rather than creating new programs will reduce overhead costs and startup time while still allowing for significant and noticeable improvements across our nation's water resources infrastructure systems.

We also urge Congress to reauthorize the National Dam Safety Program and the National Levee Safety Initiative, both of whose authorizations expires in 2019, in the 2018 Water Resources and Development Act. An early reauthorization would avoid a lapse in authorization and would put the programs on a schedule in line with a biennial Water Resources Development Act cycle.

In conclusion, ASCE believes our nation must prioritize the investment needs of our water resources infrastructure systems to ensure public safety, a strong economy, and the protection of our environmental resources. Strategic, robust, and sustained investments, through long-term, reliable federal funding, as well as through the utilization of financing mechanisms, must be made quickly if we hope to close the growing funding gap and restore America's world-class infrastructure. We thank you for holding this hearing and look forward to working with the Committee to find solutions to our nation's water resources infrastructure systems investment needs.

\$66 BILLION INVESTMENT NEEDED FOR MARITIME INFRASTRUCTURE



Credit: American Association of Port Authorities