

Appendix L
Public Comments and Responses

5 Comment Number	Organization/ Public	Comment	Response
1.	Brian Busbee, North Augusta, South Carolina	I am strongly opposed to your current proposal for the lock and dam. It will lower the river too much. This will negatively impact recreation such as fishing and boating. It may also impact several different water treatment plant intakes, to include North Augusta and Edgefield County. Please go back to the drawing board. Thank you.	Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.
2.	Jay Bileu	Please repair the lock and dam.	Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Rehabilitating the New Savannah Bluff Lock and Dam is more costly than other alternatives, fails to allow endangered and threatened species to pass the location and it no longer serves the purpose of

its construction – commercial navigation between Augusta and Savannah

3.

Eugene Luder,
North Augusta,
South Carolina

The plan to use a fixed weir is not going to maintain a pool to the level needed to preserve the current lake. In addition with a fixed weir there is no way to allow sediment and nutrients backed up behind the weir to be flushed downstream.

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4.

Terry Seagle,
Beech Island,
South Carolina

I oppose the lowering of the Savannah River.

Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under

			existing conditions just by varying degrees as a result of the creation of the fish passage structure.
5.	Melinda Ball	<p>I am writing today to express my opinion in response to the recent draw down of the Savannah River Between Augusta, Georgia & North Augusta, SC as per your request per needing public Comment. I am against the removal of the Lock & Dam to be replaced by a rock wier. During the recent river level draw down, our neighborhood boat ramp was left dry & unusable. We need access to our neighborhood boat ramp to access the river for recreational use. Also during the drawdown, all of my neighbors docks & boats on the river were left high & dry in the mud. This is unacceptable!</p> <p>Without river access & the ability to keep our boats in our backyards here in the River North Community, our property values will decline. Also, besides the loss of property value, the beautiful Savannah River was left ugly & smelly with so much water removed. I have reviewed the WIIN act & read that the River Levels must be "Maintained" according to the law. Your officials seemed to have misinterpreted the law & have violated what the law has actually stated to mean by thinking that you can lower our River pool levels. If the Lock & Dam is removed & the river levels drop like what was observed this past week, the US Army Corps of Engineers will be in violation of the law to "maintain" the river levels as stated in the WIIN Act. I am not against giving the sturgeon fish a chance to spawn, I just feel that the area for the fish to spawn can be built with the Lock & Dam Fixed & left in place with a fish rock wier placed beside the Dam. This option was discussed at previous</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. The changes in appearance of the shoreline of properties along the pool are not yet known. The simulation event occurred after a period of higher water levels and high flows during the winter. The appearance along these properties may change when the actual project is constructed. There are four (4) boat ramps in the project area: (1) a new NSBLD boat ramp will be constructed to make room for the fish passage. (2) North Augusta ramp, (3) community boat ramp, and (4) the river north boat ramp were measured and found to be accessible during the simulation.</p>

		<p>public meetings in regards to this issue. In regards to this issue, I have expressed my concerns & disapproval of the Lock & Dam removal with all of our Federal representatives, along with local city leaders, state government, & the White House. My family & I along with neighborhood friends will be present at your scheduled meeting March 6th to express our opinion to fix & keep the Lock & Dam & Save our River Pool.</p>	
1.	Landon Ball, North Augusta, South Carolina	<p>I am writing in regards to the proposed rock weir Alternative 2-6d, and the USACE draw down results. The effects of the lower river pool as a result of this alternative would be devastating to the aesthetics, recreation, water quality and economies of Augusta, GA and North Augusta, SC. This alternative does not meet the requirements of the WIIN Act, section 1319, where it states that: "The Savannah Harbor expansion project in Georgia is modified to maintain pool levels." I am a resident of North Augusta, and our family and neighbors are avid boaters and conservationists of the Savannah River. The lower pool level that was shown during the USACE drawdown would destroy our recreation and enjoyment of the Savannah River. The boat ramp in our neighborhood would have to be modified to even be able to launch boats. Many of our neighbor's boat docks on the river would be rendered useless, causing millions of dollars in damage to their property values. The lower pool creates an aesthetic nightmare for Augusta, GA and North Augusta, SC, with much larger muddy banks being exposed, which would quickly be covered by grass, weeds, trees etc. resulting in very unsightly conditions. I have great</p>	<p>Thank you for your comments. The USACE Savannah District's must follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality, according to Implementation Guidance, of the upstream pool of the New Savannah Bluff Lock and Dam for the purpose of recreational navigation.</p> <p>The changes in appearance of the shoreline of properties along the pool are not yet known. The simulation event occurred after a period of higher water levels and high flows during the winter. The appearance along these properties may change when the actual project is constructed.</p> <p>USACE completed an after-action review of the February 2019 simulation. For information on the after-action review and additional information about the February 2019 simulation, please see the Engineering Appendix, Attachment 4.</p> <p>The Corps is not obligated to pay expenses to make adjustments to boat docks in the project area. Boat owners should contact their respective Corps Regulatory office about their dock permit and any discuss any updates that the owner is plans to make as a result of the project.</p> <p>Georgia dock owners: https://www.sas.usace.army.mil/Missions/Regulatory/</p> <p>South Carolina dock owners:</p>

		<p>concerns for the general CSRA over the potential loss of development and economic benefits, if Alternative 2-6d is implemented. I have included some pictures of the effects of the lower pool. As you will see, it is devastating for us here in the CSRA, on both sides of the Savannah River. You can see that many boat docks are left high and dry and useless. Docks would need to be re-located to the main channel, which would be unsafe and probably not even feasible, considering that there would still be high water events, which would wash them away. Our neighborhood boat ramp would be useless as well, as the depth of the water at the bottom would no longer facilitate launching most boats.</p>	<p>https://www.sac.usace.army.mil/Missions/Regulatory.aspx</p>
2.	Dale Adams, Augusta, Georgia	<p>As a senior citizen on limited income and that has paid taxes for more years than I wish to discuss, I urge the corp to reconsider their plan and come up with an option that will not lower the water level. When the water was lowered in 2000 it cost us over \$10,000 in structural damage. We had to resupport our pilings to keep our balconies from tearing off our home and repour our cement patio. The corp was not held accountable for their grave error and now their plan is to do it again. This does not make any sense and sounds like a bad plan. There just has to be another way. Please protect us homeowners and our biggest asset.</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat.</p> <p>The changes in appearance of the shoreline of properties along the pool are not yet known. The simulation event occurred after a period of higher water levels and high flows during the winter. The appearance along these properties may change when the actual project is constructed.</p>

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<p>3.</p>	<p>Joan Hixon, North Augusta, South Carolina</p>	<p>I am very disappointed and appalled at the actions taken by the Corps of Engineers on this topic. Our city has been on a continuing basis building our riverfront to be the best in South Carolina. My family sold land that had been held by my late grandfather, James W. Holloway, to make sure that the land along the Savannah River was used to make our city beautiful. After all these updates to our city, we are getting that our beautiful Savannah River pool is now going to be reduced to an ugly addition to our city and will not even be navigable by even the smallest watercraft that I have been used to for the last 50 years. Now that this "pool level" has come to light, have we thought of any other options to make the levels back to where they used to be? Is there nothing we can do to change the decision to make the pool level back to where it used to be. Our city is looking very bad along the Savannah River right now and it is going to change the way our community has been able to view the beauty of our river on a national scale. Think about the income of the new residents coming to take jobs up in the cyber industry that Georgia has been given on a national stage. This reduced pool level is going to reduce the magnetic attraction to our downtown and the new North Augusta addition to our beautiful city. There are boats right now that are currently "on land" and can't be moved because they are sitting on dry land. Are we going to continue to let these boats just sit there and make our</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>

		<p>community look terrible since we can't even move those boats out of the river because they are sitting on dry land and can't be moved? The lock and dam needs to be repaired or replaced. I think there needs to be some serious thinking on how to get our "pool" back in the CSRA, otherwise we will need to take our questions to the United States Congress and/or the President. I, for one, know that the President has been wanting to gain membership to the Augusta National for several years now. One of my questions to you, as a government agency, is how much do you really care about our economy? This is one of the best resources of our CSRA. Why destroy it because of some fish that probably won't come up this far anyway???</p> <p>Please have the decency of responding to my email and let me know if there is anything else I can do to make this better for our community.</p>	
4.	Madera C. Hollowell, Evans, Georgia	<p>I am writing as a concerned Columbia County resident, Realtor, and possible future homeowner in a riverfront community. The recent low water levels were extremely concerning for many, many reason! The least of which is what a terrible eye sore it was to look at!!! We went from having a beautiful river (views from both GA & SC) to having a smelly, mud pit with tree stumps sticking up out of it. Not only it is dangerous for the thousands of people who love to fish, boat, kayak, and canoe on the river but what would it do to industry? Real estate values of current and future homes? The annual ironman that brings a tremendous amount of money into our area? And last but not least, I'm sure all the thousands of people who come to our city once a year for the Masters and pay good money to rent homes, entertain, and be entertained, a lot of which takes place with river views, expect a river to look at and not a mud pit! This would be a HUGE DETRIMENT to the entire CSRA! Thank you for your consideration in keeping the river</p>	<p>Thank you for your comments. The changes in appearance of the shoreline of properties along the pool are not yet known. The simulation event occurred after a period of higher water levels and high flows during the winter. The appearance along these properties may change when the actual project is constructed.</p>

		levels at their normal levels that we have all come to know and love!	
5.	Mark Swanson	<p>I'm a property owner along the Savannah River and I've been a life long user of the Savannah River "pool" for recreation for the passed 40 years. I understand the need for the sturgeon to be able to spawn, but I also understand economics and the impact that removing the lock and dam would have on the CSRA. There are many places below the lock and dam for the sturgeons to spawn. The lock and dam should be refurbished and it could be payed for by various ways like raising fishing licences in GA and SC. I would like to see DNR try a catch and release program and tag the sturgeons then release in the Savannah River "pool". I think DNR could then monitor the fish population to see if they are able to adapt. If unable to adapt at that time, we could pursue other passage way options if the population is declining. I believe the lock and dam should stay, to be in accordance with the Wiin Act of 2016. If the locks are removed then the waterways will be altered and unsafe for most recreational activities. Congress and the Corp of Engineers need to reconsider the impacts from an economic, recreation, and aesthetics point of view.</p> <p>Let's come together and think outside the box for a solution that is suitable for Augusta-ians and the sturgeons!</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure. rehabilitating the New Savannah Bluff Lock and Dam is more costly than other alternatives, fails to allow endangered and threatened species to pass the location and it no longer serves the purpose of its construction – commercial navigation between Augusta and Savannah</p>
6.	Parin Amin, MBA	<p>I want to commend you for your professionalism and transparency over this entire NSBL&D saga. I've been following all your posts on the blog, and find the answers to be thoughtful and well informed. The comments from the gentleman named "Ferris" have been very eye opening for some of us "laymen". That being said, I am okay with whatever the ACOE decides it needs to do to balance the basin. I am not fortunate enough to live along the banks of the</p>	<p>Thank you for your comments and support on the Fish Passage project on NSBLD.</p>

		<p>Savannah, but even if I was, I would have no problem extending my dock if need be, and letting the natural vegetation flourish along the recedes areas. As a resident of Columbia County, a frequent recreational boaters on the lake and river, I don't see any issues still enjoying those activities. Those that live on her banks in the CSRA aren't the only stakeholders of a balanced basin, and I hope the ACOE won't overlook the vast majority of us that aren't lucky enough to own property along the river. The WINN Act is clear, and the process must be completed. The few of those in public opposition will eventually stop making a fuss and attacking the SRK with libelous claims, the sooner the better for all of us.</p>	
7.	<p>Freda Baker, Riverwood Location</p>	<p>I am writing to voice my opposition to the above-referenced proposed. There has to be a better way to accomplish what needs to be accomplished without destroying property home values. My home is my only truly recognizable asset that I own and I need it to increase in value, not decrease. Please put yourself in this position and think about the catastrophic impact that it will have. Thank you for your consideration.</p>	<p>Thank you for your comments.</p> <p>The changes in appearance of the shoreline of properties along the pool are not yet known. The simulation event occurred after a period of higher water levels and high flows during the winter. The appearance along these properties may change when the actual project is constructed.</p>
8.	<p>Laura Warren, North Augusta, South Carolina</p>	<p>My husband and I love the water. So, when we found our dream house in the River North neighborhood in North Augusta this past May, we put our lives in fast forward to sell our old house, with a 6 month old baby strapped to my chest for most of that moving endeavor. I tell you this-- because we bought that home at the peak of the market. A home in a riverfront community. A \$450,000 home with a market valuation that would be decimated--if not irrelevant if the Army Corps of Engineers goes forward with the plan on the table to build a rock weir in place of the lock and dam. Even if a home has a market value, that value is useless if no one will purchase it. And, if our</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional</p>

riverfront community becomes a mud pit and mosquito spawning ground, with no hope for boat access, we would be trapped. We have loved watching the rowing competitions on our community dock, walking our toddler down to the water to wave at boats gliding by, and soak in sunsets from our neighbors wrap around porches. But, I'm not only a tax paying property owner. I'm also a news anchor. I cover news in this community. I'm part of this community. And, right now, the news is in my front yard. When the Corps lowered the river levels to simulate what would happen, it took about 3 days to get the levels down, and about 3 minutes for me to realize my husband and I might have made the biggest mistake of our lives investing everything we have into this property. I understand for your engineers, this seems like a basic math equation. You guys have a deadline. You have money to spend and laws to obey. You have sturgeon that may decide they would like to venture farther inland to spawn. And you have big bucks tied to that fishy (at best) promise. What has to happen for the Corps to consider repairing the lock and dam, avoiding demolition costs, and adding a fish ladder? Is there any documented proof that sturgeon would even be able to navigate the rock weir option? I will write letters, talk to mayors and Congressmen to urge them to recommission the project. I will stand on the other side of the lock and dam with a net to catch sturgeon. But, realistically--what has to happen for the Army Corps to change course? Is that an option? I understand you guys did not create this problem--you are just trying to fix it. But, put yourselves in our shoes. We didn't create this problem either. You guys can work on this plan during your day job, go home, and prop your feet up. Maybe move in a few years if a better opportunity pops up. We would be stuck. Victims of circumstances out of our control. My

spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.

		<p>comment is this--this is a bad plan. This would undo years of work to build up the downtown area and the river. Two cities are on the precipice of big things. The economic impact would be felt for years. The river is at the center of all of that development. The area below 5th street has development deals, including a \$94 million redevelopment of the old train depot waiting to be inked that would finally revitalize that part of town. This would undo everything.</p>	
9.	Tim and Theresa Hass	<p>My wife and I live on the Savannah River in North Augusta, SC in the River North neighborhood. During the most recent testing of proposed basin level adjustments related to the alternative to the aged Lock and Dam, we noted that the levels on 13-15 February 2019 were too low for our floating dock. Mud appeared in front of our dock, hence prohibiting the docking of a boat or even a kayak. In order for this level to be established during low flow periods, we would need to dredge the area in front of our dock, hence we find the proposal unacceptable without mitigation steps.</p> <p>Thanks much for your time and attention to improving the lock and dam while preserving the recreational quality on the Savannah River</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. The changes in appearance of the shoreline of properties along the pool are not yet known. The simulation event occurred after a period of higher water levels and high flows during the winter. The appearance along these properties may change when the actual project is constructed.</p> <p>USACE completed an after-action review of the February 2019 simulation. For information on the after-action review and additional information about the February 2019 simulation, please see the Engineering Appendix, Attachment 4.</p>
10.	Corey Burns, Aiken, South Carolina	<p>I am writing in opposition to the formation of the rock weir and fish passage that results in lowering the pool of the Savannah river north of the lock and dam. I am not a property</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of</p>

		<p>owner on the river, but use the river recreationally for boating. 1. The lock and dam, since its inception, altered the economy of our waterfront and we have relied the current pool for maintenance of retaining walls, docks and recreational use. If the damn is taken away, please offer funding for homeowners to extend docks and improve waterfront properties. 2. I understand the deepening of the port at Savannah has effects on the fish ecology. I am wondering why fish can't be relocated to above the lock and dam. I am very ignorant about this topic but would think it a possibility. 3. Finally, my erosion of confidence in the Corp is based on over 25 yrs of dealing with fluctuations of Lake Thurmond and the Savannah. This is not the case with Lake Murray / Saluda River. So while I don't have all the answers, I wish that this current situation passed common sense test. To potentially alter 15-20 miles or riverfront doesn't seem to make sense based on what I am reading and seeing.</p>	<p>the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure. The lock and dam poses an impassable barrier to endangered sturgeon. This fish cannot "jump" over obstacles. Some of these fish can weigh in the hundreds of pounds</p>
11.	Dr. Allen Kirchner, Aiken, South Carolina	<p>As a 45 year resident of the Aiken-Augusta area and a regular user of the Savannah River, both in the Augusta Pool and below the lock & dam, and as a US Coast Guard licensed Captain with a 100 ton Master Rating, I oppose each and every of the Corps' proposed plans to replace the lock & dam. Many years ago, the Corps proposed removing the lock and dam, and the simulation done by opening the lock proved disastrous to the river shoreline. The simulations of this proposed plan show similar potentially catastrophic outcomes. Additionally, the Augusta Pool would become "land-locked". I have made many memorable trips from the Augusta Pool to Savannah and back through the lock and dam, when the lock was functional, in vessels up to 52 feet in length. There is no sound scientific data to support the adverse effects on the sturgeon population by the dredging of the</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a</p>

		<p>Savannah Harbor, nor is there any data to support the conclusion that adding a fish ladder 200 miles upstream at Augusta would have any significant positive impact on said fish population. If such were the case, the entire cost of habitat remediation should be paid by the Port of Savannah. The Savannah River is an incredible natural resource and perhaps the longest remaining undeveloped major river in the eastern United States. Rather than destroying what we have, the Corps, and both adjoining states, should work to improve the current status and enhance the usability of the River. The lock and dam should be repaired to full functionality. The channel should be restored from the lock and dam to Savannah. Tourism on the River should be promoted by seeking private enterprise to resume commercial and tourist traffic on the River. As more citizens use the River, its value to both states, all the adjoining counties, and to the country will become more obvious.</p>	<p>result of the creation of the fish passage structure.</p>
<p>12.</p>	<p>Laura Lee, Aiken, South Carolina</p>	<p>We need to keep the level in the river up between the dam and the lock and dam.</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a</p>

			result of the creation of the fish passage structure.
13.	Chris Watson, North Augusta, South Carolina	I am emailing to express my significant concern over the USACE plans as they pertain to the New Savannah Bluff Lock and Dam replacement with a rock weir. As a 3 year resident of North Augusta, SC, I do feel strongly that the preservation of critical habitats, ecology, and overall environmental conservation is a paramount priority. However, it must also be balanced thoughtfully against the long-term economic, aesthetic, recreational, and property-ownership implications of such decisions. As the growth of the CSRA is intricately linked with the Savannah River, I have serious concerns and hesitation against this project moving forward based on the recent simulation. Overall, as a resident of the CSRA, I believe that the rock weir will have significant negative impacts in both Augusta, GA and North Augusta, SC. As such, I am currently opposed to the plan to move forward with the rock weir without significant revision or alterations.	Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.
14.	General Public	I won't pretend to know the correct answer, but I do know the wrong answer when I see it. During the trial period that the water was lowered it was clear that wasn't the correct solution to the problem. I understand the need to keep cost as low as possible when undertaking large projects such as these, but the economic loss for not only the city of Augusta, but many neighboring towns and counties as well would cost much more. Already there have been homes purchased, businesses built and multi millions of dollars of investments with the expectation that the river is either an attraction or a necessity. I think a solution can be reached, but it cannot negatively affect the people who live here. I trust that not only will cost be factored into your decision, but most importantly I hope and trust you to make the BEST decision.	Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a

			result of the creation of the fish passage structure.
15.	Philip Jenkins, Augusta, Georgia	I will be short. The Proposed Savannah River levels with a rock weir will not work. From the unstable land, habitat damage, lawsuits, unusable recreational aspect, property damage, the effects on Thurmond and Hartwell, or the just plain out right unsightliness of the Savannah that low. The only acceptable answer is to repair and MAINTAIN the current lock and dam or new lock and dam with a fish ladder. This solution allows sturgeon to pass and eliminates most of the problems deconstruction of the Lock and Dam would create. Either decision is expensive. However every so often the River levels are dropped and the effects studied. It never works. Maintain the current system of a lock and dam with an added fish ladder and this time Maintain it instead of letting it get to a point of failing.	Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.. Rehabilitating the New Savannah Bluff Lock and Dam is more costly than other alternatives, fails to allow endangered and threatened species to pass the location and it no longer serves the purpose of its construction – commercial navigation between Augusta and Savannah
16.	Chris Adkison, Graniteville, South Carolina	I am writing to let you know I oppose the removal of the lock and day below Augusta and replacing it with a weir. I am not opposed to closing/ not operating the locks. The lower water levels are unsightly - ugly. It would effectively eliminate all use of the river in the short term. It would cost thousands if not millions to redo boat ramps and docks. All the development work done by Augusta and North Augusta would be erased. It is just not a good idea.	Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get

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17.	<p>Thomas L. Drago, North Augusta, South Carolina</p>	<p>I am writing to comment on the recent draw down of the Savannah River at Augusta Ga. The draw down was obviously a disaster, endangering homes and property along the river. In addition, the cities of Augusta, Ga. and North Augusta, S.C. have invested millions of taxpayer dollars in the development of riverside infrastructure that enhances the life of residents on both sides of the river. Industries and municipalities along the river that draw water for drinking and industrial use will be injured by demolishing the dam and lowering the river. All of this development will be destroyed by permanently lowering the river level. The Corps of Engineers should be working with local municipalities to preserve the dam in an economical manner that will preserve the water levels of the Savannah River at Augusta / North Augusta. It has been stated that a certain fish will be unable to live without the proposed "fish ladder". I think it is safe to say that the fish will be just fine. They have been here since the creation of the earth and will be here long after any of us are gone. Creatures adapt to their surroundings but to wreak economic disaster on two thriving communities is criminal. I am against the demolition of the dam and the creation of a "fish ladder".</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>
18.	<p>Bradley Bertram, Evans, Georgia</p>	<p>I am a resident of Evans Georgia and I am writing to express concern over the dramatic negative effects to our community from the reduction in the pool of the Savannah River. I was personally sickened by the appearance of the river during the demonstration drawdown. The Savannah is presently a gorgeous river and adds greatly to the quality of</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District</p>

		<p>life in our community. I understand that you are required to follow federal law, but I am pleading that you will cooperate with local officials to preserve the pool by using federal funds to repair the dam and create a fish ladder. I'm sure the local communities would be willing to take over the maintenance of the dam to preserve our river. Much of the economic development we have enjoyed over the past 25 years has centered on our beautiful river. I don't agree with Congresses decision to put the welfare of a fish which is not a game fish or food source above the lives of the American people. The sturgeon has managed to spawn for the past 50 plus years with the Lock and Dam in place. Surly the deepening of the Savannah port will not bring salt water 120 miles upstream. The sturgeon has spawned without rapids which don't exist downstream of the dam. Thank you for considering the local effects of your plans.</p> <p>I am also interested in the expected effect of removing the NSBLD on the Savannah River pool above the Stevens Creek Hydroelectric Dam operated by SCE and G. Thank you for your response.</p>	<p>must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure. The alternatives being considered will not impact the current pool above the Stevens Creek Dam. Once sturgeon can migrate above the New Savannah Bluff Lock and Dam, the owners of the Stevens Creek Dam must create a way for the endangered fish to migrate above their dam as well.</p>
19.	Representative Allen's Office	<p>Thank you for taking time to meet with leaders from the Augusta, Georgia and North Augusta, South Carolina communities yesterday, February 14, 2019, and a member of my staff, regarding the Corps of Engineers' recommended plan for the New Savannah Bluff Lock and Dam. As you indicated you would do in the meeting, I would like the Corps to formally request a report from NOAA on a detailed evaluation of the passage of fish for Alternative 1-1. We would like to get a detailed explanation as soon as possible, and no later than February 28, 2019. As waiting to receive this report could cause a delay in submitting comments, I would like to call for an</p>	<p>Thank you for your comments. NOAA NMFS did provide some information on the reasoning behind why Alterative 1-1 would not be as effective as passing fish as the draft recommended plan...this information will be included as part of the comment response document. As you and others requested, we extended the comment period to a full 60 days</p>

		<p>extension of the public comment period for at least an additional thirty days, for a total of at least 60 days. This would allow for more time for the community to respond to your plan and community leaders to learn more information on Alternative 1-1 and why Alternative 2-6D is the recommended plan from your office. I would also like to see a detailed explanation of how in your Evaluation Matrix, the passage of the fish was ranked and the determining factors with it. Please work with NOAA or any other related agency for detailed information and the biological opinion regarding the fish mitigation feature. Thank you for sending this information and let me or my staff know if you have any questions.</p>	
20.	A.B. Mckie, Winder, Georgia	<p>The Lock and Dam has a special place in my heart. I was privileged to have as my scoutmaster Mr. Edwin Epstein who was lockmaster there for many years. I virtually have explored every inch of the facilities. MY solution to the current needs of the river and its environment is to use the locks as the fish ladder. Fill in with short risers and long treads. Maintain a variable water flow by manipulating the flood gates and of course the height of the entrance from upstream. Multiple uses could be made of this approach. Obviously for the Shad and Sturgeon and other wildlife. With a few feet of depth over the steps, a white water course through the locks is possible. Obstacle and gates for competitive white water events can be placed on the waterway. A good white water course functions best when shallow and the fish won't mind a few phony rocks. A constant water flow should draw migrating fish to the "ladder lock" and provide for the continued viewing/fishing from the facility. I am not an engineer; but ' the retired Comptroller for the city of Augusta/Richmond County. That in no way makes my opinion more valuable than others; however' it might help to</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure. The recommended fish passage structure was designed and intended to mimic what the fish would encounter in the wild and it was determined that this design would provide a higher likelihood of passing endangered Atlantic and shortnose sturgeon.</p>

		explain why someone in Winder, Ga. has an interest in the River.	
21.	Ron Waller	<p>I am writing to voice my opposition to the building of the rock weir. The existing L&D has served us well for 70 years. Based on what I have read and come to believe the weir will increase river level volatility in periods of heavy rain and Lake Thurmond water releases. I am a property owner on the SC/GA state line. I know this project will damage the wetlands and will damage crops/cropland along the river. The financial impact will be great. Abandon the weir idea and either find an acceptable alternative solution or just repair the L&D. Congress wastes billions of taxpayer dollars each year on foolish special interest projects. Surely we can seek and achieve the proper funding for a good, sound alternative to the rock weir.</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>
22.	Barbara A. Barnett	<p>To whom it may concern, I oppose building a rock weir on the Savannah River. Here is why. I've lived in Augusta since I was 5 yrs. old (I'm 58 now) so I'm familiar with the area and what it has to offer. The Savannah River and Clark's Hill(native Augustans still call it that) and all its tributaries including Brier Creek in Burke County where I live are a huge draw for folks like myself who enjoy the outdoors and all that goes with it. As a teenager, Clark's Hill and the Lock and Dam were regular hangouts. Many of us who wish to stay in the area but are looking to retire, would like to consider a nice home on the river or lake. Not if you lower water levels. We'll just have to move to another area rather than Augusta. I have a friend who owns a large home on the river. She and her husband are getting up in age so they downsized to a smaller house. Now they can't</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a</p>

		<p>seem to sell the one on the river, especially with the water the way it is and the chance it might stay that way. Since the city's desire is to bring in more new money and people, why would you do something to hinder that? I'm really having a hard time believing people are willing to take this risk for one little fish that has been on the endangered list since 1967. And since this fish lives in fresh and salt water, even experts aren't sure of the accuracy of the count. There's this thing called evolution, and sometimes a species doesn't make it. Maybe that's how God planned it. And what are the ramifications to other species? Even if we do all this to save this fish, they have predators in the ocean that eat them. I may only have a high school education but I'm smart enough to do my research and see the big picture here. No matter how you look at it, this is a bad idea! I'd like to know whose pocket was greased to even have this up for consideration.</p>	<p>result of the creation of the fish passage structure.</p>
23.	Teena Adams	<p>I am writing to express my dismay that the Lock and Dam is scheduled for demolition. This would be a great loss to the Augusta area. The cities of Augusta, GA and N. Augusta, SC have made investments on the riverfront while counting on the beauty of the river. Please try to come up with some other plan besides the demolition of the dam and the building of the rock weir. At a meeting November 14, 2018 in North Augusta at the Municipal building, it was disclosed that the sturgeon might not even be able to climb the rock weir for spawning. The pool of the river is an important issue for the safety of boaters and the beauty of our cities. My family has used the river for many years for fishing and recreation, we know that the river is already too shallow in many areas.</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>

24.	City of Augusta, Georgia (Mayor Hardie Davis Jr.)	<p>I am writing to request that the U.S. Army Corps of Engineers extend the current 30-day period of public comment on proposals regarding the New Savannah Bluff Lock and Dam (NSBLD) to 60 days (From March 16, 2019, to April 16, 2019). Additionally, it would also be prudent to hold two public meetings in Augusta, not one. As I expressed during our meeting on February 14, 2019, a proposal of this magnitude must be fully understood by all who would be affected. The consolidated government of Augusta, Georgia and its citizens have come to rely and depend on the pool of water in the Savannah River created by the NSBLD since it went into service in 1937. With the recent simulation, there have been many concerns brought forth by constituents, employees and other stakeholders. The Corps is urged not to rush into a final decision to change the nature of the river until Augusta representatives and the public have had sufficient time to present their comments. Accordingly, I am requesting a 30-day extension of the public comment period. Also, I am requesting a detailed report from NOAA on the evaluation of the passage of fish for Alternative 1-1 that should be formally requested by The Corps. The report should be provided no later than February 28, 2019, with a detailed explanation. This report will give insight into why Alternative 2-6D is the recommended plan from your office as opposed to Alternative 1-1.</p>	<p>Thank you for your comments. The comment period for the draft report was extended for an additional 30 days for a total of 60 days. In addition, NOAA NMFS did provide some information on the reasoning behind why Alternative 1-1 would not be as effective as passing fish as the draft recommended plan...this information will be included as part of the comment response document.</p>
25.	Aubrey Leyda, Aiken, South Carolina	<p>Sirs: I hereby support the actions taken by Senator Tom Young to revise the subject approach to modify the Lock & Dam operations within the North Augusta, SC; that is, do not proceed with the Army Corps Of Engineers planned actions!</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the</p>

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26.	<p>Alan Marberry, Augusta, Georgia</p>	<p>Hi my name is Alan Marberry I live in Augusta ga. I am a regular boater on the savannah river both above and below the dam. I am strongly opposed to this plan because I feel it lowers the river way to much. Maybe if you repaired the dam and made a fish run out of the lock side something like that... 11 of my fishing holes between the dam and I 20 were horrible during the lower water.</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>
27.	<p>Phil Patterson, Augusta, Georgia</p>	<p>And here are the criteria they are looking for to help decide whether the Corps proceeds with the project as planned:-public interest I worry that the river will not be safe and usable. The banks have been shored up for years I'm afraid of erosion. And it looks like hell.</p> <p>- National concern for both the protection and use of important resources I don't think this is an issue at all.</p> <p>-Conservation No advantage</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of</p>

		<ul style="list-style-type: none"> -Economics None -Aesthetics It make the river an ugly stream. -General environmental concerns Erosion -Wetlands If you draw the river down you will destroy wetlands. -Historic properties non-factor -Fish and wildlife Where are the sturgeon going? A couple of miles to the upper locks in Evans. Stupid -land use you will destroy land -recreation the river would become dangerous -water supply and conservation No water to conserve -water quality non-factor -energy needs -safety -consideration of property ownership I think you are not considering anyone in this decision -environmental justice -the needs and welfare of the people You need listen to what we want. I don't care about Sturgeon. But our own Politicians don't 	<p>the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>
28.	Josh Rafoth	<p>As a resident of Richmond county, I feel it is imperative to maintain the river level by repairing the existing lock and dam.</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by</p>

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29.	Yolanda Markham	<p>Hi My husband and I both love boating and fishing the Savannah river. I feel that your plan will in the long run, harm not only the wildlife and boating of the Savannah river but will be very detrimental to the overall economy of Augusta. By lowering the river this much you are actually ruining many peoples docks as well as the downtown scenery and riverwatch views.. Not to forget that that one retaining wall was damaged due to the lowering of the water just for a short time, what about when its down lower for ever what else will go wrong that you cannot foresee? Please forget this bad plan.</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>
30.	Jerry Clontz	<p>Several things are very disturbing about your proposal. 1) you are showing levels for 5,000cfs to fish ladder but during severe droughts the flows will be much lower than that. Your design needs to be for the flows anticipated during the droughts of record experienced since 2001. 2) the sturgeon are no longer an endangered species. Since they have not been able to get to Thurmond dam since 1930 it is ludicrous to destroy the economics of North</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the</p>

		<p>Augusta and Augusta in the pretense that we have to put in a fish ladder 3) As with lake levels the corps ignores economic impact of lake and river levels. I understand you feel congress has not provided that in your responsibilities. As engineers responsible for the SRB the corps should be going to congress and recommend economics be added to your concerns.</p>	<p>shortnose and Atlantic sturgeon which are federally listed as endangered, above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>
31.	James Campbell	<p>Please secure funding to repair the Lock and Dam in Augusta, Georgia. The recent drawdown of the river revealed the unacceptable level of the river in Augusta. We fish, walk, and bike at Lock and Dam park. We are longtime residents of Augusta and think the Lock and Dam should be repaired and a fish ladder built. Thank You</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p> <p>Rehabilitating the New Savannah Bluff Lock and Dam is more costly than other alternatives, fails to allow endangered and threatened species to pass the location and it no longer serves the purpose of its construction – commercial navigation between Augusta and Savannah</p>
32.	Gregory J Sengstock MD, PhD, North Augusta, South Carolina	<p>I am a waterfront property owner upstream from the current New Savannah Bluff lock and dam. We frequently utilize the river via boat and love the current look of the river. I would have to say that during the simulation, the appearance of the river was downgraded (aesthetics). We</p>	<p>Thank you for your comments. The 2012 configuration did not meet the specifications of the 2016 WIIN Act which required an in-channel fish passage. The WINN Act of 2016 therefore takes precedence over the previous legislation that authorized the 2012 design. Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure</p>

went out on the river at the lower water levels and my low depth alarms (set at 2 feet) went off repeatedly. First, I am in disagreement with the current proposed alternative of the rock weir in place of the current lock and dam. The water levels are too low to be agreement with the WIIN Act 2016 in which states: to maintain the pool for navigation, water supply, and recreational activities, as in existence on the date of enactment of this Act. During the simulation, there were many docks laying on the mud. How does this keep with the Act of maintaining the pool? Second, the WIIN Act gives the Secretary leeway in making decisions on the project: as the Secretary determines to be necessary-- It seems to me that a literal interpretation of the Act was done that required alternatives to be explored. The Act states to maintain the pool... and: to allow safe passage over the structure to historic spawning grounds of shortnose sturgeon, Atlantic sturgeon, and other migratory fish; I interpret as over the structure meaning on the other side of the structure, not physically over the structure which seems to have prompted an in-channel fish ladder rather than the original (NAA) SHEPS 2012 model in which an accessory fish ladder is built on the SC side. Third, the original (NAA) SHEPS 2012 model maintains the pool, provides for safe passage over or beyond the structure to historic spawning grounds. There were arguments that fish are not smart enough to find the fish ladder if not in the channel. I think it is more a matter of diffusion, will all fish find the ladder? No. Do all fish that migrate reach spawning grounds in other rivers? No. The whole purpose of the fish ladder was to give them a way, not to guarantee arrival. Fourth, cost estimates are very inexact. No one knows for certain the overall costs. Going with the cheapest bid today guarantees it is the most cost effective over time. The cost estimates show the original (NAA)

Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.

		<p>SHEPS 2012 model as being just as cost effective as the currently proposed alternative. Last, I want to add that the WIINS Act 2016 is a massive document and I would venture to bet that nearly no Congressman even read the document. So to take such a literal interpretation is fraught with error. I think the Secretary could use some common sense and interpret the spirit of the Act. I am in favor of abandoning the current alternative proposals and proceeding with the original SHEPS proposal from 2012. I think this proposal meets all the requirements of the intent and spirit of the WIIN Act 2016, maintains the pool, provides access over or beyond the lock and dam and is similar in costs.</p>	
33.	<p>Christopher K. DeScherer, Southern Environmental Law Center</p>	<p>We are aware of the Public Notice related to the Scoping for Savannah Harbor Expansion Project (SHEP), Modification to Fish Passage Feature at the New Savannah Bluff Lock and Dam (NSBLD). We represent three groups, South Carolina Coastal Conservation League, Savannah Riverkeeper, and South Carolina Wildlife Federation, that entered into a settlement agreement several years ago for litigation related to SHEP. The proposed action is an important component of the SHEP, and our clients intend to submit comments. However, commenting on this particular modification requires the review of complex technical information and documents. Accordingly, we respectfully request a 30 day extension to submit comments on this proposed action.</p>	<p>Concur, a 30 day extension to submit comments on this proposed action was granted.</p>
34.	<p>Anne Bell</p>	<p>Please do Not demolish our Lock & Dam! Surely there is a way to make a safe transit for the sturgeon without jeopardizing our river level and thus dooming our Riverfront development and recreation. Thank you for your reconsideration!</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District</p>

			<p>must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>
35.	Fredrick C. House, Augusta, Georgia	<p>My name is Fredrick C. House. I am a retired physician in Augusta, GA. I have followed the discussion of the proposals for the Savannah River Lock and Dam at August. Let me state unequivocally and forcefully my opinion that the Plan with a drawdown of the Savannah River pool, destruction of the Savannah River Lock and Dam, and the creation of a rock weir, supposedly for "endangered sturgeon" is ill advised, false, destructive, harmful to Augusta's economy and recreation. Furthermore, I believe there is a hidden agenda in this, relative to the deepening of the harbor at Savannah, GA. Local officials have unanimously been opposed to your proposal and any opinion by the 'so-called' Savannah Riverkeeper is essentially hogwash. Maintaining the Pool, the existing structures at the Lock and Dam, and construction of a fish ladder are the only viable and acceptable options other than no action at all.</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>
36.	Bobby Wright	<p>I send this response to state my opposition to the proposed rock weir construction to replace the existing lock and dam. I have a lot of knowledge of the Savannah River in the Augusta area. I fish and kayak in the shoals above Augusta and also power boat in the area below the shoals from the North Augusta boat ramp. I duck hunt on property just below the lock and dam which is fed</p>	<p>A quantitative monitoring program for sturgeon above the Lock and Dam #1 on the Cape Fear River has not been completed. However, we have observational evidence that sturgeon (and many other species, including American shad) have passed Lock and Dam #1. Studies have indicated that rock ramps are the most effective fish passage measure to successfully pass a multitude of species, both large (e.g., sturgeon) and small (e.g., herring). See Bunt et al. (2012) and Franklin et al. (2012) for details.</p>

by water backing in from the river. Personally, I am thrilled that a fish passage is going to be built to allow fish to get further up the river and into the shoals where I like to fish. I don't think the rock weir proposal is the best option for allowing the fish passage. The number of fish passing through the rock weir in NC seems to be totally inconclusive at this point and has not been proven a success for what it was intended to do. During low water periods I don't believe fish could successfully navigate through the rocks. Passages around dams in the western US have proven to be very successful and have a long track record of success. I am also a board member of the Central Savannah River Land Trust. We are dedicated to preserving the water quality of the Savannah River and its watershed. We hold conservation easements on several thousand acres of land within the watershed and are working on several other large tracts of land critical to keep the water in the river as clean as it is today. We focus on preventing or limiting development along the Savannah River and related tributaries. These easements are recorded in the county courthouse and remain in effect in perpetuity, something I am sure you are aware of. I am aware that the lock and dam is just part of the system which controls how much water passes through Augusta in the river and the canal. Obviously Thurmond Dam, Augusta Canal diversion dam and Stevens Creek dam are all factors. I observed the levels during the recent drawdown. Water quality could definitely be effected negatively due to the lower levels. This would be exacerbated during times of low rainfall when releases from Thurmond Dam are in the drought status. Industrial use of the water in this section of the river could be impacted by lower flows which would be bad economically for the community. Lower water flows will also be less able to dilute discharges from

We are confident that a full-width, 2% average slope nature-like channel is the best fish way alternative for the NSBLD project. The Lock and Dam #1 on the Cape Fear River provides an example to guide our design but it is not the only example. A number of other nature-like fish ways at: Roseau Dam, MN; Riverside Dam, MN; Point Dam, MN; Crookston Dam, MN; White Earth Lake Dam, MN; Fargo North Dam, ND; Midtown Dam, MN; Fargo South Dam, MN; Kidder Dam, MN; Dunton Locks, MN; Lyon's Park Dam, MN; Many Point Lake Dam, MN; Fond Du Lac Dam (Aadland 2010); Eureka Dam, WI; Bradford Dam, RI; and Kenyon Mills Dam, RI, can also help inform our design.

A number of design differences between Lock and Dam #1 on the Cape Fear River and the proposed rock ramp at NSBLD are planned that are likely to make it more effective at passing sturgeon. Changes of note include making the rock ramp less steep. The longitudinal slope of the proposed rock ramp at NSBLD will have an overall slope throughout the length of the fishway of less than 2%. The slope of the rock ramp at Lock and Dam #1 on the Cape Fear River varies from 5% at the downstream entrance to 3.3% at the upstream exit. A less steep rock ramp at NSBLD will result in lower average water velocities and less turbulence than the Cape Fear project. Another change relates to the grade control weirs. The grade control weirs in the Cape Fear project have less of a compound cross-sectional geometry. This design may limit the zone-of-passage through the fishway at lower and higher flows. The proposed rock ramp at NSBLD will feature a compound weir design that provides zone-of-passage functionality at a variety of flows for a multitude of species. The Cape Fear project also has tightly spaced weir stones, which makes it harder for large-bodied species, like sturgeon, to pass through the grade control weirs. The proposed rock ramp at NSBLD will have larger gaps between the weir stones meaning large-bodied species like sturgeon will be able pass more easily. Additionally, the rock ramp at Lock and Dam #1 on the Cape Fear River has small pools between the grade control weirs. The proposed rock ramp at NSBLD will have much larger pools that will facilitate resting areas for large migrating sturgeon. Finally, the

		<p>industrial use and lead to lower water quality. The lock and dam is the last line of defense to keep water levels through the area at the levels that have proven for many years to be sufficient for drinking water, industrial use and recreation for this area. The community is also growing so water needs will continue to increase and having less water in the basin will not be conducive to increased demand required by residents and businesses. I fully support repairing the existing lock and dam and building a fish passage to allow fish access to the upper river and the shoals. This is the best option and the only solution that should be approved.</p>	<p>farthest upstream control weir at Lock and Dam #1 on the Cape Fear River does not have a concave shape because the existing dam remained (the dam is perpendicular to flow from shore to shore). This creates a challenging hydraulic for fish to pass. The proposed rock ramp at NSBLD will remove the dam such that the upstream control weir will be concave making it easier for the fish to pass.</p> <p>New Savannah Bluff Lock and Dam as it currently exists has very little impact on flow in the river, either upstream or downstream, as it is a run-of-river dam with very little storage volume. We do not anticipate any of the alternatives considered, including the recommended plan, to have an impact on flows in the river, water quality, or water availability.</p>
37.	Dr. Jason Lanham, Augusta, Georgia	<p>I would like to register my concern for the proposed rock weir in Augusta. Having lived by the canal for the past 11 years and seeing what it looked like after the trail lowering of the water level, this new water level is simply unacceptable. It is not functional and it is certainly not a livable depth for those that live near the canal and those in the surrounding counties. It seems like an easy solution proposed by those that do not call this community home. I urge that a different solution is found. Thank you for listening to my concern.</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>
38.	Chuck Smith, Representative of North Augusta on Aiken County Council	<p>To who it concerns: I am opposed to lowering the pool and installing a fish weir. My name is Chuck Smith and I represent North Augusta on Aiken county council. I have been lobbying for repair of the lock and dam for 15 years. I have seen the damage that lowering the SR pool caused the people who live on the river when</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and</p>

		<p>Mayor Bob Young lowered it at the Corps request years ago. I think lowering the pool to accommodate the weir will cause severe economic damage to both Augusta and North Augusta as well as Aiken County. My option is 1.1, rehabilitate the dam and if the fish weir must be considered then route it through the lock and dam. Why is the sturgeon more important that the quality of life and economic life line of the residents of the river that rely on it daily? When was another river so important to citizens relegated to a mud flat to save money. Has it ever happened in Wash DC? I know it hasn't. You must side on option for the citizens and not an unproven solution or fish weir to satisfy the environmentalist hell bent on a bad solution.</p>	<p>water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>
39.	Rudy Smith	<p>The lock and dam needs to be repaired. That future river level you are submitting is a danger to all who use this river. There is no reason in this world to not repair the dam. You people are trying to ruin a great fishery.</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p> <p>Rehabilitating the New Savannah Bluff Lock and Dam is more costly than other alternatives, fails to allow endangered and threatened species to pass the location and it no longer serves the purpose of its construction – commercial navigation between Augusta and Savannah</p>

<p>40.</p>	<p>Will Scott, SRP Federal Credit Union</p>	<p>The purpose of this email is to provide the Savannah District, U.S. Army Corps of Engineers, Planning Division with important feedback from a resident, tax payer, and business man from the CSRA regarding the recent lowering or river levels of the Savannah River. It is my understanding that this is the comment period regarding the US Army Corps of Engineers plan to remove the New Savannah Bluff lock and dam and replace it with a rock weir.</p> <p>I am unequivocally opposed to the Corp of Engineers permanently lowering the Savannah River levels in the CSRA by removing the current Bluff Lock Dam and replacing it with a rock weir!</p> <p>I believe that although the Corps has performed this lowering experiment in order to get feedback that will be mostly based upon aesthetics, that this proposed solution needs a much larger scientific study that reports to the public on the negative ecological impacts that lowering the water levels would have. The currently proposed solution may be "good" for one species of fish but lowering the water levels will likely cause devastating effects to local wildlife and vegetation.</p> <p>Specifically, harm will occur to:</p> <ul style="list-style-type: none"> Riparian zones also provide wildlife habitat, increased biodiversity, and wildlife corridors, enabling aquatic and riparian organisms to move along river systems avoiding isolated communities. Riparian vegetation can also provide forage for wildlife and livestock. Riparian zones are also important for the fish that live within rivers. Impacts to riparian zones can affect fish, and restoration is not always enough to recover fish populations. They provide native landscape irrigation by extending seasonal or perennial flows of water. Nutrients from terrestrial vegetation (e.g. plant litter and insect drop) are 	<p>The majority of the wetlands immediate adjacent to the river between the NSBLD leading up to the Augusta shoals as through the city of Augusta is Freshwater Forested/Shrub Wetland and are classified as being temporary flooded: Surface water is present for brief periods (from a few days to a few weeks) during the growing season, but the water table usually lies well below the ground surface for the most of the season.</p> <p>With implementation of the recommended plan (alterative 2-6d), or any of the alternatives being evaluated, it is expected that the wetlands immediate adjacent to the river between the NSBLD leading up to the Augusta shoals as through the city of Augusta would continue to be temporarily flooded as it occurs during existing conditions. While it is expected that water levels may vary slightly from the existing conditions as result of the creation of the fish passage structure, the overall composition of the wetlands will not change and therefore the plant and animal communities should not be impacted. The wetlands that are present will continue to be wetland that will be temporarily flooded for brief periods (from a few days to a few weeks) during the growing season. It would just depend on how much water would be within the wetland that might change slightly. The water levels may also change slightly based on whether or not we are in the lower average flow events or in the higher average flow events. During the higher average flow events, it is expected that the water levels within the wetlands should remain relatively consistent to existing conditions. During the lower average flow events (such as during drought conditions), it is expected that the water levels will lower slightly from existing conditions but it should not change the composition of the wetlands because they are already only flooded temporarily, and only for days/weeks at a time.</p> <p>The wetlands near the Augusta shoals are also temporarily flooded but have a slightly different classification. These wetlands have surface water that is present for extended periods especially early in the growing season, but is absent by the end of the growing season in most years. The water table after flooding ceases is variable, extending from saturated to the surface to a water table well below the ground surface. The water levels in this portion</p>
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transferred to aquatic food webs. The vegetation surrounding the stream helps to shade the water, mitigating water temperature changes. The vegetation also contributes wood debris to streams, which is important to maintaining geomorphology.

- From aesthetic, economic and social aspects, these riparian zones contribute to nearby property values through amenity and views, and they improve enjoyment for footpaths and bikeways through supporting foreshore way networks. Space is created for riparian sports such as fishing, swimming and launching for vessels and paddle craft.

- The riparian zone acts as a sacrificial erosion buffer to absorb impacts of factors including climate change, increased runoff from urbanization and increased boat wake without damaging structures located behind a setback zone.

- Riparian zones are important in ecology, environmental resource management, and civil engineering because of their role in soil conservation, their habitat biodiversity, and the influence they have on fauna and aquatic ecosystems, including grasslands, woodlands, wetlands, or even non-vegetative areas. In some regions the terms riparian woodland, riparian forest, riparian buffer zone, riparian corridor and riparian strip are used to characterize a riparian zone. These zones are important natural biofilters, protecting aquatic environments from excessive sedimentation, polluted surface runoff and erosion. They supply shelter and food for many aquatic animals and shade that limits stream temperature change. When riparian zones are damaged by construction, agriculture or silviculture, biological restoration can take place, usually by human intervention in erosion control and revegetation. If the area adjacent to a watercourse has standing water or

of the river are not expected to change as result of the recommended plan (alternative 2-6d) or from any of the other alternatives being evaluated from what is seen as part of the existing conditions. As a result, the composition of these wetlands will not be altered and will not impact the plant and animal communities.

The USACE Savannah District must follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality, according to Implementation Guidance, of the upstream pool of the New Savannah Bluff Lock and Dam for the purpose of recreational navigation and water supply.

For more information on the simulation event that occurred in February 2019 please see Engineering Appendix Attachment 4.

saturated soil for as long as a season, it is normally termed a wetland because of its hydric soil characteristics.

- Research shows that riparian zones are instrumental in water quality improvement for both surface runoff and water flowing into streams through subsurface or groundwater flow. Riparian zones can play a role in lowering nitrate contamination in surface runoff, such as manure and other fertilizers from agricultural fields, that would otherwise damage ecosystems and human health. Particularly, the attenuation of nitrate or denitrification of the nitrates from fertilizer in this buffer zone is important. The use of wetland riparian zones shows a particularly high rate of removal of nitrate entering a stream and thus has a place in agricultural management.

- Vernal pools, also called vernal ponds or ephemeral pools, are seasonal pools of water that provide habitat for distinctive plants and animals. They are a distinctive type of wetland usually devoid of fish, and thus allow the safe development of natal amphibian and insect species unable to withstand competition or predation by fish.

Additionally, reducing water levels will cause the following:

- Land subsidence (when large amounts of groundwater have been withdrawn from certain types of rocks, such as fine-grained sediments.)
- Increased pumping costs for water supply and irrigation.
- River bank/bed erosion
- Degradation in River Water Quality
- The reduction of lowering the flood retention during increased flow events

		<ul style="list-style-type: none"> •Changes in river stream temperature that may harm other fish and other aquatic creatures. •Loss of economic revenue to the local cities •Personal safety issues for individuals who use the waterway •Loss of property values and tax revenue <p>Certainly, these reasons are enough to make it mandatory that a public study be commissioned and shared with residents of the CSRA of how the rock weir replacement will impact all these environmental, economic, and public issues must before a final decision can be reached.</p> <p>Thank you for this opportunity to share my comments.</p>	
41.	Hameed Malik, Augusta Engineering Department, Augusta, Georgia	How I can get clean copy of all posted documents? Posted key documents such as Cost Engineering are not readable. I can provide UPS shipper number for overnighting the documents to me.	Thank you for the comment. Per our conversation, we have provided you the updated version of the cost engineering appendix which is easier to read.
42.	Richard and Catherine Gedds, North Augusta, South Carolina	The COE's proposal for a rock weir which lowers the normal pool of the Savannah River in the downtown North Augusta/Augusta area is a disgrace. This beautiful river is the scene of increasing commercial and residential development dependent on a river, but now threatened with devastation by a drawdown of the river level. Neither bigger ships into the Savannah harbor (there are plenty of other ports and normal size ships), or a few more miles for sturgeon to migrate is worth this travesty. Why should Savannah receive billions in benefits at the expense of North Augusta and Augusta's futures? I am not a riverfront property owner, but the destruction of their property value certainly needs to be a no-go in any plan. To date, I do not see it being considered. The ONLY way I have	Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under

		<p>heard to meet all the goals and needs of this project - INCLUDING saving the North Augusta/Augusta riverfront, is to repair and maintain the lock and dam. If a fish passage is needed to be added, do so, but maintain the current normal pool level.</p>	<p>existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p> <p>The changes in appearance of the shoreline of properties along the pool are not yet known. The simulation event occurred after a period of higher water levels and high flows during the winter. The appearance along these properties may change when the actual project is constructed.</p> <p>Rehabilitating the New Savannah Bluff Lock and Dam is more costly than other alternatives, fails to allow endangered and threatened species to pass the location and it no longer serves the purpose of its construction – commercial navigation between Augusta and Savannah</p>
43.	Jeremy Mace, North Augusta, South Carolina	<p>I live in North Augusta SC and own an advertising agency also located in North Augusta. With kids in the school system and clients throughout the CSRA, I am deeply concerned about the river and the proposed Army Corps solution. I oppose the alternative put forth and ask you to reconsider fixing or repairing the Lock and Dam to accommodate the needs of the Savannah Port without damaging our riverfront and causing harm to the businesses and recreation of our entire community.</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p> <p>Rehabilitating the New Savannah Bluff Lock and Dam is more costly than other alternatives, fails to allow endangered and threatened species to pass the location and it no longer serves the purpose of its construction – commercial navigation between Augusta and Savannah</p>

44.	Jason Stark	I have no problem with your plan. The community will figure out ways to utilize the acres of shoreline that will eventually dry out. It's hard to visualize now but it will happen	Thank you for your comments and your support of our draft recommended plan.
45.	Lowell Greenbaum, Augusta, Georgia	I have lived on the Savannah River (1343 Waters Edge Dr) for over 35 years. DO NOT LOWER THE RIVER! In 2000 we were part of a group known as SOS (Save our Savannah). We went to Washington and spoke to Representative Charles Norwood and Senator Lindsey Graham. They approved a plan to fix the lock and dam and President Clinton approved the repair. Congress did not appropriate the money. Nevertheless, lowering the Savannah left mudflats and our dock half in the mud. Do not ruin the Jewel of Augusta!!	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p> <p>Rehabilitating the New Savannah Bluff Lock and Dam is more costly than other alternatives, fails to allow endangered and threatened species to pass the location and it no longer serves the purpose of its construction – commercial navigation between Augusta and Savannah</p>
46.	Mason Thompson, Augusta, Georgia	I am a 71 year old, lifelong resident of Georgia and have lived in Augusta for 49 years. I oppose the U.S. Army Corps of Engineers' plan to remove the New Savannah Bluff Lock and Dam and replace it with a rock weir on the Savannah River. Lowering the river level will significantly harm the Augusta area, will lower property values all along the river, and affect the quality of life forever. I cannot conceive of how anyone would make such a proposal. Another study should be done to preserve the pool, to examine if power can be generated, and to provide additional	Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and

		<p>woodlands and wildlife sanctuaries along the river with controlled growth and recreational activities. The goal of everyone should be to enhance the river not to destroy it and the surrounding area.</p>	<p>comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>
<p>47.</p>	<p>Drs. Gordon and Jennifer Jones, North Augusta, South Carolina</p>	<p>We live in the Savannah River Place Culdisaq on the Savannah River in the River North housing area South of US 1 Aiken Augusta Highway. The attached images are from the shore illustrating how our dock and each of our neighbors' docks left and right of us will be settled on the ground if the proposed project design is executed. We wish to know how the US Corp of Engineers will be determining the value and compensation method to the property owners in exchange for the imminent domain takings in the use of our docks (ours is only 3 years old at a cost of \$45,000). This taking should also include the reduction in value of our overall property as we will no longer have a direct benefit to using the river from our property which was a significant part in the determination of value when we purchased the property in 2011.</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p> <p>The changes in appearance of the shoreline of properties along the pool are not yet known. The simulation event occurred after a period of higher water levels and high flows during the winter. The appearance along these properties may change when the actual project is constructed.</p> <p>USACE completed an after-action review of the February 2019 simulation. For information on the after-action review and additional information about the February 2019 simulation, please see the Engineering Appendix, Attachment 4.</p> <p>Please review the Department of the Army regulatory permit for your dock. Dock owners may submit an application to modify to extend</p>

			their dock to the U.S. Army Corps Regulatory office.
48.	Richard A. Ingrim Jr., Evans, Georgia	I have been a resident of Augusta for 59 years. The removal of the lock and any lowering of the river would be ridiculous and would make the river through Augusta ugly, unsafe and would ruin the value of all adjacent land.	Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.
49.	Barry Myers, North Augusta, South Carolina	We have been spoiled with our lovely river - both for the beauty and the usability or the water in the river. We wish to remain spoiled. The river is not usable in the condition as demonstrated in the recent draw-down.	Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a

			result of the creation of the fish passage structure.
50.	Tricia Watson, North Augusta, South Carolina	<p>I am emailing to express my significant concern over the USACE plans as they pertain to the New Savannah Bluff Lock and Dam replacement with a rock weir. As a 3 year resident of North Augusta, SC, I do feel strongly that the preservation of critical habitats, ecology, and overall environmental conservation is a paramount priority. However, it must also be balanced thoughtfully against the long-term economic, aesthetic, recreational, and property-ownership implications of such decisions. As the growth of the CSRA is intricately linked with the Savannah River, I have serious concerns and hesitation against this project moving forward based on the recent simulation. Overall, as a resident of the CSRA, I believe that the rock weir will have significant negative impacts in both Augusta, GA and North Augusta, SC. As such, I am currently opposed to the plan to move forward with the rock weir without significant revision or alterations.</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>
51.	Gerald Jannik	<p>I am the Regatta Director for the Head of the South Regatta, which is one of the largest one day regattas in the country. Lowering the Savannah River level in Augusta will greatly affect the Augusta Rowing Club and the safe hosting of the Head of the South Regatta. Please reconsider and keep the existing Lock and Dam and adopt option 1.1.Thanks for your consideration.</p>	<p>Thank you for your comments. The USACE Savannah District's must follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality, according to Implementation Guidance, of the upstream pool of the New Savannah Bluff Lock and Dam for the purpose of recreational navigation and water supply.</p> <p>The Savannah River Basin Water Control Manual would be updated to increase flows from J. Strom Thurmond to meet water surface elevations required for the special events including the Head of the South Regatta except when in drought contingency operations and flood conditions</p>

52.	Eric Groothand, Evans, Georgia	<p>To whom it may concern, As a property owner on one of the many creeks along the Savannah River in Evans, Ga I wish to express my concerns at the water levels brought on by the recent draw down of the pool in relation to the New Savannah Bluff Lock and Dam. This has huge potential of ruining our shores lines and accustomed beauty along the banks of the Savannah river and her tributaries affected by a possible weir construction. I implore you to seek funding to repair or rebuild the existing infrastructure and keep the pool at their current levels. Thank you for your time</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p> <p>The changes in appearance of the shoreline of properties along the pool are not yet known. The simulation event occurred after a period of higher water levels and high flows during the winter. The appearance along these properties may change when the actual project is constructed.</p>
53.	Bill Keogh	<p>This is in regard to the plans for the lock and dam in Augusta. The drawdown of the Savannah River to the proposed new pool depth showed how damaging the plan would be if implemented. Communities on both sides of the river have focused growth for years on the riverfront. All we had after the drawdown was a muddy channel. I do not have an opinion about the best design, but please make/retain the structure so that the pool level is not dropped below current levels</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being</p>

			<p>evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p> <p>The changes in appearance of the shoreline of properties along the pool are not yet known. The simulation event occurred after a period of higher water levels and high flows during the winter. The appearance along these properties may change when the actual project is constructed.</p>
54.	David L. Harrison, Sr.	<p>Since I'm sure you have heard it all before I would simply like to state that I am very much opposed to the current recommendation to replace the lock and dam with a rock weir. As was demonstrated during the past drawdown as well as the one that was done years ago this plan would damage existing property and development value along the once beautiful riverfront at the very time that said development is about to flourish and provide significant economic growth in the area. It is mighty heavy handed for the federal government (the Corps of Engineers) to try and force the people of this area to accept a plan that no one here wants and for which there is no compelling reason (national security, etc.) that might make it necessary to override the will of the people. So to this plan I would like to voice a resounding NO.</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>
55.	Jeff Siverhus	<p>I am writing to voice my concern and displeasure at the current plan to demolish Lock and dam and replace with a rock weir. The L&D has been providing a pool for the communities of North Augusta and Augusta for over 80 years. It is a source of drinking water, economic development and recreation for the CSRA. Your current plan would eliminate all the aforementioned for area. In addition your current plan is in direct violation of the law. The WIIN act of 2016 specifically states the pool must be maintained to level when law</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of</p>

		<p>was enacted. That would be a level of 114.5 ' at the 5th street bridge. There is no physical way possible to maintain this level with a rock weir. I am requesting you use option 1.1, which suits all parties involved. This would repair L&D and provide a fish passage for sturgeon, in addition, you could open locks during spawning season providing alternate/ additional means of spawning.</p>	<p>the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>
56.	<p>Dorothy Koonce, North Augusta, South Carolina</p>	<p>The river is a wonderful asset to both Georgia & South Carolina. It provides recreation and a natural beauty that cannot be bought. It would be shameful to allow this to leave us. Please do whatever is necessary to preserve it.</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>
57.	<p>Sam Booher, Augusta, Georgia</p>	<p>I am not in favor of repairing the existing lock. This effort would require periodically spending good money, will not move the fish upstream and the dam and lock will continually require repairs. I am in favor of a rock weir dam with a fish passage or fish-ways. Also consideration should be a fish elevator or fish lift, as its name implies, breaks with the ladder design by providing a sort of elevator to carry fish over a barrier. This is well suited to rock weir. Recent Public Display: The problem the with the resent public display was that the drop in flow of the</p>	<p>Thank you for your comments. Thank you for your comments and support on the Fish Passage project on NSBLD.</p> <p>The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability</p>

		<p>river was far below the level that the rock weir should be designed to hold the Augusta water level. This gave the citizens that idea that the water level would always be this low. A rock weir can be set at any level. The test should not have dropped the city pool. The current level is the same water level that the rock weir should hold the city pool. As designed the normal flow should go down the fish passage. In the event of a flood or high water discharge, the water flow would go over the entire wire to include fish passage.</p>	<p>to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>
58.	Mike Hattway, Columbia County	<p>My name is Mike Hattaway. I am 60 years old born and raised in Augusta and currently reside in Columbia County. I am wanting to let the parties to be know that I am in favor of Option 1.1 maintaining the dam with the lock being used as a fish ladder. I cannot believe that the Corps are considering eliminating the dam for a fish with all of the benefits a constant water level provide to both Augusta, Ga. and North Augusta, S.C. It's not our (Augusta and North Augusta residents) fault that the deepening of the Savannah harbor has put us in this situation.</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>
59.	General Public	<p>I am writing in OPPOSITION to the USACE proposal to replace the lock and dam on the Savannah River adjacent to Bush field with a rock dam. Recent test results show devastating impact to river water levels upstream in Augusta and North Augusta. As an avid user of the river (paddle boarding, kayaking, swimming, and bicycling along side) at 20 times per month, please do NOT implement the proposed rock dam</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest</p>

		<p>option. On behalf of all citizens of the CSRA, as well as developers building on or near the river, do not ruin this beautiful venue with your proposed option. You're an organization of engineers, so get creative and engineer a solution that does not change our water levels while still providing a fish ladder. Makes us proud USACE and implement a solution that is a "Win" for everyone (including the fish).</p>	<p>probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>
60.	<p>Keith Shafer, President, Goodale Landing Homeowners Association</p>	<p>We learned recently of information regarding the New Savannah Bluff Lock and Dam (NSBLD) and our homeowners association wishes to have it included as part of the public comment. Our view of the future: That the U.S. Army Corps of Engineers is involved to the least extent possible with the future operation of the Lock and Dam. We recognize that the Corps is operating according to its mission, that the NSBLD was decommissioned, and that a natural rock weir appears to be the Corps' preferred solution to provide fish migration. We request that the Corps consider a plan that maximizes fish migration, preserves the Park, minimizes the need for the Corps' staff and budget, provides annual income from power generation to the city and other agencies, and recognizes the importance of present and future uses of the river for the education, recreation and enjoyment of the public.</p> <p>Details of the plan: A fish lift and not a natural rock weir should be used to satisfy the migration requirement. The Corps is familiar with these lifts and they are frequently used. The fish lift could be attached to and used in coordination with the rebuilt Lock. A fish lift also provides educational opportunities for the public. The Dam should be repaired and equipped with turbines installed in existing conduits to provide electrical power to the airport and/or water treatment plant,</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat.</p> <p>USACE has utilized both (1) expertise through coordination with NOAA/NMFS fish passage design experts and (2) the 2016 joint publication by NOAA, USGS, and USFWS "Technical Memorandum Federal Interagency Nature-like Fishway Passage Design Guidelines for Atlantic Coast Diadromous Fishes" to design the fish passage structure at the New Savannah Bluff Lock and Dam. This design allows for a range of velocity and flow conditions across the structure and allows for the opportunity for successful passage of a range of fish species of ally body types, sizes and swimming capabilities. The specific design features regarding weir opening width, depth and maximum velocities as well as the minimum depth and length of the resting pools between the weirs will be developed during the full design.</p>

both located within close proximity to the dam. Engineers have stated that the existing dam is fundamentally strong and does not require replacement. At the time when Charles Norwood was 10th district congressman, he arranged for conduits to be installed in the dam that could be used in future for turbines. The dam is capable of generating significant income and does not require significant rebuilding. The Lock is replaced, preserving Augusta's designation as a "Port City," and provides access by boat to the lower river. It is critical to the present and future enjoyment of the river for the public to have access to the lower river. Boat ramps are not a solution for those with larger craft and the possibility of wilderness and nature tours by larger boats operated commercially from downtown Augusta would be precluded. Augusta would lose its designation as a "Port City." The park must be protected. The installation of a rock weir requires compromising the public's use and enjoyment of the New Savannah Bluff Lock and Dam Park as a portion of the Park would be used for drainage when river levels rise. This is one of the area's most scenic public parks and it must be preserved intact. The Augusta Canal Authority could operate the NSBLD. Because the Canal Authority presently operates hydro-electric turbines along with cultural and recreational projects in Augusta it is an obvious choice to manage and operate the NSBLD. This minimizes the need for the Corps to provide budget and staff. This plan costs less. Why remove a good dam that could produce annual operating income? Why take a section of a beautiful park for drainage? Why use a rock weir for fish migration when studies show fish ladders are more successful? Why remove the Lock and Augusta's designation as Port City? Why ask the Corps to operate

Hydropower is not an authorized purpose of New Savannah Bluff Lock & Dam, nor are facilities currently in place to accommodate power generation. Repurposing the dam is beyond the scope of the Fish Passage project.

The condition of the dam is rated as "poor", according to the most recent inspection of the dam. This assessment includes substantial deterioration of the lock and dam, including numerous structural issues.

The lock was closed in May 2014 due to safety concerns with the stability of the lower riverside lock wall during lockages. The WIIN Act officially de-authorized the project's use for commercial navigation in 2016. Without authorization to operate the facility for commercial navigation, Congress cannot appropriate federal funding for repairs toward the structure's original function. In addition, funding was unavailable for nearly 20 years before the structure was de-authorized because the structure is no longer able to serve its federal purpose of commercial navigation.

The floodplain bench for the recommended plan would cover a portion of the existing park, while leaving a large section of it in place. The floodplain bench, when not engaged during high flows would also provide for recreational opportunities. The loss of a portion of the park is necessary to provide sufficient conveyance to pass high flows without inducing flood damages upstream.

		<p>the Lock and Dam when they don't need to?</p> <p>Thank you for your consideration of these comments.</p>	
61.	Peter E. Johnston, Evans, Georgia	<p>As a recent (3years) homeowner in Evans, I have become quite interested in learning the history of Georgia and of course including Augusta, the 2nd largest city in the state. As you know the city is still struggling to recover from the economic downturn of 2008. It is making significant progress with Augusta University, Fort Gordon Cyber Warfare center, health care facilities and Savannah River and Augusta Canal boat tours. Augusta National continues to increase in size to accommodate future plans. The Masters Tournament is economically essential to all in the CSRA. Persons from all around the world travel to Augusta to experience the event. Nothing should be done that will result in an adverse opinion of the city. Throughout the U.S. many cities have taken advantage of a rivers flowing through them. Augusta has a developed river walk which positively enhances the downtown. Marriott's hotel on the river is a flagship anchor to the walk. Personal homes with boat docks across the river as well as public docks downtown will be adversely affected by a lower water level. Further, recreational boating, commercial boating endeavors and the general aesthetics of the area will also be adversely affected by lower water. When I refer to "lower water" I refer to the level the U.S. Corp. Of Engineers recently used as an example of the level created by a possible rock weir. It is my desire to maintain the Savannah River at the levels existing prior to USACE proposals.</p>	<p>Thank you for your comments. The USACE Savannah District's must follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality, according to Implementation Guidance, of the upstream pool of the New Savannah Bluff Lock and Dam for the purpose of recreational navigation and water supply.</p> <p>In addition, any dock constructed in Section 10 navigable waters requires a permit. The permit states that "The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure ... the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work...without expense to the United States. No claim shall be made against the United States on account of such removal or alteration."</p>
62.	Ed and Linda Lake, Augusta, Georgia	<p>The Lock and Dam on the Savannah River needs to be preserved for the benefit of both Georgia and South Carolina. The Savannah River delivers drinking water for both states</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of</p>

		<p>as well as providing recreational opportunities for its citizens. We have been residents for 32 years in Augusta and have witnessed significant growth due to the availability of the "full pool" water levels. Industry and business have flourished over the last 10 years with a new baseball park, hotel, and restaurants being built on the Savannah. So please work with our Congressman, Rick Allen, and develop a plan to either remodel the Lock and Dam or rebuild it...it is not a want...it is a must have!</p>	<p>the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p> <p>Rehabilitating the New Savannah Bluff Lock and Dam is more costly than other alternatives, fails to allow endangered and threatened species to pass the location and it no longer serves the purpose of its construction – commercial navigation between Augusta and Savannah</p>
63.	Bill Noll, Evans, Georgia	<p>Recommend you do not tear down the subject facility, but if necessary ask Congress to provide a waiver, request funds to keep the facility and add a way for the fish to swim upstream similar to Washington state facility. The river is a great asset to the state at its present height, and should not be lowered.</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a</p>

			<p>result of the creation of the fish passage structure.</p> <p>The lock and dam poses an impassable barrier to endangered sturgeon. This fish cannot 'jump' over obstacles. Some of these fish can weigh in the hundreds of pounds</p>
64.	Sam Graci, Augusta, Georgia	<p>I am writing with my concerns over the proposed elimination of the Lock and Dam and significant lowering of the water levels of the Savannah River. I have lived in Augusta, GA for 31 years since moving here after a 5 years in the US Army. The Savannah River has provided much joy throughout the years and has potential that has not yet been realized. Augusta is just now growing to the size that resources are becoming available to grow the river area as seen in downtown Augusta and North Augusta. Lowering the river to levels seen recently will effect this growth negatively and take away from the natural beauty and recreational activities. My family and I, along with most I have spoken with, are very concerned that we are losing our river, its beauty, and future potential. We would like to see a solution that retains current water levels, allows fish and boat passage, and capitalizes on recreational potential such as kayaking, rafting, boating, hiking, biking, zip lining, shopping, dining, and camping in the Lock and Dam area and above. Please do not destroy our beautiful Savannah River and its future.</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>
65.	Richard B. Swartz, Chairman and Professor Department of Emergency Medicine and Hospitalist Services Medical College of Georgia at Augusta University	<p>As a resident of the CSRA area it is very important to have recreational opportunities on the Savannah River. The recent draw down demonstrated that the water level with the current rock weir design is too low. This would substantially limit access to the river and have a negative impact to the community. From my perspective I strongly support a design that not only maintains a similar pool as the current lock and dam but also</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest</p>

		<p>includes a white water / fish passage course. This would add substantially to the communities utilization of the river and would improve the migration of fish in the Savannah River. Thank you for the consideration.</p>	<p>probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p> <p>The inclusion of a whitewater course is beyond the scope of our mission. Comments on a whitewater course should be addressed to your local elected officials.</p>
66.	<p>Neil and Angela Epperly, North Augusta, South Carolina</p>	<p>We are property owners in the Campbell Towne Landing development in North Augusta, SC. Our property has Savannah River frontage and a boat dock. The US Army Corps of Engineers citing compliance with the Water Infrastructure Improvements for the Nation (WIIN) Act and as part of the Savannah Harbor Expansion Project has a plan to replace the New Savannah Bluff Lock and Dam with a fixed rock weir titled Alternative 2-6d. There was a recent intentional drawdown of the Savannah River pool to simulate the effects of those planned changes. Following the simulation, we must express our complete opposition to this alternative. We agree with the City of North August and Aiken County and endorse Option 1-1 in place of the proposed alternative. Option 1-1 keeps the current lock and dam in place with a passage for the fish on the Georgia side of the structure. The only way to preserve the river pool is by keeping dam in place. Here are our other specific public and personal concerns for the effects of the alternative plan on the North Augusta portion of the river. If the simulated drawdown truly reflects future water levels, the use of the Savannah River by power boaters will be limited. Per</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>

public video reports provided by the Savannah Riverkeeper, the only usable launch ramp will be in North Augusta on Hammonds Ferry Drive. The Riverkeeper's video also suggests that passage downriver from the North Augusta ramp will be limited or even impossible due to shallow water and obstacles located between the 13th street Bridge and the marina. Boaters will literally be forced to use the upriver areas between the launch ramp and the 13th street Bridge. At current water levels, the boating traffic in this area is already at unsafe levels on busy weekends. The Corps and DNR are well aware of boaters creating excessive wakes and jet skiers dashing around in random directional patterns in this area. A shallow and narrower river coupled with increased traffic will serve only to make this a much more dangerous river environment.

Drought may affect the ability of the city of North Augusta to obtain safe drinking water. Per a recent Corps press conference during the drawdown, the Corps was in daily or more frequent contact with the water treatment plant to ensure there were no issues. Obviously, the Corps was concerned about the drawdown having an effect on the water treatment plant. At the current water level there is a buffer to protect against drought. We are worried that a drought occurring after the river is lowered will put the North Augusta water supply at risk. We specifically purchased our home on the Savannah River instead of Lake Thurmond. This was because the Lake Thurmond water levels seem to be low for significant periods of time. We have often seen docks on the ground at the lake. On the river our dock floats....that is until the drawdown. With the drawdown, our "floating" boat dock was sitting on the ground in mud. With the new lower water level we will have to spend hours of our time submitting new dock

		<p>plans for a new permit from the Corps in order to move our dock further from the shore. This will be into the more busy, more shallow and more narrow river noted above. We are concerned that any new permit will be denied by the Corps because of space limitations. If allowed, we will have spent hours and hours of our time and thousands of dollars of expense to move the dock. Finally, we have spoken with Realtors who evaluated our property while the drawdown was in effect. Our suspicion that river front property values will decline in the face of the new lower river level was of course confirmed. Thank you for this opportunity to voice our concerns and opposition to the current plan. We obviously have a vested interest in the outcome of this issue and we support Option 1-1 as a means to comply with the WIIN Act while maintaining the current river pool.</p>	
67.	Janice Mousseau	<p>I strongly support NOT doing anything to the lock and dam that will result in a permanent lowering of the Savannah River. I believe that lowering the river will have a detrimental effect on the economy of Augusta in relationship to tourism as well as a detrimental effect on the people living next to the river.</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>

68.	Judy and Parnell Peterson	<p>The lowering of the Savannah River level at the above location was tried several years ago with disastrous results. So why was the exercise in futility tried again? My husband and I are totally against the present plan. I am sure that with the technology and engineering abilities today that a better plan can be made that will keep our river levels high and still accommodate the endangered fish. One aerial view I saw of the Lock and Dam showed, for lack of better wording, what looks like a "water stair" - weir? - on the South Carolina side of the dam. Could this not be improved for the fish to get upstream while updating the lock and dam? It might cost a little more, but the property values for owners and businesses, as well as the recreation value above the dam would, I believe, far outweigh the cost. And, no, we do not live on the river, unfortunately. However, my family and I have enjoyed the Savannah River all my life - and my parents and grandparents before me. First, fishing and picnicking from the banks - I even took my elderly parents out to the Lock and Dam Park on several occasions for impromptu picnics. We have enjoyed the Riverwalks on both sides of the river. And we have also enjoyed being ON the river - all the way from the rapids down below the locks. What a thrill that was as a child to be lowered/raised by the locks! We often took friends who didn't have boats so they could see the beautiful homes and the beautiful savannahs. The natural beauty of the river is magnificent. Please go back to the drawing board and work with our state and local officials to come up with a plan that will keep our beautiful Savannah River a river.</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>
69.	Carol Campbell	<p>I am writing concerning the ill thought out plan of the Army Corp of Engineers to build a rock weir instead of repairing or replacing the lock and dam. The entire CSRA has been experiencing an economic revitalization recently and I fear that</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool</p>

		<p>lowering the river will have a highly negative economic impact on residents (and visitors) to the area. it has been exciting to experience the recent vitality and growth of the entire area. After several years of stagnation, the CSRA is now becoming an exciting environment. When the Corp lowered the river a few days ago, structures were exposed, boats and docks were sitting on mud and many places on the river became difficult to navigate. It was also very unattractive. The appearance is not the largest problem however, it is the loss of property values and stifling of economic growth that will be the most affected. Augusta just landed a large depot project on the river, North Augusta has recently built a large complex highlighted by the river and other projects are planned throughout the area. Alarmingly, an entire condominium community in Augusta will be threatened if the river is lowered. We know that a much smarter plan can be developed to protect the citizens of the CSRA. We love our fish, but we know that a smart plan to help them can be developed to help them that includes protecting the citizens' property values, business and overall development of the region. If you continue with the proposal from the Army Corp of Engineers, it will have a devastating effect upon the entire community.</p>	<p>of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>
70.	Carlos Stewart	<p>Regarding the Augusta-Richmond County Lock and Dam, I personally would like to see the structure torn down and replaced with the rock weir. First, it makes financial sense. The commissioners have done little to survey or educate the public about their plan. The Lock and Dam Park and the downtown Savannah River area are severely underutilized by the residents of the CSRA. Yet, the commissioners want the public to pay for the yearly maintenance. Apparently there is a budget for the maintenance and upkeep of numerous public buildings, fire</p>	<p>Thank you for your comments and your support of the draft recommended plan.</p>

stations and other park areas in the city. These areas have, to the point of embarrassment, been so poorly managed to where it has been headlined in news and topics of litigation. A more sensible plan to lobby for keeping the Lock and Dam would have been to add a hydroelectric apparatus to the Lock and Dam so it could generate electricity and pay for itself. The City of Augusta does a poor job keeping its waterways clean. There is trash and debris all along the river from 13th Street down to and beyond the Lock and Dam, especially where the homeless reside and where people fish from the bank. The most obvious trash is Styrofoam, paper cups, and plastic bags. However, automobile tires, hypodermic needles, and grocery carts can be found at the boat launches and along other areas of river. Dropping the river a few feet may dissuade some poachers from spear fishing at night. The lower pool may make it more challenging for them to operate their fair-sized boats between 13th Street and the lock. On many occasions, the fish and animals they kill are just dumped at the boat launch near the Boathouse Community Center. There is a good chance that some of the fish that government is trying to protect fall victim to this activity. Moreover, the area south of the Lock and Dam has essentially been destroyed by 4x4s and off-road vehicles. As far as safety, human fecal matter and bacteria have been an issue the Augusta Canal, which is utilized for kayaking, fishing, and other recreational activities; it connects to the Savannah River. It has been reported that 70% of African-Americans cannot swim. That percentage is probably higher in the CSRA. So, why encourage zip lines and whitewater activities? In other words, the zip lines and white water park is really for a minority group; and of the 30% that can swim, only about 1% of that group can probably afford a kayak or have any interest in a white

water park. There are no Lifebuoys or water rescue buoys present at the Lock and Dam. They used to be found along the fencing and easy to spot. What happened to them? The majority of the activities the City of Augusta claims will be affected by a lower water pool are for visitors, not good for the environment, and does not benefit the local tax payers. I would like to see the Augusta commissioners focus more on education and conservation when it comes to planning for the Lock and Dam. Why not incorporate the Phinizy Swamp Nature Park and the Lock and Dam Park? It seems fruitless to have a nature sanctuary right next to something with potentially high liability and traffic as a zip line or white water park. I am willing to bet that most in this area cannot identify poison ivy or a copperhead snake. Build a structure that can be utilized by local schools and colleges to educate the public so they can learn more about nature and appreciate this region. If done correctly, bigger money can be obtained year around through visitation, grants and research, as compared to a zip line. Apparently the commissioners have an extra \$950,000 they can waste annually. I can think of more constructive ways to spend that money, like attracting stronger teachers to improve literacy, improving public transportation, picking up trash, more city jobs, sensitivity training for city workers, seminars and trips for councilmen so they can see how others in city governments work as a team, planning and resolving conflicts. Have the councilmen surveyed the public to see if they want to pay for something they may not care about or use? Did you ask the fishermen, or those who frequent the park for its tranquility, what they prefer? Surely, most do not want higher taxes, especially the bank fishermen. Many of them, fish to eat, not for sport.

71.	Ken Hair, Columbia County	My name is Ken Hair. I am 64 years old born and raised in Augusta and currently reside in Columbia County. I am wanting to let the parties to be know that I am in favor of Option 1.1 maintaining the dam with the lock being used as a fish ladder. I cannot believe that the Corps are considering eliminating the dam for a fish with all of the benefits a constant water level provide to both Augusta, Ga. and North Augusta, S.C. It's not our (Augusta and North Augusta residents) fault that the deepening of the Savannah harbor has put us in the situation.	Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.
72.	L. Philip Christman, II, Augusta, Georgia	Please save our river pool by repairing the lock and dam to proper functioning and, if necessary, add a fish ladder by-pass channel to aid spawning migration. Do not build the rock weir as that will not be satisfactory and will create a lower pool level and a permanent blockade of the river with attendant resulting problems.	Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.
73.	Bob Trescott, Augusta, Georgia	The Savannah has always been an important river, full of life. Just above	Thank you for your comments. The USACE Savannah District's focus is to follow the

		<p>Augusta, the Fall line produced Rapids. Native trails converged here. In 1736, Augusta was founded at the highest point of navigation on the river. The river continued as an important transportation link even when supplemented by road and rail. After 200 years, the Lock & Dam was built to enable deeper draft vessels to reach existing dock facilities in Augusta and to protect the required pool from low water and flood. For 40 years, the Lock & Dam performed those missions, until commercial river traffic lost any competitive market advantage it once had. For 40 more years, the Lock & Dam continued to maintain the pool and to support recreational uses. During its 80 years, we became dependent on the pool both for flood protection and for many other economically valuable uses from water intakes, water access from docks, depth for many activities, etc. and even to maintain an attractive appearance. We also learned of the importance of restoring migratory fish access to above Augusta. Funding 80 years ago was based on the economic importance of commercial navigation and flood control; funding today should reflect all identifiable needs, for now and into another 40-80 year future. Current funding and plans are based on only some of the needs and we are trying to stretch inadequate planning and resources just to get something done. (Imagine trying to paint a shed that requires a gallon of paint by adding water to a quart can; it won't look right and it won't last.) The riverfront expanses of Augusta and North Augusta with their extremely valuable infrastructure, real estate, present and future uses and protections deserve at least as much attention as the already identified goals for any river structure.</p>	<p>legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p> <p>The New Savannah Bluff Lock and Dam does not now nor has it ever had a flood control mission or capability.</p>
74.	Maria Stephens	<p>I support the local community leaders in maintaining the water level of the pool above the lock and dam is critical so that our water users are not affected. The Cities of Augusta and North Augusta, (Aiken County), have</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while</p>

		<p>come together supporting resolutions that maintain the pool at or around its current level-approximately 114.5 feet. With the continued growth of our area, South Carolina and Georgia have come together to develop and reinvigorate the waterfront. The WIIN Act of 2016 specifically states the pool must be maintained to level when law was enacted. That would be a level of 114.5 ' at the 5th street bridge. There is no physical way possible to maintain this level with a rock weir. I am requesting you use option 1.1, which suits all parties involved. This would repair L&D and provide a fish passage for sturgeon, in addition, you could open locks during spawning season providing alternate/ additional means of spawning.</p>	<p>preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>
75.	John Dewes, South Carolina	<p>I am opposed to the Army Corp of Engineers' (ACE) proposal to replace Augusta's Lock and Dam with a fish weir. One important point that I believe is given little attention is the reason this issue exists in the first place. The main goal is to mitigate the environmental impact of their work in Savannah. While deepening the port of Savannah, the natural spawning areas for a couple of native fish species (sturgeon, if I remember) were reduced. The National Environmental Policy Act (NEPA) requires mitigation of any environmental damage caused by governmental actions (or actions approved by the government). The ACE wants to put fish ladders where the current dams are in order to expand the spawning areas available to the native fish. Thus, in order to improve the economy of Savannah, the ACE is choosing to negatively impact the economy of Augusta! The only equitable solution is to combine a renovated lock and dam with a fish ladder. That would provide the necessary environmental mitigation while restoring the river access between Augusta and the ocean, thus restoring Augusta's riverfront economy to its previous condition! I'm</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure. Rehabilitating the New Savannah Bluff Lock and Dam is more costly than other alternatives, fails to allow endangered and threatened species to pass the location and it no longer serves the purpose of its construction – commercial navigation between Augusta and Savannah</p>

		<p>not sure why, but the ACE never included a win-win alternative - repair the lock and dam and install a parallel fish ladder. Thus, Augusta's chance for equity has been taken off the table without debate! A higher weir under alternative 2-6d might get make the riverfront homeowners happy, but it won't restore Augusta's access to the ocean, something that benefits ALL residents of the CSRA. The ACE should include the win-win option of both a lock and dam and a fish ladder</p>	
76.	William Martin	<p>These are my comments on the Savannah River Lock and Dam just below Augusta. The Corp of Engineers has been adding Dams to the Savannah River for years. These were to control Flooding and provide Hydroelectric Power. Why can't the Corp continue to do this with the SR Augusta Lock and Dam. Putting a Rock Weir and Fish bypass is a cop out. They will not control flooding and provide no electric power. We are focused on cutting back on fossil fuel use. The government is supporting wind, solar, and other non-fossil fuel energy replacements. Why can't the Corp use some of these funds to replace the LOCK & DAM with a hydroelectric dam with lock and fish bypass ladder. This option apparently was not considered. We are spending a huge amount of money to deepen the Savannah River for the coastal port. It looks like some of the funds could be spent to cover this win-win situation. Long term the hydroelectric power would help to pay for the new Lock and Dam. Lowering the water level at the Augusta/North Augusta area once it was established is unacceptable. You have a lot of people and civic officers who have made decisions based on the present level. Unless the government is going to plan on facing a bunch of lawsuits requesting compensation for their losses; the government need to reconsider their plans as presently stated. I would appreciate the Corp of Engineers working with our local,</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure. Rehabilitating the New Savannah Bluff Lock and Dam is more costly than other alternatives, fails to allow endangered and threatened species to pass the location and it no longer serves the purpose of its construction – commercial navigation between Augusta and Savannah</p>

		state, and federal officials to see if we can come up with this new approach.	
77.	Josh Willford	<p>My name is Josh. I'm a whitewater raft guide on the Chattooga River and an Environmental Science student at Greenville Technical College. I've been following the status of the Savannah Lock & Dam issue, attended a few meetings about it over the past year, and am very interested in how it all turns out.</p> <p>I support the proposal to replace the dam with a rock weir. Upon first hearing about all this, I felt that the Corps and/or the City should just remove the lock and dam entirely and let that section of river be restored. That would be, after all, the biggest bang for your buck from an ecological standpoint. But, witnessing the absurd and disproportionate outrage people displayed at losing just a few feet of surface water with the rock weir alternative, I think that they'd never allow progress to continue without some kind of compromise. They'd just keep dragging this out indefinitely. I'm also very aware of the tension that exists between some people and the Savannah Riverkeeper, who I feel are doing a great job. If we are to "keep the peace," a compromise is the key. That means a rock weir.</p> <p>The latest round of uproar came during the recent drawdown simulating the effects of their proposed rock weir. Personally, I did not see any problem with it. If the Corps' plan needs to be adjusted slightly, fine. But I understand that the weir has to be low enough to accommodate higher flows. If the weir were taller, more surface area could be flooded. Ultimately I don't think that the loss of a couple feet of surface elevation should make-or-break whether or not the rock weir gets built.</p> <p>I don't believe that the Corps or Savannah Riverkeeper should over-</p>	Thank you for your comments and your support of the draft recommended plan.

prioritize the enormous anxiety over property values that people seem to be stuck on. I think it would be beneficial if, during the next public meetings, your speakers can address that issue and explain that restored rivers, public parks, and green spaces often increase property values rather than decrease them. You may have some success with that argument.

Nonetheless, homes will still be bought and sold long after the rock weir gets built and long after people have forgotten what all the fuss was about.

For me, the make-or-break will be knowing that y'all have got a good design that will encourage the MOST fish to pass up and down that river. From what I've seen of McLaughlin Whitewater's portfolio, they're definitely capable of doing a great job. I believe a whitewater course would be great in Augusta too, but fish passage is priority, so please make that happen.

Something I am curious about regarding the Savannah Harbor project is that, while it is being artificially deepened to accommodate ships with more draft, sea levels are also rising, if only very slowly. Two things:

1. With rising sea levels, the riverine section between Augusta and the mouth of the Savannah is getting shorter, and the estuary will need to be allowed to establish itself further upstream to survive. Deepening the harbor will increase salinity upstream, but so will a higher sea level. What effect would this have on the riverine life between the mouth and the proposed rock weir? Will all fish be able to pass over it, or just Sturgeon and Shad? Obviously, the endangered and threatened species are the priority, but what about the other little guys who are just trying to stay in fresh water?

		<p>2. When high flows coincide with storm surge or other high tide events, things can get serious. How will this factor into a river with a rock weir in place versus an alternative with no structure at all?</p> <p>Obviously, those questions are hard to answer, so forgive me. But I would like to know the Corps' opinion on this.</p> <p>Thank you, good luck, and all forward.</p>	
78.	Jim Brown, Aiken, South Carolina	I oppose the proposed alternative of a rock weir to replace the lock and dam.	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure. Rehabilitating the New Savannah Bluff Lock and Dam is more costly than other alternatives, fails to allow endangered and threatened species to pass the location and it no longer serves the purpose of its construction – commercial navigation between Augusta and Savannah</p>
79.	Keith Kehr	Don't drop our river level....	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and</p>

			<p>water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>
80.	Charles Olson, Edgefield, South Carolina	<p>It is a blatantly obvious engineering disaster proposed by the Corps for replacement of the Augusta lock and dam. The draw down of the river is a disgrace to the Engineering profession.</p> <p>I'm a retire Mechanical Engineer, and the Corps of Engineers is embarrassing all engineers with such a lack of concern for the community. Why not make a longer fish run that maintains the existing pool? What makes the Corps think the fish can't go up a longer fish run? My impression of the Corps has changed immensely now that I realize such small foresight has infected the brains of this set of engineers. I guess it is worse than that, they can't even figure out how to make a longer fish run to maintain the current pool level. The Corps is absolutely disgusting. It is shame that so many people have to fight with the Corps to do the right thing.</p>	<p>USACE has utilized both (1) expertise through coordination with NOAA/NMFS fish passage design experts and (2) the 2016 joint publication by NOAA, USGS, and USFWS "Technical Memorandum Federal Interagency Nature-like Fishway Passage Design Guidelines for Atlantic Coast Diadromous Fishes" to design the fish passage structure at the New Savannah Bluff Lock and Dam. This design allows for a range of velocity and flow conditions across the structure and allows for the opportunity for successful passage of a range of fish species of ally body types, sizes and swimming capabilities. The specific design features regarding weir opening width, depth and maximum velocities as well as the minimum depth and length of the resting pools between the weirs will be developed during the full design. It is important to note that any of the alternatives being evaluated, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>
81.	Sam Meller, Augusta, Georgia	<p>The project will fail to mitigate the dredging project because there are no fish who can make the journey past the proposed Rock weir, regardless of the corps' efforts. This is a problem of bureaucracy and law, and not a proposal to the real problem. The mitigation should be localized to Savannah harbor. Furthermore the law is clear that recreational levels of water in the pool must be maintained.</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource</p>

		The proposal eliminates that usage and violates the law.	agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.
82.	Mike Whitten, Aiken, South Carolina	I strongly support the February 2019 USACE plan for the Savannah Fish Passage at New Savannah Bluff Lock and Dam. After examining the Integrated Post Authorization Analysis Report and Supplemental EA, it is my understanding that Alternative 2-6d (recommended by USACE) is an in-channel fish passage design with a fixed crest weir and a flood bench. From what I understand, the water level would be about 2 feet lower than the current average level. I have seen photos of the recent experimental drawdown to this level, and the lower water level does not appear to be so bad. I think that the public outcry against the plan is due largely to an innate opposition to change. I think the river will be plenty high enough and wide enough if the USACE plan goes forward, and the public will eventually grow accustomed to the new level. I might also add that I am a citizen of Aiken County SC who enjoys fishing and kayaking in that portion of the Savannah River. In summary, I believe that the recommended plan seems to provide a high probability of passing fish without delay while maintaining the functionality of the pool for water supply and recreation.	Thank you for your comments and your support of the draft recommended plan.
83.	Tim and Dale Adams, Augusta, Georgia	I dont think you were expecting the number of concerned citizens attending todays meeting. It seemed very unorganized and we did not have a voice. We feel you are shoving a plan down our throats that is sure to	Thank you for your comments. The reduction in value to properties located on federal water resource projects due to lower water levels is not compensable pursuant to case law interpreting just compensation principles.

		<p>fail as seen in the recent draw down. We were raped by the COE in 2000 and now it is happening again. I am a resident of Goodale Landing. The last draw down cost us over 10k in structural issues. With your proposed plan we will experience further damage. This time we wont sit idle. It is time you are held accountable for your mistakes, not innocent, tax paying citizens. There are better options. Dont be blind and ignorant. Yours is not the best nor the most economical. And since when did fish come before humans. Protect our beautiful river and dont turn it into a creek.</p>	
84.	Oliver Williamson, Jackson, South Carolina	<p>This must be rebuilt...The environment change that would take place would be unrepairable...this is a very fragile river system...no more changes to our environment of our river...</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure. Rehabilitating the New Savannah Bluff Lock and Dam is more costly than other alternatives, fails to allow endangered and threatened species to pass the location and it no longer serves the purpose of its construction – commercial navigation between Augusta and Savannah</p>
85.	Curt and Nicki Arant, North Augusta, South Carolina	<p>As a resident of one of the Savannah River neighborhoods which would be adversely affected by the draw down</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of</p>

		<p>of water levels in the area, please reconsider an alternative plan .</p> <p>The proposed plan would create a loss of property lines/values, expense to relocate our docks, increase traffic flow in our neighborhood as well as River traffic as we become the only accessible ramp area in local area. As a community , both on South Carolina and Georgia sides of river, The current proposal Would create loss of revenue due to the unsightly banks and narrower River just as both communities were enjoying the commerce of riverfront developments. Your consideration will be appreciated.</p>	<p>the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>
86.	Joel Harris, Jackson, South Carolina	<p>The NSBLD has severed the Savannah River and it area residents a great service over the past 80 years.The Dam has helped reduce flooding, maintained a pool for recreation, and provided a water supply for area residents. Removal of this dam would be a reckless detriment of this resource. I propose the USACE use the funding to replace the existing dam with a similar structure which can provide fish passage, flood control, maintain pool, provide recreational waters and drinking water resource. In addition the new dam should have electric generators to produce power which would pay for the project over the future years.The Simulation of Savannah River NSBL&D had several problems which concern me. The Current water level for NSBL&D averages gage reading 112 ft to 115 ft based on conversation with Corp Engineer Representative Jason ?? during the public meeting on March 6 2019. The proposed Alternative Weir would have elevation of 111 ft. This simulation does not match the water levels stated in the USACE Alternative Profiles. I measured and observed water levels during the simulation at Jefferson Davis Hwy USGS gage</p>	<p>Thank you for your comment. The WIIN Act legislation directed the Corps to consider two types of modification to the lock and dam structure: repair of the lock wall and modification to the structure for fish passage and, construction of a new fish passage structure with removal of the lock and dam. The alternatives evaluated and discussed in some detail in the draft report cover both of these approaches; dam removal and replacement is not option available under the WIIN Act. It is important to note that New Savannah Bluff Lock and Dam does not provide a flood control function either upstream or downstream of the structure, nor is flood control an authorized project purpose. Hydropower generation is not an authorized purpose of the lock and dam.</p> <p>USACE completed an after-action review of the February 2019 simulation. For information on the after-action review and additional information about the February 2019 simulation, please see the Engineering Appendix, Attachment 4.</p> <p>Detailed cost information for the recommended plan is available in Appendix B of the draft report.</p>

		<p>02196670. Based on personal observations and pictures included the water was dropped from a typical average 114-115 ft depth to 110 – 111 ft depth during this simulation observed on 2-12-19 and 2-14-19. Per previous Corp meeting the expected river decrease of 1 ft at Jefferson Davis Hwy USGS gage 02196670. The Water levels at my dock located at 714 Gum Swam Rd Jackson SC reflected similar extreme changes. Based on the USAC Alternative Profile Charts Alt-2-6D my dock location estimated changes at 5000 CFS from 12.5 ft to 9.3. These are incorrect when compared to actual measurements at my dock. Normal water depth at my dock is 14 feet to 15 feet, during the simulation my depth dropped over 4 feet. See attach measure from water level to normal water levels. Please provide a public record of actual USACE test results and surveys performed during this simulation. I would like for the final accepted plan to include a complete rebuild of this dam to include power generators. In meeting held with USACE during the 2000 drawdown it was estimated a complete rebuild would cost \$ 25 million dollars. I do not believe the current cost estimates provided and would request a cost breakdown for all Alternatives verified by independent firm.</p>	
87.	William Bowles	<p>The level of pool should not be an issue here. The only people I see complaining are the rich that live along the river. I didn't think the Corp of Engineers catered only to the rich. It's sad to think the spawning of the fish should be over ridden by a few rich people. Also let's consider the cost. If it's like everything else a new locks would surely cost a minum of three times the estimate. Past estimates vs final cost has been proven time and time again. The fish step program is a sound and cost effective way of getting this done. So MY VOTE goes to NO new Locks</p>	<p>Thank you for your comments and your understanding of our requirements to follow legislation and meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the Endangered Species Act.</p>

		Stop throwing away money for just a few.	
88.	Theron Waldrop	Repair the Lock and Dam. Our country has funds to spend in other countries so why not our community. While you are at it Build The Wall.	Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure. Rehabilitating the New Savannah Bluff Lock and Dam is more costly than other alternatives, fails to allow endangered and threatened species to pass the location and it no longer serves the purpose of its construction – commercial navigation between Augusta and Savannah
89.	Sam Corley, Appling, Georgia	Your plan would lead to a manmade disaster for the cities, states and the riverfront neighborhoods on both sides of the Savannah River. Please consider the negative impact already being inflicted by the COE with the low and inconsistent water levels currently maintained at Lake Thurmond. This is enough to show your disregard for personal property, muddy and dry shorelines, with docks and boats sitting on dry land the majority of the time. It would only lead to worse conditions for the lake and be devastating for those affected by your proven mismanagement both upsteam and down stream. You have already shattered your creditability in	Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get

		<p>the CSRA. The states of Georgia and South Carolina deserve better than what you have provided.</p>	<p>sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p> <p>The operation of the J. Strom Thurmond Reservoir is not within the scope of this analysis. The Savannah River Basin Comprehensive Study is examining the impacts of the regulation schedule.</p>
90.	Katie Davis	<p>The city of Augusta and the downtown area is growing, businesses are coming in, buildings are being redone. The river adds to the beauty of the city, people and companies want to see this beauty. Lowering the levels could destroy the development of the city.</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>
91.	Robert Nelson	<p>Part 1:I am opposed to the Corps Current plan for the building a fish ladder and demolishing the current structure. There are more cost effective measures. Part 2:In the presentation of the pertinent criteria, I saw no consideration of the economic impact on the Augusta and North Augusta communities. The availability of the river at average full pool is a great economic impact to the tourist, and the communities use and enjoyment. If the pool is allowed to decrease to the levels experienced in the simulation, what are the estimated</p>	<p>Thank you for your comments. The USACE Savannah District's must follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality, according to Implementation Guidance, of the upstream pool of the New Savannah Bluff Lock and Dam for the purpose of recreational navigation and water supply.</p>

		impacts to the communities revenues?	The tentatively selected plan provides the most cost effective means of meeting Congressional intent.
92.	Dr. and Mrs. Steven Rogers, North Augusta, South Carolina	<p>We have lived on the river in North Augusta for the past nine years. We are totally against this project and fully understand the politics involved. When you simulated what the water would be like if this project goes through we could walk across the river! Not only were our boats and jet skis docked but the wildlife we usually have hanging around completely scattered! Nowhere have we been able to find proof that this project will enable said fish to even pass through and in fact no one even knows if it will work . What you do know is there will be disruption of the lives of thousands of people living and using this section of the Savannah River . I'm not even going to mention the devaluation of our property and businesses along the river. It is our hope and prayer that you preserve the lock and dam and abolish this life changing project for REAL people !!!</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure. Rehabilitating the New Savannah Bluff Lock and Dam is more costly than other alternatives, fails to allow endangered and threatened species to pass the location and it no longer serves the purpose of its construction – commercial navigation between Augusta and Savannah</p>
93.	Lyndsey Maniccia	<p>Please do not take down the lock and dam and replace it with a rock weir. I've enjoyed visiting the lock and dam park. I saw the draw down experiment and did not like it at all. I like our large wide river that is great for water sports and brings economic activity to the area. I have enjoyed boating on the Savannah above the dam.</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get</p>

			<p>sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure. Rehabilitating the New Savannah Bluff Lock and Dam is more costly than other alternatives, fails to allow endangered and threatened species to pass the location and it no longer serves the purpose of its construction – commercial navigation between Augusta and Savannah</p>
94.	James W. Griffith	<p>Your proposal for the rock weir in Augusta is a mistake. Damage to bank. Diminished property values. Eye sore. Do the right thing</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>
95.	Hal Lynch	<p>With the results of the shortened demonstration one has to wonder why the corps is still backing a plan to eliminate the lock and dam. It has been reported that bank collapse was a concern. It seems that is going to happen if you stay with your current plan. The demonstration clearly showed you have a bad plan. I believe the corps should work to maintain and improve. The plan to remove the current structure does neither of these.</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock</p>

			and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.
96.	Jimmy LeBlanc, Augusta, Georgia	Several concerns about economic impacts the proposed recommend plan will have on the local economy. The 3 year contract with regards to the Iron man recreation event brings approximately \$3 million to the City of Augusta and the water levels that will result from the recommended Plan could have negative impacts to this event, causing the city to lose money. Concerns about the lower water levels will have on the CSRA The CSRA derive a great deal of substance from the Savannah River in addition to just drinking water and wants to make sure whatever lower water levels will not impact those needs. I believe that the USACE, state and federal government agencies along with local organizations need to form a coalition to figure out the best alternative that meets all of the requirement of the project but also look for ways to improve the shoreline of Augusta. The goal is to work together and look for ways to compromise to not only meet our mitigation requirement but help minimize the negative impacts to the shoreline.	<p>Thank you for your comments. The USACE Savannah District's must follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality, according to Implementation Guidance, of the upstream pool of the New Savannah Bluff Lock and Dam for the purpose of recreational navigation and water supply.</p> <p>The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with the best chance to get sturgeon past the lock and dam to additional spawning habitat.</p>
97.	Curtis Glass	To protect & maintain the wall for the length from the railroad trussel to the state docks. Place bouys on the wall and place a green light on the currant side of the river and a red light on the S.C. side on the bridge and trussels. The city needs to contact all boat owners or the corp to give the owners time to get boats down the river that has any inboards with props. The commisioners and the corp need to handle the river without the	Thank you for your comments and suggestions. The USACE Savannah District will mark the training wall so that recreational boaters can avoid the structure.

		<p>riverkeeper because half the time she doesn't know what she is saying. She just on the radio or TV running her mouth. As far as the project for the zip line Kayaks the need to be on the lookout for alligators. They were put in the Savannah River at Port Wentworth DNR did this this makes the river dangerous and someday it's going to get someone hurt and then who will be responsible the corp or the city.</p>	
98.	Chris Dupont	<p>Your day to show us what the river would be like if you installed your rockbed was absolutely hideous. My dock as well as my neighbors were up on mud. I think most recreational boating would be almost gone & the aesthetics of river life would be diminished. I cannot believe that for 20 years that I have lived on the river that now you must help some particular fish that has continued to survive all that time without your help. Surely there is a way other than your river wrecking solution. No one on either side of the river approves of your idea & as a matter of fact we totally oppose this in the strongest way.</p>	<p>Thank you for your comments. Recreation is discussed throughout the report and analysis is contained in the recreation appendix. Approximately 19 docks would be impacted by the project. Dock owners may submit an application to modify to extend their dock to the U.S. Army Corps Regulatory office.</p>
99.	Susan Rivers, Augusta, Georgia	<p>Like most CSRA residents, I reject all your options concerning the lock and dam. Each option lowers the Augusta pool and is unacceptable. Most like myself, support repairing the existing dam and adding a fish ladder. As someone who lives on the river and makes a living from downtown tourism, the Corp's cavalier response to the permanent dropping of the Augusta pool is beyond troubling. Your interpretation of the Winn act is suspect as well. We all know, the only sense of urgency here is to protect the SHEP and the resulting lawsuits. The Corp has sacrificed the Augusta pool to insure SHEP proceeds. We are all hoping that the City of Augusta, North Augusta, our elected officials and the Corp can agree on an option that does not lower the Augusta Pool. If</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under</p>

		that is repairing the existing dam, so be it.	existing conditions just by varying degrees as a result of the creation of the fish passage structure.
100.	Mark Wolcott	The language of the 2016 Water Infrastructure Improvements for the Nation Act states: "to maintain the pool for navigation, water supply, and recreational activities, as in existence on the date of enactment of this Act". While the Endangered Species Act apparently forces the Corps to examine other opportunities to reduce impacts to sturgeon caused by the Savannah Harbor Expansion Project (SHEP), which lies 180 miles downstream of the New Savannah Bluff Lock and Dam, the damage to another area is NOT justified. The Corps needs to reassess the priorities of which project takes precedent and which effort is the most likely to cause long term damage to an area. Since there is 180 miles between them, the Corps should find an alternative before destroying the Lock and Dam. Since the Lock and Dam were established in the 1930s and established the current river as we know it, alternatives to maintain its current state should take precedence over removal with lower river levels in the Augusta/North Augusta river front area.	Thank you for your comments. The USACE Savannah District PAAR follows the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.
101.	J. David Jameson Chair, The Savannah River Site Community Reuse Organization	The Savannah River Site Community Reuse Organization (SRSCRO) is governed by a 22-member Board of Directors composed of business, government and academic leaders from both Georgia and South Carolina. We are charged with developing and implementing a comprehensive strategy to diversify the economy of a five-county region of Georgia and South Carolina. This region includes Aiken, Allendale and Barnwell counties in South Carolina and Richmond and Columbia counties in Georgia. Initially, its mission was to develop and implement a regional economic development plan utilizing technology-based facilities at the Savannah River Site. Today,	Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional

		<p>SRSCRO remains focused on diversifying the region's economy by supporting new business ventures that create new jobs in our region. The SRSCRO Board of Directors recognizes that the Savannah River is a major artery for our region's economy and quality of life. Lowering the pool level is unacceptable. This was apparent by the recent simulation, which showed what the river pool level would be under the Corps' preferred alternative, Alternative 2-6d. This alternative calls for a fixed rock weir with a dry floodplain bench on the Georgia side of the river. The simulation ended early after it had reached the target level due to river bank instability on the Georgia side of the river. We support Alternative 1-1, which calls for the repair of the Lock and Dam gates and piers and riverside lock wall, and the construction of a fish ramp structure through the lock chamber onto the Georgia side of the river. We endorse maintaining the pool at an elevation of 114.5 feet. Furthermore, we ask the U.S. Army Corps of Engineers, Savannah District, to reconsider its preferred alternative and incorporate the needed repairs of the existing Lock and Dam gates and piers; in addition, to the construction of the necessary fish ramp structure. Thank you for allowing our voice to be considered.</p>	<p>spawning habitat. Alternative 2-6d provides the best probability of getting fish species above the New Savannah Bluff Lock and Dam. The partial width fish passage structure of Alternative 1-1 will likely lead to delay of immigrating diadromous fish, in particular shortnose and Atlantic sturgeon because the entrance to the fish passage structure is approximately 450 feet downstream from the existing gate system of the dam. Therefore, during high flow conditions, false attraction to the operating gates will lead immigrating fish to the dam and not the fish passage structure thereby causing a migratory delay. The length of the delay was not determined and would require additional study and modeling effort. A short delay would not impact spawning, but a long delay could cause the individual to not reach the spawning area during the prime spawning window. While the fish passage structure design of Alternative 1-1 will function as a way for fish to transverse up and down the river, it is not as effective as other designs being evaluated.</p>
102.	Charles Hardigree, Martinez, Georgia	<p>I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water 4 nuclear reactors. I am in support of keeping the lock and dam. It is essential to the City of Augusta that the pool upstream from the Savannah Bluff Lock and Dam be maintained at the average current levels and the</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and</p>

		Lock and Dam be repaired and kept as part of the Savannah River infrastructure.	comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.
103.	Lenny Brit Friends of the Rapids North Augusta, SC	How will the proposed rock wier project affect the water level in the Savannah River shoals? Will the water level drop or raise if the Lock and Dam is replaced with the rock weir?	Thank you for your comment. Changes to water levels for the various alternatives are listed in Table 8 of Appendix A to the main report. The most upstream location listed in the table is the water intake for North Augusta, which would see a drop of 1.7' under normal flow conditions for the recommended plan. The shoals about a mile upstream from this location would see less of a change in water surface, with impacts becoming less pronounced as you move upstream. The steep portions of the shoals with rock outcroppings would see very little differences in water surface elevations.
104.	Amy Mealing Evans, GA	How will the water quality and quantity for the water intake for the City of Augusta be affected? During times of drought, how will this water be affected? Will the Clarks Hill/Lake Thurmond water level be affected by these changes? This plan seems unfair to the riverfront landowners with docks along the river. What considerations have been made for loss of use and depreciation of land values for these homeowners?	Thank you for your comment. Water quality impacts are discussed in section 3.6.8 of the main report, and water supply is discussed in section 3.6.13. Any water quality impacts are expected to be temporary and minor in nature. An analysis of water intake users found that there are no adverse impacts under the recommended plan; though modifications to the City of Augusta intake's vacuum pumping system are prescribed to account for lower water levels. A prediction of real estate values as a result of this project are not known. An appraisal can be provided if requested by letter to the Savannah District U.S. Army Corps of Engineers.
105.	Lenny Birt Friends of the Rapids North Augusta, SC	How will the removal of the Lock and Dam and installation of the rock weir affect the populations of native fish currently in the Savannah River near Augusta as of 2019?	We anticipate the installation of the rock weir will have a beneficial effect for native fish populations. The rock weir will help reconnect populations of fishes separated by the lock and dam.
106.	Jim Buckalaw North Augusta, SC	Has a fish survey been performed above the Lock and Dam to identify any endangered fish already in the Augusta Pool? Has a fish survey been performed below the Lock and Dam to verify any	Bullet 1: No surveys targeting sturgeon have been conducted in the Augusta Pool in the last decade. Fish surveys are labor and resource intensive. Given the known barrier to passage and lack of known observations of sturgeon above NSBLD, resources have not been

endangered fish are even in the area during spawning season?
 Will composite surveys be conducted below and above the structure upon completion to verify the weir passage even works?
 Can weir be constructed to maintain our normal pool? Recreation use would significantly be reduced if example draw down is even close to reality.
 Where are the endangered fish currently spawning?
 If draw down is an accurate reflection of depth upon completion, what plans does the Corps have for dredging and "wall" removal at the Augusta Pool?
 Do the public comments carry any real influence or is it just a legal exercise of appeasement, and only Congressional Players have the real say?

allocated to solely searching for species not expected to be there.

Georgian Department of Natural Resources has conducts surveys for non-sturgeon species in the Augusta Pool and has never observed a sturgeon.

Bullet 2: Yes, endangered sturgeon have been detected below the Lock and Dam during the spawning season. Vine et al. (2019) is the most recently published paper reporting both shortnose and Atlantic sturgeon exhibiting likely spawning behavior below the Lock and Dam.

Bullet 3: Yes, monitoring will be conducted following the completion of the fish passage structure to ensure it is working as designed. The Biological Opinion includes a specific requirement that fish passage efficacy be monitored, and corrective measures be taken, if sturgeon are not safely and effectively passing upstream and downstream through the fish passage.

Bullet 4: the rock weir could be built to maintain the Augusta pool at the 114 foot elevation however it would cause induced nuisance flooding and additional real-estate easement would be needed as a result. The time it would take to acquire those additional real-estate easements would prohibit us from starting construction of the fish passage structure by January 2021 and therefore would cause us not to meet the requirements of our Biological Opinion from NOAA. Inundation maps for Alternative 2-6a are presented in Attachment 2 to the Engineering Appendix, and provide an example of the extent and magnitude of induced flooding for the 2-year return interval flow (around 33,000cfs). Inundation for alternatives that would maintain a higher normal pool near elevation 114 would impact even more parcels than those presented in Attachment 2.

Bullet 5: Data collected from fish implanted with acoustic tags suggest spawning is occurring in two locations between the NSBLD and approximately Sylvania, GA.

Bullet 6: during the public comment period, this is where citizens can work with their local government officials to request to the USACE Savannah District that a different alternative to be evaluated or request that a specific alternative be implanted. These local government

			representatives would need to work with our non-federal sponsors for the Savannah Harbor Expansion Project to execute those changes.
107.	Ron Spencer Augusta, GA	<p>When Savannah River was lowered, what data was taken to evaluate pollution control impacts – both short and long term? Radioactive/Heavy Metals/Oxygen Levels/etc. At lowered river levels, increased silt and debris was observed on banks. How does each option effect this long term?</p> <p>Does ESA compliance include river sampling needed to evaluate environmental impacts based on regulating guidelines? For all options?</p>	<p>During the simulation event, there was not any data collected to evaluate pollution control impacts both short and long term.</p> <p>During the simulation event, there was not any data collected to evaluate pollution control impacts both short and long term. No impacts to water quality are anticipated for the recommended plan.</p> <p>All alternatives considered would result in more frequent and larger variation in pool levels, resulting in exposed banks and silt bars. Pool levels under the recommended plan would be a function only of flow in the river, as opposed to today where the pool can be raised or lowered by operating gates at the lock and dam. Long term, there will likely be vegetation that establishes on the more frequently exposed banks and bars.</p> <p>The USACE Savannah District will be working with state and federal agencies to ensure that whichever plan is recommended will be in compliance with state and federal regulations.</p> <p>The USACE Savannah District will be working with state and federal agencies to ensure that whichever plan is recommended will be in compliance with state and federal regulations.</p>
108.	Carole Perkowski, Augusta, GA	<p>WHATEVER YOU DO, <u>DO NOT LOWER</u> THE RIVER LEVEL BY 2FT OR EVEN ONE FOOT.</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and</p>

			comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.
109.	B.L. Hayman MD N.Augusta, SC	<p>I reside on the SC bank of the Savannah River, River North. When the river was lowered to demonstrate levels expected of the river with the Corp's proposed fish passage and weir, my private boat dock permitted by the Corps, and my bay boat sat on dry land for a prolonged period of 24 hours or greater. Use of my boat and dock under these conditions will be/was impossible. In addition, my bay boat hull was damaged and the transducer was completely severed.</p> <p>I do not accept the statement that the "pool of water has been preserved" as dictated by law in the (per date passed) interest of community use of the pool for our navigation / recreation. Fish passage is an additional requirement. I strongly demand the repair and preservation of the Lock and Dam. I object to the Corps' interpretation of the law. A weir cannot respond to the variable river water depths which occur. A functional lock and dam can respond to these variations.</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>
110.	Paul Brewer N. Augusta, SC	<p>Rather that "what if" on the pool level upon passage of the act, what was the pool level on the date of passage?</p> <p>Why do you consider ignoring the pool level aspect of the act legal? Option that should be adopted in order to maintain pool.</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and</p>

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111.	Tanya D Jeffords and Bill Jeffords River North Homeowner	Dear Corporal Hibener and General Holland, I am including a binder with pictures of the homes and boat docks in River North in North Augusta, South Carolina. As you can see from the pictures, there will be a significant decrease in the activities on the river that our residents engage in daily. We bought our homes and planned for retirement based upon our ability to access and use the river for activities. With plan 2-6-0 we will not be able to engage in these activities. Further, we also watch the Augusta, the Iron Man, the boat races and concerts from our homes. These are activities that have been conducted on this before the act was passed in 2016 and after. We want to know what plan the ACOE has that will maintain the level of the river and allow for fish passage. Thank you for your attention on this matter.	Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Alternative 2-6d provides the best probability of getting fish species above the New Savannah Bluff Lock and Dam while maintaining the water level high enough without inducing nuisance flooding.
112.	Bill Fogerty	Why can't sturgeon be stocked (dumped into river at shoals) like other fish? Should be easy to study and compare.	Stocking fish would not solve the issue of the New Savannah Bluff Lock and Dam creating a barrier for sturgeon as well as other fish species traveling within the Savannah River. Migratory fish (like sturgeon) need to move between habitats to be successful. Different life stages (larva, juveniles, and adults) require different habitats in order to grow and reproduce. For sturgeon to successfully complete their life cycle, they need access not only to the shoals, but also the entire river. The adults need the full river to complete their spawning migrations, while the young need the river for growth and development
113.	General Public	Built in 1906 – with not much care since, I feel the dam needs repairing very badly. It's in poor condition.	Thank you for your comments. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon

		<p>The fish do need a passage and need to be protected. It would also be a great idea to have the white water for profit and recreation for families in Augusta. If only 19-20 fish have been tagged how many have not made it through?</p>	<p>above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. If local residents would like to see a white water rafting park, they would need to submit that request the USACE Savannah District for evaluation to ensure that that park would not negatively impact the project as designed or interfere with our requirement to comply with the endangered species act.</p>
114.	General Public	<p>Leave the Lock and Dam in place, put gravel and rock below the Lock and Dam so the fish will have a place to spawn.</p> <p>Lowering the river will cause the river bank to erode. When heavy rain's (come and they will) start we will have massive flooding. No river banks.</p> <p>Why do we care about the short nose sturgeon? There are over 22,000 species of fish in the oceans.</p> <p>Its been ok for 80 years, leave it alone.</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure. Rehabilitating the New Savannah Bluff Lock and Dam is more costly than other alternatives, fails to allow endangered and threatened species to pass the location and it no longer serves the purpose of its construction – commercial navigation between Augusta and Savannah</p>
115.	Porter Vaughan North Augusta, SC	<p>In light of the negative effects of the trial drawdown and that subsequent harm possibly caused to property owners and both the waterfronts of North Augusta and Augusta affected the removal of NSRBL&D very detrimental to our region. I feel the fish passage on the Georgia side</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for</p>

		<p>addition with possibly even viewing capabilities and passage counting devices would be awesome! Repair the lock, allow access to the public, maintain flood control downstream, and maintain a premium pool level for our city. This is the best asset our region has. It is an incredible fishery resource, recreational destination and water source for many many of our citizens. Increase the access! Improve the resource, don't remove the dam.</p>	<p>the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure. Rehabilitating the New Savannah Bluff Lock and Dam is more costly than other alternatives, fails to allow endangered and threatened species to pass the location and it no longer serves the purpose of its construction – commercial navigation between Augusta and Savannah</p>
116.	Robin Elliot Augusta	<p>If you want people to be anything but angry – give them the conduit to get what they want or at least to support what they want.</p> <p>The "locally preferred plan" could be presented by your project sponsor the GA Port Authority or the GA DOT. Those people should be available to contact and meet by the public as well. The funding is available – we need to find a way.</p>	<p>Thank you for your comments. The information with regards to the locally preferred plan is something that we could provide you more information about.</p>
117.	General Public	<p>Tearing down rock wall won't work. Augusta and N Augusta lose the "middle pool" – N Augusta will suffer at water intake. Property values will drop. Sport events will leave, mudflats = more moisture. No recorded short nose caught here over 60's. Other places with fish ladder for short nose – they don't use it. 140+ river miles from Savannah – how about creating a rock rapids for mating further down river?</p> <p>Where is \$'s promised years ago?</p> <p>Augusta is growing – your plan will slow it down or stop it.</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get</p>

			<p>sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>
118.	W. Honey Smith	<p>My concerns are-</p> <p>Sustaining the pool at Augusta at near present levels.</p> <p>Bank erosion caused by lowering river pool with instability at the banks.</p> <p>Debris removal from river to a depth of 6 ft below current level</p> <p>Stability of weir top 1,000 year flood.</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>
119.	Maranda Brown Evans GA	<p>Maintaining a water level that preserves the natural beauty of the river is vital to the health of the community and growth. As a young person, the beautiful river is a source of pride for the Augusta community and I believe that maintaining it is critical for preserving the current community as well as attracting new individuals and businesses. Lowering the river to such a drastic level rob people of an element that makes this place home.</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being</p>

			evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.
120.	General Public	<p>On face value, the alternative presented that involves the fixed weir and gate provides what seems a sound prospect. What was not clear was how this proposal will affect pool levels.</p> <p>What other funding sources are feasible options to pursue to relieve cost burdens? It is understandable that maintaining the weir/dam is beyond the scope and budget of the Army Corps of Engineers. What can you advise to the community as a means to preserve this vital asset? It is important on so many fronts – historical, educational, economic, and for the general health of the public. Outdoor recreation has been proven to improve community health and to reduce co-morbid conditions such as depression and obesity.</p>	<p>Thank you for your comment. Pool levels for the recommended plan are discussed in section 3.6.2 of the draft report. Additional information can be found in Section 2.3.15 and Table 8 of Appendix A.</p> <p>The Fish Passage project is funded on a cost-share basis, as prescribed in WRDA 2016; see section 4.3 of the draft report. GDOT and GPA are the non-federal sponsors for this project. Operation and Maintenance of the weir or dam is described in section 4.3 cost sharing.</p> <p>Please reference section 1,1 study history to better understand the measures taken in the past by both the locals and the Corps to maintain the NSBLD.</p>
121.	Mei Zheng	<p>The simulation makes us, all the CSRA realized how much Savannah River means to us all, the river with enough water level brings us beauty, livelihood and busted our economy! With the low/dry level (3 feet lower) the city will be devastated and no longer a wonderful place to live. Sure we would like to save the fish, but we could plan an alternative way. Repair the dam and let the fish survive. We don't like the plan proposed. It will destroy Augusta and CRSA!!! Please work together and save our river water level. Our community and Augusta! Augusta national golf tournament also needs a beautiful river water level!!!</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure. Rehabilitating the New Savannah Bluff Lock and Dam is more costly than other</p>

			alternatives, fails to allow endangered and threatened species to pass the location and it no longer serves the purpose of its construction – commercial navigation between Augusta and Savannah
122.	James Le Blake Augusta, GA	<p>Lower the pool below the level of 14feet, will economically, socially, sports wise, and scenic beauty out of this community!</p> <p>Please maintain the river pool as it was when passing 14 feet, please save our community! Let's work together, save our river and our community and Augusta and CSRA!!!</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>
123.	David and Linda Hughes North Augusta, SC	<p>We have lived on the Savannah River for 17 yrs. During the recent draw down of the river, we had no water at all. We have a dock that was sitting on the ground. What good does it do to live on the river with no water? It will destroy our property value.</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under</p>

			existing conditions just by varying degrees as a result of the creation of the fish passage structure.
124.	Martin Elliott Augusta, GA	Considering the grave impact that lowering the river levels can have on the economic development of the region vs the major opportunities that are available if we can maximize our natural resources. What efforts have been made to explore PPV? A public private venture could enable the Corps to fulfill its goals and requirements and provide incentives for a collaboration of developers to provide the funds so that the best of all worlds could be achieved. The entire economic "ecosystem" of our region is in the balance and we can do better. We can protect our fish and provide for our people too.	<p>Thank you for your comments. The USACE Savannah District's must follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality, according to Implementation Guidance, of the upstream pool of the New Savannah Bluff Lock and Dam for the purpose of recreational navigation and water supply.</p> <p>The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with the best chance to get sturgeon past the lock and dam to additional spawning habitat.</p>
125.		Was creation of an acceptable spawning area below the Lock and Dam considered and evaluated? If reasonable that seems like an affordable option that satisfies all the legal requirements and makes option 1.1 preferred as it takes away the need for a new fish ladder/passage.	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>

126.	Pat Lynch-Hayes Augusta, GA	Any well-considered decision should weigh both pros and cons. The Corps has described the pros which led to its choice of options but it seems to me that they should also consider the cons, or the consequences. The major consequences I see is the very negative effect of lowering the pool, which is a feature of the recommended option. The river is the life blood of the community. The negative impact on many aspects of this community should mandate the Corps choose another option that does not result in lowering the pool.	Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.
127.	Marty Elliott Augusta, GA	I had to be out of town the days when you did the simulation. Are there pictures that you can provide? I live on the river and heard only awful things – but I would like everyone to be able to see for themselves.	Yes. We posted images that can be found in the on our Flickr Photo sharing page in the following album: http://ow.ly/8SKL30oydMn
128.	Marty Elliott Augusta, GA	When working to educate the public it would be helpful if you had a booth that showed pictures/slide shows of successful projects in other communities. It's hard to understand from what we are seeing. I'd like information about aspirational projects that have worked well as well as others who have not, but have been learned from. Must be submitted by April 15	Thank you for the suggestion. We will consider this approach going forward. The closest comparable fish passage project was constructed on the Cape Fear river. It is important to keep in mind however that the Cape Fear fish passage is a different design, and lessons learned from that fish passage are being incorporated into the Savannah River fish passage. The U.S. Fish and Wildlife Service has a page on the Cape Fear Fish Passage here: https://www.fws.gov/raleigh/fishladderLD1.html
129.	Joseph Amari North Augusta, SC	How have the health concerns about a low pool with respect to muddy conditions, with respect to bugs, other pests been addressed?	Water in the pool will not become stagnant because of the continued riverine flow. Therefore there should be no change in insects or pests from a slightly lowered pool level.

		What are the health concerns with respect to local population (next to river) and more distant population?	
130.	Dawn and John Steiner North Augusta, SC	<p>Ms. Robin Armetta: 3/11/19</p> <p>In 2006, my wife and I looked at purchasing property in a new proposed development known as Hammonds Ferry in North Augusta, South Carolina. We were sold on the river location, the urban development style and North Augusta's vision of being a riverfront community. Over the past 13 years those visions have become real, as Hammond's Ferry has become a vibrant crown jewel of over 100 families and the North Augusta Riverside Village with an investment of over \$200 million has been mostly completed with the SRP Ballpark, Crowne Plaza Hotel, restaurants and higher-end apartments and condos. All is good for North Augusta and heading in a very positive economic direction. The combination of North Augusta's vision coming to fruition combined with the Augusta, Georgia Cyber Center, the CSRA future looks very bright!</p> <p>Or at least we thought so, until a few weeks ago when the Corp of Engineers decided to run a one-week drawdown of the Savannah River to demonstrate the effect of a lower Savannah River pool in Augusta when they implement their Lock & Dam Rock Weir proposal. The effect, from a homeowner standpoint was catastrophic. Instead of living on beautiful river with a variety of recreational opportunities, the Savannah River's edges became a muddy swamp, boat docks were grounded, logs and garbage were</p>	Thank you for your comments. The diminution in value to properties located on federal water resource projects due to lower water levels is not compensable pursuant to case law interpreting just compensation principles.

		<p>exposed. The result, a visual and economic eye sore.</p> <p>It's incomprehensible that The Corp of Engineers would even consider the 'Rock Weir' project with the negative impact demonstrated. You have your job to do and we appreciate that, but PLEASE look for an alternative approach that would maintain our current 'pool' conditions. Otherwise, your well-designed project to support the upstream migration of fish to their native spawning grounds will lead to the unintended consequence of destroying the growing and vibrant cities of North Augusta, South Carolina and Augusta, Georgia on the Savannah River.</p> <p>Respectfully,</p>	
131.	Larry W Sprowls	<p>You need to think about the need for a much needed river water level and a fish passage if needed instead of a fish passage with no flood control, I sometime wonder where all of this high priced education that you have working for you and what happened to their brain cells. Try using some good old common sense, you have been screwing around with this project for years, lock and dam should have been repaired many years ago. Thank you. Larry W Sprowls</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>

132.	Jerry Chadwick	<p>I don't think that lowering the Savannah lock would be a good idea. I hope that you keep it at it's current level as to keep the water levels where it is.</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>
133.	<p>Jorge E Jimenez Augusta GA</p>	<p>March 14, 2019</p> <p>This is in response to your request for comments and to present certain questions based on the presentation on March 6, 2019 workshop in Augusta, GA</p> <p>In the presentation it was reported by the speakers that the COE is obliged to choose the alternative with the highest probability of meeting the goal of "passing the Sturgeon species above the NSBL&D area of the Savannah River". I have been working on issues related to the passage of shortnose sturgeon (SNS) in the Savannah River since 1978. As a former engineer for the City of Augusta, GA, I led its effort to secure a License from the FERC to operate the Augusta Power Project. In my duties as the Project Liaison with NMFS, USF&WS, GADNR, SCDNR, and the Public, we secured the assistance of</p>	<p>A full river-width Nature-Like Fishway (e.g., rock ramp) is the most effective passage method for a variety of species under a variety of flow conditions because it makes entrance location irrelevant, minimizes attraction delay, and maximizes attraction efficiency (Bunt et al. 2012). While the fish lift at the Holyoke Dam has been successful in passing some sturgeon, we have no way of knowing how many attempted to pass, but did not. Thus, it is unclear what the overall passage probability or success is of the fish lift at the Holyoke Dam. Additionally, the current success of the fish lift at Holyoke Dam only occurred following a significant redesign of the lift and its approach. In the years prior to the redesign (1975-2015), the fish lift had never passed more than 16 sturgeon in a given year; many years it passed no sturgeon. The previous lack of success suggests there is nothing inherently better about fish lifts for passing sturgeon.</p> <p>Fish lifts are also mechanical. This means they require staff to operate and are susceptible to periods of inoperability for repair and maintenance. If periods of inoperability occur during fish migration windows (as has been observed at other fish lift facilities) the overall</p>

Alden Laboratories of Massachusetts, to evaluate fish passage options. They recommended a Fish Lift for SNS. We had Entrix, Inc. perform the Savannah River Instream Incremental Flow Methodology study of the Augusta shoals from the Augusta Diversion Dam to the NSBL&D pool. This work was headed by Mr. Paul Leonard and Mr. Doug Mooneyhan. It was fully coordinated, reviewed, and accepted by all the fish agencies involved and shows that the Augusta shoals will support and promote increased numbers of SNS if passed above the NSBL&D.

It seems that a solution with the highest probability of meeting the goal would **necessarily** be a solution that has a **history of success** with the specific goal. For example, Guiding the SNS and Atlantic sturgeon (AS) past barriers in rivers. In the Connecticut River, a Fish Lift has a proven record of passing sturgeon above the barrier there. Recent reports of the number of SNS passed exceed 70 individual specimens last year. That proven history gives a passage probability of near 100%.

A similar process can be installed at the NSBL&D by repairing the deficiencies in the 1939 dam structure and adding a Fish Lift in the existing Lock system. However, a system to GUIDE the selected species to the Lock is needed. Otherwise the existing mixture of flows downstream of the existing dam would confuse the SNS's sense of direction and lead them to the underwater releases through the five original 60x9 ft openings in the dam. This would lead to failure due to the SNS's unwillingness or inability to travel

efficacy of fish passage can be significantly reduced or negated entirely. Similarly, because fish lifts are mechanical nature, the equipment can pose a direct threat to the animals themselves. For example, in 2017, two shortnose sturgeon suffered lethal injuries while inside the fish lift at the Holyoke Dam. There have been no reported fatalities of sturgeon caused by a rock ramp.

Please refer to the answer to Comment 41 for discussion of the differences between the existing rock ramp at Lock and Dam #1 on the Cape Fear River and the rock ramp proposed at NSBLD.

The lock at NSBLD is non-operable and no longer can be used to pass migratory fish. Additionally, using navigational locks as fish passage has not proven to be a consistent or effective way for sturgeon to pass in-stream barriers (e.g. Cooke et al. 2002; Parsley et al. 2007). Sturgeon are physically able to use navigational locks for passage. However, the operation and design of navigational locks tends to make them insufficient to pass sturgeon consistently. For example, lock filling and draining can create confusing flow conditions, discouraging lock entry/exit. This can be especially relevant if a sill extending upward from the lock or river bottom exists. Sills can block portions of the water column, affecting how flows entering or exiting a lock are sensed by animals residing lower in the water column. Similarly, once a lock's doors are closed, flow ceases, which can create cue confusion for animals adapted to respond to flow orientation and velocity.

through waters at flow velocities above 3ft/sec. An underwater shield (e.g. 8 ft vertical wall) in the water column may keep them following the flow to the Lock entrance.

After 80 years of use there has been a fifty-foot-deep hole created downstream of the dam that equally threatens passage upstream to bottom dwellers like the sturgeon species. It has undermined the pile foundation supporting the Lock Wall. Therefore, the undermining must be filled with concrete to stabilize the wall. The 50 ft deep hole must be filled with rock.

The existing NSBL&D structure system is the ONLY practical way to meet the REQUIREMENT and INTENT of the WIIN (2016). The interpretation that the COE has made of the condition of the Congressional action related to the maintenance of the pool is shortsighted and punitive to the community. At worse, the intent of Congress was to maintain the Flow Duration Historic Function (thus the elevation) that existed on the date of passage. The COE should know better than to present such a biased interpretation on this high-profile issue. Surely, your leadership knows the proposed solution does not meet the intent of Congress.

The COE's chosen alternative has been proven inadequate at the Cape Fear River Dam No. 1 rock dam, as it is unable to pass even striped bass, a much better swimmer than sturgeon. Probability is a mathematical computation. It must be based on true and valid assumptions to have validity. I must request a review of the mathematical computations

		<p>leading to the Corp's conclusion that its chosen alternative has the highest probability of meeting the goal of "passing the Sturgeon species above the NSBL&D area of the Savannah River" be provided as a response to this comment. By necessity the calculations for any other alternative considered must also be provided to the public.</p> <p>Furthermore, another way to pass sturgeon, according to Fritz Rohde of NMFS, is to pass them through a Lock, similar to how they pass through the Pinopolis Lock in South Carolina. This option not only meets the goal, but it also re-establishes navigability to the Savannah River from Augusta to Savannah.</p> <p>Our discussion is limited to the goal of passing endangered species above the NSBL&D, other anadromous fish can use the system establish for endangered species for passage. In the case of the NSBL&D the other species are inconsequential and do not carry the weight of law.</p>	
134.	Andrea Kolczynski North Augusta, SC	<p>Hello, I am a resident of North Augusta, SC, and live one mile away from the Savannah River which serves a a state boundary between SC and GA. I oppose the current proposal for the rock weir on the river because it apparently has unintended consequences. The experiment/demonstration of the new river and canal level in our area needed to end early because of worries that some banks on the GA side of the river would be damaged. It does not make sense to solve one problem by creating another that will need to fixed (costing more money). Your solution should not bring on added issues.</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower</p>

		Thank you for the opportunity to comment	the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.
135.	Jane Page Thompson Realtor & Land Consultant Carolina Real Estate Company Aiken, SC	<p>Dear Sirs,</p> <p>Reducing the pool on the River will cause a devastating economic and environmental impact on an area in South Carolina that has already been negatively impacted by other Federal decisions.</p> <p>Taxpayers in our state have paid taxes for Yucca Mountain (over \$1.1 Billion) and it never opened, forcing our area to hold on to harmful waste. Other Tax and Default plans from Government are the abandoned VC Summer Project (Which Dominion Energy Promised rebates to Residential rate payers but the Government changed that to give Manufacturing the reduced rate and the defunded MOX facility has left workers in the area out of jobs.</p> <p>In some cases recreational tourism along the River is the only income supporting families, to reduce the water level will leave these folks destitute. The Residential property value decline along the river will be a Death-knell to this already struggling area which has borrowed and bonded against those values.</p> <p>Please act according to the recommendations of US Rep. Rick Allen (GA) and SC Sen. Tom Young (SC); these gentlemen have the local interests at heart beyond the Corps. Engineering concerns.</p> <p>Thank you!</p>	<p>Thank you for your comments. The USACE Savannah District's must follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality, according to Implementation Guidance, of the upstream pool of the New Savannah Bluff Lock and Dam for the purpose of recreational navigation and water supply.</p>
136.	Jane Page Thompson	<p>Dear Sirs,</p> <p>The Central Savannah River Area has been in an economic decline due to the failing MOX project and lay-offs at SRS, the uncertainty over SCE&G</p>	<p>Thank you for your comments. The USACE Savannah District's must follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while</p>

		<p>and the shift of business away from South Carolina to Fort Gordon, GA.</p> <p>Lowering the water level on the Savannah River will devalue our tax basis and harm the Real Estate Business locally and it will ruin ecosystems and nesting grounds down river disrupting the sporting Agrotourism which for many areas on our side of the River is the only economic driver.</p> <p>Please save South Carolina from the mud flats that the reduced pool level would cause. For almost 90 years the lock and dam have keep the pool level high, to disrupt that now will have devastating consequences for our economy and quality of life.</p> <p>Thank you!</p>	<p>preserving the functionality, according to Implementation Guidance, of the upstream pool of the New Savannah Bluff Lock and Dam for the purpose of recreational navigation and water supply.</p> <p>The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with the best chance to get sturgeon past the lock and dam to additional spawning habitat.</p>
137.	Leonilda and Michael Burke Windsor, SC	<p>My husband and I both feel that the existing lock and dam should be repaired and a fish passage should be added. We are very upset that the current infrastructure was allowed to deteriorate to its present condition. If you fix the lock it could be manned on a once-a-month basis to allow boats to pass through. The Army Corps of Engineers proposed lowering of water level in the river is totally unacceptable as it relates to personal property and business development in South Carolina and Georgia. This is an area of new growth and revitalization. Lowering the water level will dramatically and negatively impact the cities of Augusta and North Augusta. Thank you for your careful consideration of all aspects related to this matter Sincerely, Leonilda and Michael Burke</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure. Rehabilitating the New Savannah Bluff Lock and Dam is more costly than other alternatives, fails to allow endangered and threatened species to pass the location and it no longer serves the purpose of its construction</p>

			– commercial navigation between Augusta and Savannah
138.	Aruther L Smith Warrenville, SC	<p>I'm writing to inform you that I oppose the current Corp Of Engineers Rock Weir proposal. It will almost certainly result in economic damage to the city, the area in general and many individual property owners. It seems irresponsible to follow through with this proposal. Thank you for consideration of my comments,</p> <p>Sincerely,</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure. Rehabilitating the New Savannah Bluff Lock and Dam is more costly than other alternatives, fails to allow endangered and threatened species to pass the location and it no longer serves the purpose of its construction – commercial navigation between Augusta and Savannah</p>
139.	Ryan Tripp	<p>Please don't move forward with this rock weir. It provides zero control of flow of the river which is critical in managing the water elevation in times of drought and severe rain. I'm astounded this is the recommendation and that it's gotten this far. I'm all for providing a passageway for the fish and fully support that, but why not do a fish lift like they have in St. Stephens SC - from the Santee River into the Lake Moultrie reservoir. I'm sure it's more expensive than the rock weir but this river is invaluable and maybe just save up the funds for a few years until the</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get</p>

		<p>funds are available rather than wasting resources on building something we'll all regret.</p>	<p>sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure. Rehabilitating the New Savannah Bluff Lock and Dam is more costly than other alternatives, fails to allow endangered and threatened species to pass the location and it no longer serves the purpose of its construction – commercial navigation between Augusta and Savannah</p>
140.	<p>Dave Sam North Augusta, SC</p>	<p>Good Morning –</p> <p>I'm in favor of REPAIRING this integral part of the pool maintenance effort for our river. Replacing it with a rock weir is unacceptable to me.</p> <p>The recent simulation of drawing down the river was alarming, as it reflects a pool level that is aesthetically unappealing and practically useless for navigation & recreation.</p> <p>My opinion is.....if deepening the channel in Savannah is a boon to the economy (which I agree with), then the industry benefiting from the project should pay for the repair to the New Savannah Bluff Lock & Dam. (via fees & assessments)</p> <p>My question for the U.S. Army Corps of Engineering: if you proceed with constructing the rock weir.....and subsequently, it is determined that the pool level is unacceptably low..... what contingency fund is available to provide a remedy?</p> <p>Kindest Regards,</p>	<p>For more information on the simulation event from February 2019, please see the engineering appendix, attachment 4.</p> <p>There is funding for adaptive management if the fish passage is not working as expected.</p>
141.	<p>Patrick T Green, P.E.</p>	<p>To whom it may concern:</p> <p>Savannah River Flow Energy and its Place in the Cyber Warfare Support Infrastructure</p>	<p>Thank you for your comment. The recommended plan will have no impact to flows at the Augusta Canal. The lock and dam was deauthorized for their only congressionally authorized purpose of commercial navigation in 2016. Hydropower generation is not an authorized purpose of</p>

These are some thoughts about the current plans of the Savannah District of the United States Corps of Engineers.

My first comment concerns the great resource we have in the flow energy contained in the Savannah River. As currently configured, with the Lock and Dam furnishing flow energy to the Cyber Security Works located on the Augusta Canal, we have one of the vital Cyber Warfare support facilities supplied with a completely secure electrical power supply. This supply cannot be interdicted by a malicious cyber attack on the electric grid. My question is this. Will the modifications proposed by the U.S Corps of Engineers jeopardize that secure power source?

I must note that a general loss of electric power in the area over an extended period of time would possibly affect the supply of fuel to more commonly used emergency power sources, such as diesel generators. Note the Puerto Rico experience.

My second comment is to address the secure power needs of the other Cyber Warfare Support facilities to be built in the Augusta area. This includes those being built at Fort Gordon.

The lock and Dam represents an opportunity to install, in the Lock and Dam Structure, low head hydraulic turbine generators that could be used to supply other facilities with secure power through an independent protected electric grid. Running the grid underground would be one of the options.

My question concerning my second comment is this. Has any entity considered the supply of secure electric power to the Cyber Warfare Facilities and the Cyber Warfare Support Facilities, by considering the place of the Savannah River Flow

New Savannah Bluff Lock and Dam, and its inclusion is beyond the scope of the authorizing legislation for the fish passage project.

		<p>Energy and its inherent ability to supply such secure electric power?</p> <p>None of the above issues decrease the place of Georgia power or of Southern Company in the provision of secure power by the possible means noted above. Indeed, the expertise of the Southern Company and Georgia Power would be vital in accomplishing the goal of long term secure electric power and backup power when needed.</p> <p>In the interest of full disclosure, I am a retired engineer, retired from Southern Company. I am a registered engineer with current licenses in the States of Georgia, Alabama, and Mississippi.</p>	
142.	Patrick T Green, P.E.	<p>Corps of Engineers of the U. S. Army Mission Statement</p> <p>"The U. S. Army Corps of Engineer's <u>mission</u> is to provide <u>vital public engineering services</u> in peace and <u>war</u> to strengthen our <u>Nation's security</u>, energize the economy, and <u>reduce risks</u> from disasters."</p> <p>I have deliberately underlined key words and phrases in the above mission statement. It appears that the Corps of engineers has something of an internal disconnect concerning Cyber Warfare. The primary goal in the initial phase of overt Cyber Warfare is to shape the battlefield in such a way that the aggressor has the advantage. The primary target in such a shaping is the Electric Power Grid. That means testing the grid for vulnerabilities, as has been going on for some time, according to public reporting. The next phase is an attempt to shut down critical areas of the Electric Grid, thereby denying Cyber Warfare defenses the electricity required to run their machines. My memorandum addresses this sort of vulnerability, namely, building secure long term power supplies to the cyber Warfare and Cyber Support facilities across the Csra, particularly in</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat.</p>

		Augusta, North Augusta, and Fort Gordon.	
143.	<p>Christopher A. Militscher</p> <p>Chief, NEPA Program Office</p> <p>USEPA Region 4</p>	<p>Mr. Dayan:</p> <p>Consistent with Section 102(2)(c) of the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act, the U.S. Environmental Protection Agency (EPA) appreciates the opportunity to review the Supplemental Environmental Assessment (SEA), Fish Passage at New Savannah Bluff Lock and Dam (NSBLD), and the Draft Finding of No Significant Impact (FONSI). EPA has reviewed the SEA and FONSI and offer the following comments:</p> <p>Best Management Practices (BMPs) – The EPA recommends that the project engineer design and implement Best Management Practices (BMPs) which will minimize stormwater impacts associated with this project. The construction BMP plan should include implementable measures to prevent erosion and sediment runoff from the multiple linear project sites. We also recommend that the project engineer obtain all necessary local and state construction stormwater permits prior to commencement of construction.</p> <p>The EPA has not identified any significant environmental impacts associated with the proposed project. If you have any questions regarding our comment please contact Mr. Dan Holliman at Holliman.daniel@epa.gov <mailto:Holliman.daniel@epa.gov> , or at 404-562-9531. Thank you.</p>	<p>Thank you for your comments on draft report and providing the recommended best management practice to follow during construction.</p>

144.	George Batten	<p>Need to maintain the pool level with a maintained Dam and construction of fish ladder. I think this is you option 1A. This is needed for all the people who enjoy the present pool. Sunday I observed at North Augusta Borch Park, fisherman, boaters, newly weds getting their pictures taken in front of the River and numerous bikers and walkers enjoying the river. Thanks</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>
145.	W Brian Mullis, USN (Retired)	<p>Please reconsider the Permanent Rock Weir Course of Action for the CSRA portion of the Savannah River. With little to no knowledge of the weir and engineering in general, it is my opinion that the weir and conditions resulting from it, will see a near useless riverbed between Augusta and North Augusta, something amounting to a large stream and at times possibly nothing more than a mud flat.</p> <p>While I understand that there are conditions that must be legally met, there has to be a better way to meet those conditions. An organization like the Corps of Engineers has a long, proud history of successful accomplishments and I can't imagine that this challenge hasn't appeared and been successfully achieved before.</p> <p>I just believe there are so many reasons not to incorporate a Rock Weir and only 1, to. I have to think</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. We have been working with NOAA as well as USFWS in the development of the fish passage structure designs. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>

		<p>common sense would err on the side of the majority.</p> <p>Thank You and Very Respectfully,</p>	
146.	<p>Jesse Stone District 23 Senator, GA</p>	<p>Colonel Daniel H. Hiber: I respectfully request for your support on Alternative 1-1 regarding the Lock and Dam. The dam maintains the pool in the Savannah River running north through Augusta. This alternative provides access for spawning sturgeon needed in order for the Savannah Harbor Enlargement Project to move forward. It is essential to maintain the pool at the river's current level to ensure adequate water supply for municipal and industrial use.</p> <p>The Lock and Dam is critical for flood control below the dam from water coming in from tributaries to the north (up to Clarks Hill Dam and reservoir). It aids navigation within the portion of the river encompassed by the pool. It is essential to preserving property values of residential and commercial interests on both sides of the river, and for regional economic development and recreation. Thanking you for your consideration, I am,</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>
147.	<p>Thomas R Swift Augusta GA</p>	<p>We object to the proposed weir on the savannah river at Augusta. We support repairing the existing structure, the Lock and Dam, and installing a fish passage. The Corps of Engineers mission is to support navigation, if we lose the existing lock we have lost navigation to the lower Savannah River. In addition U.S. Fish and Wildlife document that shortnose sturgeon have difficulty negotiating a weir.</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. We have been working with</p>

			NOAA as well as USFWS in the development of the fish passage structure designs. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure. Rehabilitating the New Savannah Bluff Lock and Dam is more costly than other alternatives, fails to allow endangered and threatened species to pass the location and it no longer serves the purpose of its construction – commercial navigation between Augusta and Savannah
148.	Margaret Brown Augusta GA	I DO NOT WANT A ROCK WEIR! On the Savannah River at Augusta GA. Put in a fish ladder and repair <u>existing lock and dam</u> . We need to get to lower Savannah River. DO NOT LOWER the river water level – DO NOT RUIN quality of life of our people living here. We cannot destroy the lock and dam repair it. Please DO NOT have a rock weir. Save our river and access to the lower end of river.	Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure. Rehabilitating the New Savannah Bluff Lock and Dam is more costly than other alternatives, fails to allow endangered and threatened species to pass the location and it no longer serves the purpose of its construction – commercial navigation between Augusta and Savannah
149.	Louis N Davis	1) THE REMOVEL OF THE LOCK AND DAM ON THE SAVANNAH RIVER WILL HAVE AN ADVERSE EFFECT OF PROPERTY ON HOMES ON THE RIVER 2) NAVAGATION OF BOAT TRAFFIC ON THE RIVER	Thank you for your comment. Impacts to aquatic resources, cultural resources, recreation, and other environmental components are discussed in detail in section 3.6 of the draft report. Neither the recommended plan, nor any of the alternatives evaluated, would will have

		<p>3) THE HISTORICAL VALUE OF THE LOCK AND DAM</p> <p>4) WHAT IS THE EFFECT OF THE LAKE LEVEL ON THE THREE RESERVOIRS ON THE UPPER RIVER?</p> <p style="padding-left: 20px;">a. Lake Thurman</p> <p style="padding-left: 20px;">b. Lake Russell</p> <p style="padding-left: 20px;">c. Hartwell</p> <p>5) NO REPLY IS NECESSARY. THANK YOU</p>	<p>impact to pool levels at any of the upstream reservoirs.</p>
150.	<p>Mark T Nichols N Augusta, SC</p>	<p>I understand preserving nature of any kind which in this case (fish) and I'm ALL for it but by the same token look at what lowering the river will affect Augusta and surrounding areas. This will be financially and recreational as well as the appearance. I think total restoration of the Lock and Dam is not feasible. The best solution would be to repair and put a fish passage on either the GA or SC side. The putting in a rock weir for recreational use white water rafting will be for a very small percentage to benefit.</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>
151.	<p>J David Jameson Chair, SRS Community Reuse Organization.</p>	<p>RE: Savannah Harbor Expansion Project Fish Passage at the New Savannah Bluff Lock and Dam Post Authorization Analysis and Supplemental Environmental Assessment</p> <p>The Savannah River Site Community Reuse Organization (SRSCRO) is governed by a 22-member Board of Directors composed of business, government and academic leaders from both Georgia and South Carolina. We are charged with developing and implementing a comprehensive strategy to diversify the economy of a five-county region of Georgia and South Carolina. This</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by</p>

		<p>region includes Aiken, Allendale and Barnwell counties in South Carolina and Richmond and Columbia counties in Georgia.</p> <p>Initially, its mission was to develop and implement a regional economic development plan utilizing technology-based facilities at the Savannah River Site. Today, SRSCRO remains focused on diversifying the region's economy by supporting new business ventures that create new jobs in our region.</p> <p>The SRSCRO Board of Directors recognizes that the Savannah River is a major artery for our region's economy and quality of life. Lowering the pool level is unacceptable. This was apparent by the recent simulation, which showed what the river pool level would be under the Corps' preferred alternative, Alternative 2-6d. This alternative calls for a fixed rock weir with a dry floodplain bench on the Georgia side of the river. The simulation ended early after it had reached the target level due to river bank instability on the Georgia side of the river</p> <p>We support Alternative 1-1, which calls for the repair of the Lock and Dam gates and piers and riverside lock wall, and the construction of a fish ramp structure through the lock chamber onto the Georgia side of the river. We endorse maintaining the pool at an elevation of 114.5 feet. Furthermore, we ask the U.S. Army Corps of Engineers, Savannah District, to reconsider its preferred alternative and incorporate the needed repairs of the existing Lock and Dam gates and piers; in addition, to the construction of the necessary fish ramp structure.</p> <p>Thank you for allowing our voice to be considered</p>	<p>selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>
152.	Cole Giller North Augusta, SC	<p>Dear U.S. Army Corps of Engineers,</p> <p>I am writing in strong opposition to the rock weir proposal of the US Army</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while</p>

Corps of Engineers regarding the New Savannah Bluff Lock and Dam near Augusta, Georgia.

Although preserving recreation activities in a cost-effective fashion is one of the mandates for the Corps, the recent pool simulation performed in which the river level was lowered shows that this goal cannot be achieved with the rock weir proposal for two reasons.

First, when the level was lowered, the river looked as if it had been damaged by bombs. Wide segments of mud were exposed, docks that had been floating in neat rows were strewn along the riverbanks at tortured angles, and formerly submerged tree stump protruded above the river. It was a disturbing sight. But even more disturbing is that the using a weir means that the river level will fluctuate between this bombed out state and more normal levels, and construction efforts to make the river presentable in both conditions will be difficult, if not impossible.

Second, the trial ended prematurely because portions of the riverbank in residential areas caved into the river in response to the lower level. The Corps pointed out that the damage was due to improper construction, and concluded that the Corps was not responsible. Maybe so, but it is likely that many privately owned areas are not built to the Corps' specifications, and regardless of building codes, it is wrong for the Corps to take action that could cause mass destruction of property along the riverbank. Doing so will make the river look even more disastrous and pose a danger to those attempting to enjoy it.

So what does this have to do with recreation? Well, recreation is more than an Iron Man challenge or a sculling race. Recreation includes walking

preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure. Rehabilitating the New Savannah Bluff Lock and Dam is more costly than other alternatives, fails to allow endangered and threatened species to pass the location and it no longer serves the purpose of its construction – commercial navigation between Augusta and Savannah

		<p>along the river bank, jogging along the new trail towards the 13th street bridge, fishing, enjoying the river views from houses or office buildings, driving to the river for a weekend stroll with the kids, enjoying events and festivals held riverside, promoting business to settle along the river for the views and beauty of the area, and showing off our wonderful river to our out-of-town friends. The river is enjoyed thousands of times a day in many small ways, and these small ways are important. But nobody wants to see a riverbank that has been turned into a devastated muddy mess, and doing so will end these recreation opportunities.</p> <p>Proceeding with the weir project will not be a 'cost-effective' way to preserve recreation because it is not an effective way to preserve recreation. Please reject the rock weir proposal, find a way to repair or replace the Lock and Dam while satisfying requirements for fish, and preserve the river for the thousands of people who enjoy it every day.</p> <p>Thanking you for your consideration,</p>	
153.	<p>Angela Giller North Augusta, SC</p>	<p>To: U.S. Army Corps of Engineers</p> <p>I am writing to ask that you oppose the proposal of the US Army Corps of Engineers' plan to replace the New Savannah Bluff Lock and Dam with a rock weir.</p> <p>During a trial by the Corps a few weeks ago, we saw what effect the weir would have. The lowered water level exposed large areas of mud along the river, left the boat docks stranded on this mud, and exposed many tree trunks that had been submerged. It looked awful, and I would imagine this state would be a danger for the many people who have boats, and could also be a breeding opportunity for mosquitoes. I understand that the water level would fluctuate between this low</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a</p>

		<p>level and a higher level without the Lock and Dam, and I can't imagine any way to fix this constantly changing state of affairs</p> <p>A rock weir will ruin the river for the many people who enjoy it every day. The river will lose its beauty, and become dangerous for boaters. People will not come to the river to walk or for events, businesses will not settle nearby, property values on both sides will suffer: the river will become an ugly and unwelcoming sight, and the best resource of the Augusta area will be ruined.</p> <p>Please don't allow this to happen to us. Please fix the Lock and Dam in a way that preserves the issues with fish, and preserve this irreplaceable jewel of a river for our area.</p> <p>Thank you</p>	<p>result of the creation of the fish passage structure. Rehabilitating the New Savannah Bluff Lock and Dam is more costly than other alternatives, fails to allow endangered and threatened species to pass the location and it no longer serves the purpose of its construction – commercial navigation between Augusta and Savannah</p>
154.	Clinton W Hardy	<p>To Whom It May Concern,</p> <p>I am in FAVOR often Corp fixing the existing locks. The popularity of boating on the Savannah River is steadily increasing.</p> <p>It would be nice to put in above the locks and go to Savannah Ga.</p> <p>The AUGUSTA River side is rapidly expanding with Hotels and 2 New Cyber Security Buildings.</p> <p>North AUGUSTA S.C, has added a ball park on the River, with a new upscale Hotel.</p> <p>With the Locks functional boaters from Savannah could come up stream to AUGUSTA For Dinning, Baseball and over night stays.</p> <p>The city of AUGUSTA, Ga. is considering a Water Taxi on the River, this would open up better tours up and down the River.</p> <p>It would be a shame to not put the locks back in a working mode. It would certainly help tourism on the River from AUGUSTA to Savannah.</p> <p>It's a Win- Win Situation!!!!!!</p> <p>Thank you,</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure. Rehabilitating the New Savannah Bluff Lock and Dam is more costly than other alternatives, fails to allow endangered and threatened species to pass the location and it no longer serves the purpose of its construction</p>

			– commercial navigation between Augusta and Savannah
155.	Dave Terris MD North Augusta, SC	<p>SAFETY</p> <p>I am concerned that no one appears to be considering human safety as the various options for helping our friend the sturgeon are weighted.</p> <ol style="list-style-type: none"> 1) Much boating, wakeboarding, skiing and fishing occurs on the Savannah 2) These activities are moderately hazardous even at the current water level because of underwater obstacles 3) If the river is lowered as in the simulation, I guarantee there will be a disaster with injury and possibly loss of life. 4) This is not my area of expertise, but I am confident we can help our sturgeon without putting our citizens at risk. 	<p>Thank you for your comments. The USACE Savannah District's must follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality, according to Implementation Guidance, of the upstream pool of the New Savannah Bluff Lock and Dam for the purpose of recreational navigation and water supply.</p> <p>Based on the simulation, the recreational navigation channel would be at least 5 feet in depth throughout the length of the NSBLD pool. According to Safe Water Sports and the International Waterskiing and Waterboard Federation, the recommended minimum water depths for water skiing, waterboarding, and jet skiing is 5 feet (1.5m). These water sports are not expected to be negatively impacted because water depths would be safe.</p>
156.	Alfred Zachery Everitt Augusta GA	<p>Dear Mr. Armetta,</p> <p>I am a long time Augustan who loves our Savannah River and all the opportunities, commercial and recreational, it affords. These opportunities need not be listed here as they are well known by the Corps and the residents of the CSRA. My purpose here is to add my name to the list of the many thousands of area residents who oppose and are appalled by Corp's plans for the Lock and Dam .</p> <p>I do appreciate your action to extend the comment period to allow more input by those concerned. I hope that extension indicates a willingness on your part to give the additional input serious, unbiased consideration.</p> <p>There is no need to recount the issues at hand. They are also widely known and include such things as the loss of flood control, the devastation a</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>

		<p>lower pool level would cause to commercial and recreational users of the resource and your interpretation of the WIIN Act. That act provides two options for the Lock and Dam:</p> <p>1. Modify it so that it will maintain the upstream pool for navigation, water supply and recreational activities, as in <i>existence on the date of enactment of the act and allow safe passage over the structure to historic breeding grounds of short nose sturgeon, Atlantic sturgeon, and other migratory fish.</i></p> <p>Or</p> <p>2. Replace the Lock and Dam with a structure that can <i>maintain the pool for water supply and recreational activities, as in existence on the date of the enactment of the act.</i></p> <p>As a retired attorney with extensive experience in subjects such as this, I do not believe the Carp's rock weir plan complies with either of these options.</p> <p>I plead with you to reconsider whether the rock weir plan complies with the requirements of WIIN and consider all information and concerns presently known and to be received during the extended comment period.</p> <p>Your consideration of my views will be appreciated.</p>	
157.	David R Myers, DDS Evans GA	<p>Dear Ms. Armetta,</p> <p>The effects of the recent drawdown of the Savannah River on the riverfronts of Augusta, GA. and North Augusta, SC. have been publicized. The purpose of this letter is to illustrate that the effect extended upriver into Columbia County Georgia. I am a property owner in Riverchase subdivision in Columbia County. Riverchase subdivision has a boat ramp, a dock and provides direct access into the main channel of the Savannah River. As a result of the drawdown, the dock was on the</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of</p>

		<p>ground, the boat ramp was out of the water and the river was not accessible through the normal channels and the surrounding area was turned into a mud flat. The enclosed pictures confirm these conditions.</p> <p>Riverside Park is a nearby Columbia County owned community facility. As a result of the drawdown, the boat ramp was not useable, the fishing piers were compromised and the surrounding area turned into an extensive mud flat. The enclosed pictures confirm these conditions.</p> <p>The 2018 Water Infrastructure Improvements for the Nation Act obligates the Corps of Engineers to maintain the river pool and requires the construction of a fish passage. The recent drawdown of the Savannah River demonstrates that the Corps plan to deactivate the New Savannah Bluff Lock and dam and replace it with a rock weir is unacceptable. The drawdown clearly shows that the plan does not maintain the river pool and will cause damage to docks, piers and boat ramps and result in their loss of function and turn the surrounding riverfront areas into extensive mud flats. The drawdown provides no information as to how the rock weir would function as a fish passage. Therefore, I encourage the Corps of Engineers to develop a plan to repair the Lock and Dam and construct a fish passage to maintain the river pool, prevent property damage and preserve the river recreational opportunities, the riverfront environment and provide the fish passage.</p> <p>Sincerely</p>	<p>the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure. Rehabilitating the New Savannah Bluff Lock and Dam is more costly than other alternatives, fails to allow endangered and threatened species to pass the location and it no longer serves the purpose of its construction – commercial navigation between Augusta and Savannah</p>
158.	F. Joseph McCrosson Aiken, SC	<p>Dear Ms Armetta:</p> <p>March 8, 2019</p> <p>I am 78 years old and have been a resident of Aiken, SC, for most of my life. I have watched my neighbors struggle for years to revive downtown</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool</p>

Augusta. The Olde Town neighborhood had become blighted. Drugs had become a big problem, and it was tough to raise children there.

But in recent years, I have seen some wonderful successes. Through the hard work of many, the old abandoned Houghton School on Greene St. was resurrected into a beautiful new school; now named Heritage Academy, neighborhood children of all backgrounds can come here and receive a safe, high-quality, Christ-centered education.

The old Anne Boardman Widows Home on Telfair Street was turned into Christ Community Health Services; here, people can now come for medical services no matter their ability to pay.

The riverfront has been beautified. There is now a safe walkway along the levee. Houseboats now line the old docks. International boating events now come to Augusta for competitions.

On the other side of the river, in North Augusta, a new ballpark for the Augusta Green Jackets has just been completed. A new hotel has opened adjacent to it. There are greenspaces and walking paths. I could mention many more things that have recently located near the river because of its beauty and uniqueness.

Augusta was founded in 1736 because of the river. It was a key reason for Augusta's prominence in the cotton and textile industries, the founding of the Medical College of Georgia in 1826, the chartering of the Georgia Railroad and Banking Company in 1833, the establishment of the Georgia-Pacific Co. in 1927, the Savannah River Plant in 1950, and so on. I could even probably find that the river somehow factored into the reason why Bobby Jones

of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.

		<p>selected Augusta as the home for his golf course.</p> <p>A lot of the present-day vitality of the CSRA hinges on the water level of the river. Let us not forget the aesthetic and economic value of the river to humans as we look out for the shortnose sturgeons. The old Savannah River Lock and Dam is a beautiful structure to look at, and it was quite a nice engineering feat in its day. The people of the CSRA, and I suppose the shortnose sturgeons, are counting on you to come up with a better, more imaginative engineering solution than a rock weir that results in lowered water levels. I believe the politicians on both sides of the river will find you additional money, if that's needed. Let's have fun with this.</p> <p>Sincerely,</p>	
159.	John Clemens North Augusta, SC	<p>Dear Ms. Armetta,</p> <p>I own property on the Savannah River in North Augusta, SC. I am writing to voice my concerns about the impact of the proposed rock weir on my property and others in the Rivernorth community. Attached to this letter are two photos of my dock and my neighbor's dock sitting on dry land after the drawdown.</p> <p>Planning and development along Augusta and North Augusta's waterfront have been based on certain pool levels for decades, at least since the 1970's.</p> <p>Recreational boaters, fishing and the beauty of the city's waterfront are valid arguments for maintaining the pool. The Corps has made it clear their main concern is cost saving and fish migration. The weir is not essential for a "fish ladder."</p> <p>I am concerned about the validity of Corps of Engineer models deriving predictions from "Google" images several years old. Surely the military</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p> <p>The changes in appearance of the shoreline of properties along the pool are not yet known. The simulation event occurred after a period of higher water levels and high flows during the winter. The appearance along these properties</p>

doesn't have to rely on Google to do scientific models!

Normally, water under my dock has been 3-5 feet. They predicted at least a foot of water under my dock as a worse case with the weir. This week, most of the docks in my neighborhood are sitting on dry land, at least 12 inches or more above water on islands. This is evidence that the models and assumptions are flawed.

While concurrently laying out specifications for the construction of piers, catwalks and boat docks in my neighborhood of Rivernorth it appears the Corps has advocated for removal of the dam. Because I am permitted by the Corp, and heavily invested in my boat, pier and dock, I have a reasonable expectation of being able to use them in the future to access navigable water.

The Corps is responsible for the flawed design of my dock and pier.

The Corps should never have issued permits for docks in Rivernorth.

The cost of the rock weir should include either dredging and/or extending my pier and everyone else's to deeper water.

A future of 6-12 inches (claimed by models) under the best of conditions is not enough for my boat to function and is unacceptable, while the evidence proves even 6-12 inches will not be achieved. Anyone looking to buy property along the river will see expensive docks on dry land.

The Corps is responsible for entire properties that will become unmarketable.

Those who support the weir as planned are directly responsible for damaging my property and property values in my neighborhood and others. It is short-sighted.

may change when the actual project is constructed.

USACE completed an after-action review of the February 2019 simulation. For information on the after-action review and additional information about the February 2019 simulation, please see the Engineering Appendix, Attachment 4.

		<p>The Corps is responsible for permanently destroying any current and future investment plans along the Augusta, North Augusta waterfront.</p>	
160.	Eugenia Adams Augusta GA	<p>I would like for this comment to go on record that I am against the demolition of the New Savannah Lock and Dam that is located in Augusta, GA.</p> <p>I frequently use the Savannah River for fishing and other boating activities. I have found that the level of the river is already too shallow in some areas to be safe, especially around the location of the training wall and between Highway 520 and 13th Street in Augusta.</p> <p>Many of my friends have expressed their support for keeping the dam, not to demolish it to build a rock weir. This would mean a loss of the fishing and recreation area at the lock and dam and create flooding concerns in the old recreation area.</p> <p>Thank you for hearing my concerns, and I thank you for your support to keep our dam.</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure. Rehabilitating the New Savannah Bluff Lock and Dam is more costly than other alternatives, fails to allow endangered and threatened species to pass the location and it no longer serves the purpose of its construction – commercial navigation between Augusta and Savannah</p>
161.	Tony McKinney, North Augusta, South Carolina	<p>I am a resident of South Carolina who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. South Carolina industry rely on the Savannah River for water for the production of products. The Savannah River site rely on the Savannah River for water.</p> <p>I am in support of keeping the Lock and Dam. It is essential to the state of South Carolina that the pool level upstream from the Savannah Bluff Lock and Dam be maintained at the average</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and</p>

		<p>current levels and the Lock and Dam be repaired and kept as part of the Savannah River infrastructure.</p>	<p>comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure. Rehabilitating the New Savannah Bluff Lock and Dam is more costly than other alternatives, fails to allow endangered and threatened species to pass the location and it no longer serves the purpose of its construction – commercial navigation between Augusta and Savannah</p>
162.	Ed and Linda Lake, Augusta, Georgia	<p>We have lived in Augusta, Georgia for 32 years and wanted to reach out in support of keeping the Lock and Dam in place of the rock weir. The river is a real drawing card for folks and business thinking of relocating to Augusta. Over the last 32 years many improvements have been made along the river ...most recently the new baseball field/hotel and apartment complex completed on the South Carolina side in North Augusta, South Carolina. Our Congressional Representative, Rick Allen, will be fighting to keep the dam and make the necessary repairs to it in order to keep it in place. Hopefully, you and the city leaders on both sides of the Savannah River can reach a compromise whereby the fish can come upstream and not at the expense of lowering the river to unacceptable and unsafe levels. Thank you in advance for working with us on this matter!</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure. Rehabilitating the New Savannah Bluff Lock and Dam is more costly than other alternatives, fails to allow endangered and threatened species to pass the location and it no longer serves the purpose of its construction – commercial navigation between Augusta and Savannah</p>
163.	General Public, Augusta, Georgia	<p>I have been a resident of August Ga for the past 65 years. I grew up downtown 3 blocks from the River. I have fond childhood memories and current of being on the river. Both times in recent years the pool was</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while</p>

		<p>lowered it caused damage and was unsightly along the river. The test that was done was a disaster. Your spokesperson did not want to hear what the public had to say. We need to maintain the river levels as previously designated which would maintain a near normal pool level. The rock weir is not an acceptable process at all. You even had to stop your test before you even go to your planned level because it was undermining the banks and leaving a mess on the river. Again I am a not for the Corps plan to create the weir. There needs to be alternative way to repair the existing structure so there is control of the water level to maintain the pool. There are major sporting events that are held in Augusta bringing in Millions of dollars to the community plus add the recreational factor that the people of the community participate in that would be gone.</p>	<p>preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure. Rehabilitating the New Savannah Bluff Lock and Dam is more costly than other alternatives, fails to allow endangered and threatened species to pass the location and it no longer serves the purpose of its construction – commercial navigation between Augusta and Savannah</p>
164.	Lucille E. White, Augusta, Georgia	<p>Gentlemen: I am writing to ask that you do not destroy the Augusta Lock and Dam since you have been presented with a way to allow the fish you are protecting to pass through the Dam. I don't mean to be unpleasant but it's hard not to be when you are looking at the federal government's willingness to destroy the value of homes on the waterfront, the recreational activities, the actual livelihood of some people and the tourists draw afforded to our area by the higher level of the water controlled by the Lock and Dam simply to protect a fish. I'm all for conservation of wild life and things that live in the waters, but only when it's done with proper consideration of people. Please do not tear down the Augusta Lock and Dam and make yourselves look like idiots instead of the intelligent people you are. Please use the alternative method suggested.</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure. Rehabilitating the New Savannah Bluff Lock and Dam is more costly than other alternatives, fails to allow endangered and threatened species to pass the location and it</p>

			no longer serves the purpose of its construction – commercial navigation between Augusta and Savannah
165.	Linda Lake, Augusta, Georgia	Please do whatever possible to ensure that the River level is not lowered as the Army Corps is proposing. Other options should be implemented so that the Savannah water level remains as it is.	Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.
166.	Wallace Zealy, Augusta, Georgia	I own twelve acres of Savannah River frontage approximately two miles above the New Savannah River Bluff Lock and Dam. My land is bordered by the river on the east and by Levee Road on the west. This land is in a Federal Qualified Opportunity Zone created by The Tax Cuts and Jobs Act to spur economic growth. In addition to my property, all of the land bordering the Savannah River from the Lock and Dam up past downtown Augusta are in the same Federal Opportunity Zone District. The Corps would be hard put to explain how the removal of the Lock and Dam and lowering of our river level would spur economic growth in the federally designated Opportunity Zone. The Corps of Engineers has not taken into account the impact on the Federal Qualified Opportunity Zone District. I am asking the Corps as well as our elected representatives in both	Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat.

		<p>the Congress and the Senate to investigate the impact on properties, business, and local governments. What legal remedies will those affected have against one governmental agency's actions when in direct conflict with another recently enacted governmental economic development program?</p> <p>It would be encouraging to find the two governmental agencies working in concert to bring about a solution that accomplishes the best for our Augusta/North Augusta area.</p>	
167.	Tom Beusse, Lexington, Georgia	<p>In the February 25, 2019 announcement by the Corps it states: "The Corps' recommended plan will allow fish to access spawning areas closed since the lock and dam opened." However, in my personal experience this statement is not correct. I lived in Augusta in the 1980's and 1990's and was an avid fisherman. Around the first week of April we would head to the Savannah River Lock and Dam and catch American shad that had accumulated on the downstream side of the dam. American shad are a salt water fish that come up the Savannah and other rivers each spring to spawn. My understanding is that at these times the lock would be opened in order to allow the shad to continue their journey up river. We had a fishing acquaintance who had an inflatable Zodiac boat and around June or July we would put the boat in and head upstream to the rocky area just below the Stevens Creek dam. We caught a lot of American shad there at this time of year. There were also carp, gar and other fish around these rocks, presumably all spawning. We saw eagles fishing for the shad and we could see shad bodies lying on exposed rocks that were left over from eagle meals. The Stevens Creek dam has a fish ladder but it does not operate so this is as far up the</p>	<p>Thank you for sharing this information. Anecdotal information from fishermen improves our understanding of the resources. The locks were operated previously to pass shad, which likely explains how carp, gar, and shad were observed upstream of the NSBLD. However, as discussed in Comment 138, navigational locks have not proven to be an effective way to pass sturgeon. This is likely why shad were seen above the NBSLD but not sturgeon.</p> <p>We anticipate water passing over and through the rock ramp will also become better oxygenated, similar to water passing over the dam.</p>

		<p>Savannah River that spawning fish can go. In Hull's book on the history of Athens (Georgia) he recounts that the committee sent to locate the site for the University of Georgia feed on shad caught in the nearby Oconee River. So in the "old days" (i.e. before any dams) the shad would come way up into the rivers for their spawning activities. Another thought is that the Corps proposal might interfere with the migration of another species. In the hot, hot summertime, usually late August, salt water striped bass migrate up the Savannah not to spawn but to seek cooler, oxygenated water. We would fish for them by casting up almost into the water spilling over the dam at the lock and dam. The water splashing over the dam into the river below added oxygen and the stripers accumulated at the foot of the dam to get the better water. I don't know if the sturgeon can get through the lock but it seems like they could if shad can. We never saw a sturgeon when fishing the rocks at the Stevens Creek dam. I hope you will take this information into consideration when the decision on the lock and dam modifications is made.</p>	
168.	<p>Builders Association of Metro Augusta, Augusta, Georgia</p>	<p>On behalf of the Builders Association of Metro Augusta, I would like to register our opposition to the Carp's recommended plan to remove the New Savannah Bluff Lock & Dam and replace it with a rock weir. Although we understand the need to provide a fish passage option to meet the mandate required by the Savannah Harbor deepening project, we think there are better ways to do this with less local impact. The Savannah River is a vital resource to the greater Augusta area. The economic, recreational, and quality of life impact of the river has been and will continue to be enormous in the years to come. The region depends on the river and the permanent lower pool level: threatens current property owners, development projects, and the</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower</p>

		<p>economy of the region in the future. We believe and support the repair of the current lock & dam and the construction of a fish ladder to meet the remediation requirements. The ladder is a proven and effective option. This solution would enable the Corp to both maintain the current river pool level, provide fish passage, and provide maximum flood control tools by maintaining the Lock & Dam. The Savannah River has and will remain a vital contributor to the economy of this community. We think repairing the New Savannah Bluff Lock & Dam is the best option for all.</p>	<p>the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure. Rehabilitating the New Savannah Bluff Lock and Dam is more costly than other alternatives, fails to allow endangered and threatened species to pass the location and it no longer serves the purpose of its construction – commercial navigation between Augusta and Savannah</p>
169.	Bill Brown, North Augusta, South Carolina	<p>I am strongly opposed to the rock wier plan because: Lowering the pool would result in revenue loss for Augusta and North August. Water levels could drop in times of drought and be subject to flooding at other times. Riverwalk Augusta would be negatively impacted. The wier plan has not been shown to aid sturgeon in their migration in the Cape Fear River. We support Plan 1-1, which repairs the dam.</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated will lower the water levels from what is out there under existing conditions just by varying degrees</p>
170.	Jackie Newman, Augusta, Georgia	<p>To whom it may concern: As a lifelong resident of Augusta. We as a family are very concerned about the future of the lock and dam. We are worried about the effect it will have on our beautiful Riverwalk. Our family have had weddings there and enjoyed our beautiful city and Riverwalk to our out of state family and friends. Please consider other options and not disturb the beautiful area and river in the Augusta area.</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the</p>

			<p>shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated will lower the water levels from what is out there under existing conditions just by varying degrees</p>
171.	<p>Lonnie Sevier, Hephzibah, Georgia</p>	<p>I support Plan 1-1 only. Any other option will be environmental and possibly financial suicide as well.</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated will lower the water levels from what is out there under existing conditions just by varying degrees</p>
172.	<p>Majorie Chamberlain, Augusta, Georgia</p>	<p>I am a retired state of GA employee. I worked at the Georgia visitor center. A big draw to this area is the fabulous Savannah River. I now work parttime for the Augusta Convention and Visitors bureau and not only see how much tourism the Savannah River brings but buisnes and residence. Also there is a big fund raising campaign all in Augusta which is centered around our River. I like so many Augusta citizens can't help but feel like our progress comes in second place to the port success in Savannah GA.</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional</p>

			spawning habitat. Any of the alternatives being evaluated will lower the water levels from what is out there under existing conditions just by varying degrees
173.	Francis Christian, Augusta, Georgia	Does the COE have any cost analysis of the value of having access to the Atlantic ocean with the present lock and the ability to and from the coast? Does the COE place any value on this? This Value should include but not limited to economic, recreation, fish migration plus any benefit to industrial organization now or planning to be in the CSRA. With August being the 2 nd largest city in Georgia and growing from new development I believe a cost versus benefit analysis study should be made and release to the public before deciding to remove the lock from the Savannah River.	Thank you for your comments. The USACE Savannah District's must follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality, according to Implementation Guidance, of the upstream pool of the New Savannah Bluff Lock and Dam for the purpose of recreational navigation.
174.	Francis Christian, Augusta, Georgia	If a rock wier is placed in the Savannah River and the water level drops by an average of 2 feet, the training wall under the 2 bridges will be exposed. Has the COE done any cost study to determine who will pay for and when would the wall be removed from the river? And will the cost be added to the overall cost of the rock wier? If the wall says in the river it would become a death trap for any boaters not familiar with its existence.	Thank you for your comment. The Corps is aware of the concerns regarding the training wall and lower water levels. The training wall is a feature of the Savannah River Below Augusta navigation project constructed c. 1910 and is a known navigational hazard for recreational boating. The training wall will be marked with buoys as part of the fish passage construction. The Savannah District has requested approval to study removal of the training wall separate from the fish passage analysis.
175.	Francis Christian, Augusta, Georgia	If the rock weir if built in the Savannah River as planned there will probably be over 150 lawsuits filed by property and business owners along the river. Has the cost of these law suits been added to the overall cost of the rock weir?	Thank you for your comments. The cost of the law suits has not been added to the overall cost of the rock weir.
176.	Francis Christian, Augusta, Georgia	I have seen several reports that COE has agreed to pay some environmental groups money to help with plans to build this rock weir. Has any money been promised are planned to be paid now or in the future for anything other than the construction of the rock weir? If so, who are these groups and what will they do to earn their money. Also if	Thank you for your comments. To the USACE Savannah District's knowledge are not aware of the information you provided in your comment. The fish passage structure will be cost shared between the USACE and the non-federal sponsors (GADOT and GPA).

		<p>true how much money are we talking about?</p>	
177.	Francis Christian, Augusta, Georgia	<p>Are there any plans to compensate property and business owners who would be effected by the lowering of the Savannah River? And if so, has this cost been added to the overall cost of this rock weir?</p>	<p>Thank you for your comment. The changes in appearance of the shoreline of properties along the pool are not yet know. The simulation event occurred after a period of higher water levels and high flows during the winter. The appearance along these properties may change when the actual project is constructed.</p>
178.	Francis Christian, Augusta, Georgia	<p>With the present ability to flush the river from the bottom versus this lost with a rock wier what is the COE plan to keep the Savannah from becoming a trash filled cesspool.</p>	<p>The current gates at the lock and dam are not at the bottom of the river. They are surface overview and the rock weir would mimic this function,</p>
179.	Mark Ogilvie, Smyrna	<p>The dam on the Savannah River in Augusta (as do all dams on Georgia's rivers) has a state-wide effect, most notably: blocking sand from reaching Georgia's coastal islands. Every year, winter storms and rising seas remove some of the sand from the islands and deposits them in off-shore waters where they may no longer be available to nourish beaches and dunes.</p> <p>The coastal islands protect Georgia's coastal cities from the full force of Atlantic storms and hurricanes and shelters coastal estuaries, the nursery for Georgia shellfish and saltwater fish.</p> <p>So any decisions made about the Augusta Lock and Dam should take into consideration their impact upon the state as a whole.</p> <p>Demolition of the dam should be a primary consideration, but failing that, periodic dredging and release of the dredged sand to flow down the Savannah River to the coast may be necessary.</p>	<p>Thank you for your comments. The complete removal of the lock and dam would have the benefit of allowing more natural transport to occur and be available to replenish the barrier islands.</p>
180.	Lower Savannah Council of Governments	<p>The Lower Savannah Council of Governments has economic and community development concerns</p>	<p>Thank you for your comments. The USACE Savannah District's must follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the</p>

with the Corps proposed project and the significant lowering of the Savannah River water level. As you state in your Review Plan, "[t]he project currently serves ... regional economic development and tourism" (page 4). The report then goes on to state that "[i]t is not anticipated that there will be any public disputes concerning economic and environmental costs and benefits" and this statement is repeated on page nine "[t]he project is not likely to involve significant public dispute as to ... the economic ... costs and benefits of the project."

As the federal EDA economic development planning district and the regional tourism district (Thoroughbred Country), we believe that the proposed project and reduction in water levels may have a significant negative effect on economic development and tourism in the region. The Savannah River plays an important role in recreational tourism (boating, fishing, etc.) along the North Augusta Greenway, and the tourism experience associated with North Augusta's Riverside Village that includes the high impact tourist destinations of SRP Park and the Crowne Plaza at Hammond's Ferry. The 2017-2022 Comprehensive Economic Development Strategy (CEDS) Objective 10.1 states that we will "[s]upport the efforts of the state and other regional tourism marketing organizations to develop sustainable tourism-based economic development programs" This project could negatively impact tourism and economic development in Aiken County and downstream in Barnwell and Allendale counties; potentially running counter to CEDS Objective 10.1. Therefore, we request that an Independent External Peer Review (IEPR) - Type I, be conducted to

Savannah Harbor Expansion project while preserving the functionality, according to Implementation Guidance, of the upstream pool of the New Savannah Bluff Lock and Dam for the purpose of recreational navigation and water supply.

An IEPR – Type I has been conducted for the study.

		determine the potential economic costs or benefits of the project. We believe that such a study is warranted because the original study was conducted prior to the planning and completion of Riverfront Park.	
181.	Dan Wells	Section 3.6.8.2 of the report on the New Savannah Bluff Lock and Dam appears to contain a very significant error. It seems to say that the current structure offers no reoxygenation of the water flowing through it. A casual glance at the structure and the turbulence below it would cause anyone to question that, and indeed the Phinizy Center for Water Sciences has collected years of data demonstrating significant oxygenation just past the Dam. It is very difficult to believe that a passage deep enough to pass sturgeon would provide equivalent oxygenation. This is especially significant given that scdhec, gadnr and epa have been involved in a 5r process to address Do levels in the river for many years.	The information presented in Section 2.6.8.2 does not state that the current lock and dam structure does not offer reoxygenation of the water flowing through it. The removal of the lock and dam and creation of the fish passage structure is expected to improve the overall water quality within the area where the location where the lock and dam is currently present. The placement of the rocks/stones in the river is expected to increase aeration, creating more oxygenated water for the aquatic resources in the area where the lock and dam used to be located and where occasionally there would be ponded water when the gates were closed.
182.	Paul Beck, Augusta, Georgia	The Savannah harbor deepening project will result in increased salinity of water further upsteam. Atlantic sturgeon will therefore need to be able to move further upstream – thus the issue about what to do with the Lock and Dam. The answer is really quite simple. What is the best means of protecting the sturgeon? If replacing the entire lock and dam with a rock weir offers the best protection for the sturgeon, then that is the solution. The issue here is not what is best for the city of Augusta, the issue is insuring compliance with the Endangered Species Act, and doing that which offers most protection for an endangered species. I'm aware of the concerns that a 2-3 ft (or >) drop in water levels would likely leave some docks on the ground and cause extension of mud flats further out from shore. Docks can be extended. Docks can be replaced.	Thank you for your comments and your support of the draft recommended plan.

		<p>Mud flats will with time fill with vegetation and form a new shoreline. The city of Augusta can survive this. A drop of 2-3 feet of water level will not permanently devastate riverfront property. Again , the issue here is not what is best for Augusta, the issue is much bigger and much more important - What is best for , and what must be done , to protect yet another endangered species.</p>	
183.	Sally Broadie	<p>Completely against closing the Savannah River Lock and Dam. Don't do it. It is a mistake</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure. Rehabilitating the New Savannah Bluff Lock and Dam is more costly than other alternatives, fails to allow endangered and threatened species to pass the location and it no longer serves the purpose of its construction – commercial navigation between Augusta and Savannah</p>
184.	Bryan Adams, Augusta, Georgia	<p>To Whom it may concern:</p> <p>I am stating my opposition to lowering the Savannah River water level at the New Savannah Bluff Lock and Dam as part of the Savannah Harbor Expansion Project – SHEP Project. (Alternative 2-6d)</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District</p>

Many joint meetings have been held in our community (involving Richmond and Columbia County, Georgia and Aiken County, South Carolina) addressing this issue of lowering the water level of the Savannah River due to the SHEP Project. I would say that over 99% of the attendees were in strong agreement with me and strongly opposed to lowering the water level.

When you consider all the negatives created by lowering the water level against the one reason of letting some fish get upstream of the Lock & Dam, it's a no-brainer!!

I'll mention just some of the negatives created by lowering the water level:

1. Lowering the water level is directly opposite of the intent and wording of the WIN Act Law (Public Law 114-322-Dec 16,2016) which clearly states to "MAINTAIN THE POOL.....AS IN EXISTENCE ON THE DATE OF ENACTMENT OF THE THIS ACT".
2. Lowering the water level will create a public safety hazard. The lower water level will dramatically reduce the water buffer depth of very dangerous obstacles that are below the surface of the water (ie. rocks, stumps, training wall, etc) . This reduced water buffer will certainly cause injury or even death to some unsuspecting people enjoying their recreational activities.
3. Lowering the water will negatively impact the economy of the local governments who have invested and promoted the development around the use of and view of the river. Like any river front community, our community has industry, tourism, housing developments, business developments, retail development, annual ironman competitions, rowing regattas, race boat events, fireworks, concerts, baseball stadiums, fishing events, rowing events, and many, many more events. In fact , our cities

must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.

were founded on the use and view of this river!!

4. Lowering the water level will dramatically reduce the property values of businesses and residents. Many businesses and residential neighborhoods have their life savings invested in property that borders the river. Their properties and their views were in high demand and were in fact among the top upscale properties in our cities. Most of these property owners will likely lose their life savings, leave and never be able to recover their losses.

5. Elimination of the New Savannah Bluff Lock and Dam and replacing it with a fish weir would increase flooding in our communities. The dam allows the use of gates to release excess water during periods of heavy rain and flooding. With a fixed height fish weir, you lose the ability to release the flood waters thereby causing property damage to the entire community!

6. When the Army Corps of Engineers simulated the lower water level in February 2019, it: 1) severely damaged a community's seawall, 2)caused most docks to sit on mud flats, 3)created mud islands to appear in the middle of the river, 4)created huge mud borders along the river, 5)made boat ramps unusable, and 6)essentially made the river unusable for recreational activities which is specifically against the WIIN Act. It changed the view of the river from something beautiful and to an ugly eye-sore. The simulation of the lower river level conducted by The Army Corps of Engineers was a disaster! Please! Please! Don't let this simulation become a permanent reality for our cities and communities!!

My main questions is: Why do these fish need to get upstream of the New Savannah Bluff Lock and Dam? I've read that the Augusta Shoals (which is above the Lock and Dam) is a historic spawning ground for some species of fish. The fish that are

		<p>currently alive today were born below it and have never been above the Lock and Dam! These fish don't know about this "historic" spawning area!</p> <p>There are 181 miles of river between the Savannah Harbor and the New Savannah Bluff Lock and Dam. I can't believe that these fish need to go more than 181 miles upstream to spawn! It seems reasonable that a shoal area could be created below the New Savannah Bluff Lock and Dam to provide adequate area for the fish to spawn.</p> <p>I propose that the Army Corps of Engineers pursue alternative 1-1 which maintains the current average water level of the Savannah River OR pursue some other alternative that does not lower the average level of the Savannah River. Otherwise, I'm certain that with over 99% of the community against lowering the water level, there will be lawsuits filed by more than just a few "fish people".</p>	
185.	Jerry Hughson, Aiken, South Carolina	<p>I would like to provide comments to the Corps' proposal to abandon the lock and dam system on the Savannah River near Augusta, GA and North Augusta, SC, in favor of a "rock weir". To replace the lock and dam system with a rock weir is very ill-advised and would have profound negative impacts on Augusta, North Augusta and the surrounding area. The rock weir proposal should be abandoned, and the lock and dam should be repaired.</p> <p>As I'm sure you know, and have heard from many residents in the CSRA, the Savannah River is a major factor in the economic well being of the area. There are neighborhoods on the river, the new ball park, river walk, restaurants, all of which contribute to the economic development of the area. To destroy the lock and dam would cause a blight on the area which could put a halt to the</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure. Rehabilitating the New Savannah</p>

		<p>development of businesses, and to real estate values. I can think of nothing positive which would result from the Corps' proposal. Sometimes, the cheapest alternative is not the best in the long run, and this is one of those cases.</p> <p>I implore the Army Corps of Engineers to reconsider, and do what is right, not what is convenient.</p>	<p>Bluff Lock and Dam is more costly than other alternatives, fails to allow endangered and threatened species to pass the location and it no longer serves the purpose of its construction – commercial navigation between Augusta and Savannah</p>
186.	Greg Pearson, Augusta, Georgia	<p>Dear Sirs, the recent simulation and drawdown of the Savannah River in my lifelong hometown of Augusta Ga. has left me deeply concerned about your intentions of removing the Lock and Dam and replacing it with a rock weir. Alternative 2-6d and any other alternative other than 1-1 is not acceptable as they do not sustain an acceptable pool level for the river and does not allow for flood control and the flushing of silt and debris from our river. The park is also in danger of being lost to a dugout flood plain which is also unacceptable as it has been a part of life for many in this area for recreation, weddings, family reunions and peace and quiet. The Lock and Dam must stay there is no other option....</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure. Rehabilitating the New Savannah Bluff Lock and Dam is more costly than other alternatives, fails to allow endangered and threatened species to pass the location and it no longer serves the purpose of its construction – commercial navigation between Augusta and Savannah</p>
187.	Jeff Heck, Augusta, Georgia	<p>Three plans were proposed by the Corps. Of these, we support plan 1-1, to repair the dam and provide a fish passage.</p> <p>A fish weir will not be effective, from what we read, and there will be significant economic damage to Augusta and river residents in both</p>	<p>Thank you for your comments. The USACE Savannah District's must follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality, according to Implementation Guidance, of the upstream pool of the New Savannah Bluff Lock and Dam for</p>

		<p>states. We love having the 1/2 iron man competition here.</p> <p>Our city has a devastating history of flooding, and the dam helps to keep that regulated.</p>	<p>the purpose of recreational navigation and water supply.</p> <p>The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with the best chance to get sturgeon past the lock and dam to additional spawning habitat. Rehabilitating the New Savannah Bluff Lock and Dam is more costly than other alternatives, fails to allow endangered and threatened species to pass the location and it no longer serves the purpose of its construction – commercial navigation between Augusta and Savannah</p>
188.	GADNR, Coastal Resources Division	<p>The Georgia Coastal Management Program (GCMP) concurs that construction and operation of a fish passage at the New Savannah Bluff Lock and Dam site will not have reasonably foreseeable negative impacts to coastal uses or resources in Georgia's coastal zone and is fully consistent with the GCMP</p>	<p>Thank you for your comments that the proposed alternative will not have reasonably foreseeable negative impacts to coastal uses or resources in Georgia's coastal zone and is fully consistent with the GCMP.</p>
189.	South Carolina DNR	<p>Dear Ms. Armetta,</p> <p>Personnel with the South Carolina Department of Natural Resources (SCDNR) have reviewed the above referenced Draft Integrated Post Authorization Analysis Report (PAAR) & Supplemental Environmental Assessment (SEA) prepared by the United States Army Corps of Engineers (Corps). The SCDNR offers the following comments for your consideration in finalizing the reports.</p> <p>Background: The Draft PAAR SEA supplements the Final Environmental Impact Statement (FEIS) for the Savannah Harbor Expansion Project (SHEP). The purpose of the proposed action is to mitigate for impacts to two endangered sturgeon species, the Shortnose and Atlantic</p>	<p>With respect to 10% maximum slope for the rock ramp on the upstream side of the structure, the 2017 USFWS guidance identifies a 10% maximum slope for the entire length of a "pool-and-weir" fishway. It is not specifically referring to the upstream portion of any fishway. The proposed nature-like fishway will maintain a maximum 2% slope. Once animals have gotten past the final weir, we do not anticipate a ramp with a 10% slope will impede upstream migration. Likewise, we do not anticipate any impediment from a 10% slope as animals move downstream. Downstream migrating animals will be able to use the river's flow to their benefit, which should make moving up a gradually sloping ramp easier.</p> <p>We agree the downstream gravel bar is of great importance. We will conduct additional hydraulic modeling to consider potential impacts to the downstream gravel bar under different flow conditions.</p>

Sturgeon, by constructing a fish passage at the New Savannah Bluff Lock and Dam (NSBLD); thus providing access to habitat, such as the Augusta Shoals, for fish communities. The report documents the evaluation the Corps performed to identify how the previously authorized fish passage mitigation feature should be modified to meet the requirements of the Water Infrastructure Improvements for the Nation Act (WUN) and still meet the mitigation requirements of the SHEP.

The Draft PAAR SEA describes the No Action Alternative (NAA) and eleven structural alternatives to address the study objectives and constraints. The objectives and constraints include the ability to provide effective fish passage, recreational navigation, water supply, recreation, and flooding. Seven of the eleven alternatives were eliminated during the initial screening evaluation due to one or more factors that either did not meet the project objectives or created adverse impacts due to flooding, recreation, or water supply. The NAA and four alternatives were retained for further evaluation. In the process of examining the final array of alternatives, it was determined that one alternative (Alternative 2-6) could be refined to include varying weir heights. Therefore, the final array of alternatives included the NAA and seven action alternatives:

- NAA (the authorized plan in the 2012 SHEP FEIS);
- Alternative 1-1 (Repair lock wall Georgia side Fish Passage);
- Alternative 2-3 (Fixed Crest Weir, 500' Wide at Elevation 106.2' NAVD 88);

The preliminary results of that hydraulic modeling suggests movement of the gravel bar will be minimal. This supports findings of Jackson and Long (2011), which noted no significant change in the location of the gravel bar under flows as high as 30,000 cfs. The full-width, step-down arrangement of the rock ramp will also act to dissipate water velocities. This should further reduce the likelihood that the rock ramp will significantly affect the location of the downstream gravel bar. Additionally, limited habitat characterization was conducted near the Augusta Shoals by Dial Cordy and Associates in 2010. They reported habitat types that could support spawning at 77% (44 of 57) sites sampled.

Please see the response of Comment 41 for a discussion of differences/improvements of the proposed design at NSBLD and Lock and Dam#1 on the Cape Fear River.

- Alternative 2-6a (Fixed Crest Weir (500' Wide at Elevation 109.2' NAVD88) with Bench);
- Alternative 2-6b (Fixed Crest Weir (500' Wide at Elevation 106.2' NAVD88) with Bench);
- Alternative 2-6c (Fixed Crest Weir (500' Wide at Elevation 107.2' NAVD88) with Bench);
- Alternative 2-6d (The Proposed Action: Fixed Crest Weir (500' Wide at Elevation 108.2' NA VD88) with Bench); and
- Alternative 2-8 (Fixed Crest Weir (500' Wide at Elevation 109.2' NAVD88) with 2 Gates).

The seven newly proposed alternatives would change the design of the fish passage structure to either an off-channel rock ramp fish bypass structure on the Georgia side at NSBLD or a fullwidth in-channel rock ramp weir. The full width in-channel weir alternatives would involve deauthorizing the NSBLD; inactivating the lock and dam by cutting off the upper portion of the dam down to the sill and removing the lock structure; and constructing the previously mentioned in-channel rock weir to facilitate fish passage and retain the pool above the NSBLD. These are discussed in greater detail below.

NAA (the 2012 SHEP FEIS "authorized plan"): The no action alternative would include the design and recommendations in the previously authorized SHEP 2012 FEIS which includes construction of an off-channel fish passage structure on the South Carolina side and retains the existing NSBLD. The Corps has determined that this alternative can no longer be implemented

as originally planned because it is not consistent with the requirements of the WUN Act passed in 2016. SCDNR provided comments to the USFWS on this design in a letter dated February 17, 2016 in response to the Fish and Wildlife Coordination Act Report (FWCAR). The same concerns expressed then remain which are that the NAA design needs to ensure that no sturgeon (juvenile nor adult) will bypass the entrance channel of the fishway coming downstream. If this were to occur, it likely would result in sturgeon being trapped just upstream of the dam, passing through the gates at high velocities to the rocks below or being impinged. DNR also recommended that the proposed sheet pile guide wall at the upstream entrance be replaced with a rock wing wall consisting of large boulders and that the design be modified to include High Terrace resting pools to allow sturgeon to successfully move upstream. Without additional data and as currently proposed, this alternative is not acceptable.

Alternative 1-1 (Repair lock wall, Georgia side Fish Passage):
Alternative 1-1 proposes to repair the NSBLD gates and piers and the riverside lock wall and construct a 200' wide fish ramp structure through the lock chamber and into the adjacent area of the park on the Georgia side of the river. The fish passage structure would be constructed with boulders and stone sized following the same design that was previously approved for the bypass and have a 2% slope upstream to the weir crest, and a 10% slope upstream from the crest to the riverbed. SCDNR has concerns about the lack of sufficient information on hydraulics of Alternative 1-1 to accurately

quantify the upper design flow and conditions at the fishway entrance which may represent a constraint on the availability and effectiveness of fish passage conditions at the site. Because of the uncertainties regarding hydraulics at the bypass entrance and the possibility of certain conditions leading to delay or reduced amounts of fish passage of fish approaching on the South Carolina side of the river, SCDNR does not find this alternative acceptable.

Alternative 2-3 (Fixed Crest Weir, 500' Wide at Elevation 106.2' NA VD 88):
Alternative 2-3 proposes to remove the lock and dam, including the foundation, and construct a full-width (500') fixed crest weir with a rock ramp sloping upstream from the existing dam location. The fish passage structure would be constructed with boulders and stone sized following the same design that was previously approved for the bypass and have a 2% slope upstream to the weir crest, and a 10% slope upstream from the crest to the riverbed. SCDNR prefers the full-width in-channel fishway over the off-channel fishway design as it has a higher likelihood of passing diadromous fish without delay. SCDNR does believe that this alternative would allow migrating shad and herring to access upstream spawning and nursery habitat. However, as noted in a comment letter to the USFWS on the Draft FWCAR (February 17, 2016), SCDNR continues to have concerns about the relatively steep slope (10%) of the rock ramp on the upstream side of the proposed weir. In the Region 5 USFWS guidance document on fish passage design criteria¹, it is stated that the slope of a "pool-and-weir fishway" should be "less

than or equal to 10%," suggesting that a 10% slope is the maximum slope that would reliably allow successful fish passage. However, as noted in the guidance document, the design criteria provided are generic in nature and do not consider site-specific factors such as local hydrology or target species and life stage. The Corps should explain in greater detail the basis for their determination that a 10% slope on the upstream side of the weir would not impede fish passage, particularly for large demersal species such as Atlantic Sturgeon. If insufficient data are available to support this determination, a shallower slope more closely approximating the original upstream design slope of 3% should be implemented. SCDNR has concerns regarding erosional impacts of this design on the gravel bar that is downstream from the NSBLD. This bar provides known spawning habitat for several species, including the federally endangered Shortnose Sturgeon (*Acipenser brevirostrum*) and Atlantic Sturgeon (*Acipenser oxyrinchus*) and the rare Robust Redhorse (*Moxostoma robustum*), a federal At-Risk Species that is also state listed as endangered in Georgia. As noted in previous email exchanges between the Corps and USFWS, this gravel bar is formed from material that originated in a scour hole immediately downstream of the dam. There is concern that this alternative would alter flow velocities and direction below the dam, which could also impact this critical spawning habitat. Hydrodynamic modeling performed thus far does not specifically address the potential for erosion of the bar. Consequently, SCDNR strongly supports the

recommendation that additional hydrodynamic and sediment transport modeling be conducted to fully evaluate potential impacts to the gravel bar and to inform any needed modification of the selected alternative to minimize this potential. Additionally, SCDNR requests that an assessment be completed of habitat above the NSBLD to categorize the available habitats as either foraging, spawning, etc. SCDNR has strong concerns regarding the loss of known spawning habitat in exchange for unknown benefits. Without additional data and as currently proposed, this alternative is not acceptable.

Alternative 2-6a-d (Fixed Crest Weir, 500' Wide at various elevations described in refinements a-d above, with Bench - 2-6 d is Proposed Modification):
Alternative 2-6 proposes to remove the lock and dam, including the foundation, and construct a full-width (500') fixed crest weir with a rock ramp sloping upstream from the existing dam location and excavate a 275' floodway bench on the Georgia side of the river. The fish passage structure would be constructed with boulders and stone sized following the same design that was previously approved for the bypass and have a 2% slope upstream to the weir crest, and a 10% slope upstream from the crest to the riverbed. Because the various refinements to Alternative 2-6 differ in elevation and present an identical fish passage design, SCDNR is providing comment on Alternative 2-6 as one entity and not addressing the specific refinements a-d.

The incorporation of the floodplain bench in Alternative 2-6 may have the ancillary benefit of

providing enhanced passage along the bankside provided that the bench is grass lined to prevent erosion and additional sediment moving into the river system. Although, there may be some concern with fish being stranded during large flooding events as was witnessed in the most recent flooding that occurred in the Cape Fear River, NC where several sturgeon were found dead on rocks when floodwaters receded. It is unclear whether these mortalities occurred from stranding or lowered dissolved oxygen levels. SCDNR also shares the concern of the USFWS (DFWCAR, 2018) that arch rapid type designs, such as presented for this alternative, should be carefully designed to accommodate target diadromous species. SCDNR still has concern regarding the overall design and its efficiency in passing benthic species (specifically sturgeon and robust redhorse). The rock arch ramp located at Lock and Dam #1 on the Cape Fear River, NC has been in operation for several years and has successfully passed alosids, but has shown difficulty passing sturgeon and other benthic species. SCDNR acknowledges many modifications will be applied to the NSBLD design, based off of "lessons learned" from the Cape Fear design, but a level of uncertainty still remains concerning the overall level of effectiveness in passing some target species.

SCDNR continues to have concerns regarding erosional impacts of this design alternative, as previously mentioned on Alternative 2-3, to the gravel bar that is downstream of the NSBLD. This bar provides known spawning habitat for several species including the federally protected

sturgeon. Hydrodynamic and sediment transport modeling need to be conducted to fully evaluate potential impacts to the gravel bar, as well as a habitat assessment to categorize available habitats as either foraging, spawning, etc for sturgeon. Without additional data and as currently proposed, this alternative is not acceptable. Alternative 2-8 (Fixed Crest Weir, 500' Wide at Elevation 109.2' NA VD88, with 2 Gates): Alternative 2-8 proposes to remove the lock and dam, including the foundation, construct a fullwidth (500') fixed crest weir with a rock ramp sloping upstream from the existing dam location and construct an active flood passage structure consisting of two 50' gates on the Georgia side of the river. The fish passage structure would be constructed with boulders and stone sized following the same design that was previously approved for the bypass and have a 2% slope upstream to the weir crest, and a 10% slope upstream from the crest to the riverbed. SCDNR is concerned that the flood gate structures present new hazards and complications to fish passage and because of the potential for entrapment of sturgeon in the gated bypass does not find this alternative acceptable.

Comments and Conclusions:
1. The SCDNR remains concerned regarding the possible erosional impact of any modified fishway design on the gravel bar that is downstream from the NSBLD. This bar provides important spawning habitat for several species, including the federally endangered Shortnose Sturgeon (*Acipenser brevirostrum*) and Atlantic Sturgeon (*Acipenser*

oxyrinchus) and the rare Robust Redhorse (*Moxostoma robustum*), a federal At-Risk Species that is also state listed as endangered in Georgia. Additionally, the gravel bar is located within NMFS specific occupied areas designated as critical habitat for the South Atlantic Distinct Population Segment (DPS) of Atlantic Sturgeon² • Spawning behavior has been documented at this location for both Atlantic and Shortnose Sturgeon³ and young of the year indices for abundance indicates annual recruitment leading to robust population estimates for both species⁴ •⁵ As noted in previous email exchanges between the Corps and USFWS, this gravel bar is formed from material that originated in a scour hole immediately downstream of the dam. There is concern that several of the proposed alternatives would alter flow velocities and direction below the dam, which could also impact this critical spawning habitat. Hydrodynamic modeling performed thus far does not specifically address the potential for erosion of the bar. Consequently, SCDNR strongly recommends that additional hydrodynamic and sediment transport modeling be conducted to fully evaluate potential impacts to the gravel bar and to inform any needed modification of the selected alternative to minimize this potential. The current conditions downstream of NSBLD provide habitat supporting successful reproduction for both Shortnose and Atlantic Sturgeon; therefore, SCDNR has strong concerns about the continued availability and viability of this critical habitat. SCDNR finds that further

evaluation of any selected alternative should be conclusive in affirming that negative impacts to the existing gravel spawning bar would not occur and that by removing or altering the NSBLD that sturgeon would have access to additional spawning habitat. Any selected alternative must assure that it is compatible with the continued availability and viability of the gravel spawning bar below the NSBLD that is designated critical habitat by NMFS.

2. SCDNR requests that an assessment be completed of habitat above the NSBLD to categorize the available habitats as either foraging, spawning, etc. SCDNR has strong concerns regarding the loss of known spawning habitat in exchange for unknown benefits. Because of these uncertainties of net gains versus potential loss of sturgeon habitat and spawning grounds and the effectiveness of fish passage designs for passing both species of sturgeon, SCDNR continues to have concerns with any of the proposed alternatives. As stewards of South Carolina's natural resources, SCDNR needs assurance that the benefits of the selected alternative to all migratory fish species will outweigh any potential impacts incurred as a result of construction of a fish passage structure at NSBLD.

Based on the information provided to date, SCDNR finds that additional information is needed to fully evaluate the recommended plan and to address the concerns stated above. The SCDNR requests the opportunity to review and comment on all selected plan design documents at each

		<p>stage of the design process. Until these comments are adequately addressed, SCDNR cannot concur with the Draft Finding of No Significant Impact for the Proposed Action.</p> <p>The SCDNR appreciates the opportunity to comment on the PAAR SEA for this project and looks forward to further coordinating with the Corps and other federal and state resource agencies on the design of an acceptable mitigation feature at the NSBLD.</p>	
190.	Huxely Nixon, Augusta, Georgia	<p>I am a resident of Augusta, Georgia and members of my family have made Augusta home since 1864. The ability to safely ford the Savannah River just north of downtown and its navigability downstream coupled with its canal system made it major trading crossroads for settlers in the region to get their goods to national and international markets through Savannah. The River was the reason for Augusta's as well as Savannah's birth and it will remain indispensable to both communities in the future!</p> <p>Since fish are the only living things that seem to have legal standing, I feel the engineers are ignoring the potential horrible cost to human life and property should a permanent rock barrier encounter a catastrophic flood occurrence. Ask the farmers in Nebraska and Iowa that are suffering their second 100-year flood in the past eight years.</p> <p>There MUST be a solution that is fair to both Savannah and AUGUSTA/NORTH AUGUSTA! The ideas for keeping the dam seem to be an excellent, common sense alternative to the Corps' solution that lowers the pool permanently to a level that will cause irreparable harm to our Communities in Augusta and North Augusta (Remember the Corps' experiment of February 2019 to show how a minimally lowering of the POOL would affect the River - what if their calculations are also wrong about the</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>

		future flooding potential)? Let's allow for a solution that takes human life into account AND will provide better FLOOD CONTROL, spawning grounds for the affected FISH and better navigation in the Port of Savannah. Let us have Safety, Savannah and Sturgeon.	
191.	Clay Boardman	Agrees with Huxely Nixon comment above.	Thank you for your comment. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.
192.	Clifton Rice, North Augusta, South Carolina	I am a resident of North Augusta well away from the river and have no direct financial interest in this matter. I do, however, have a considerable interest in the quality of life and general financial interests of the people of the CSRA. The River is our signature geographical feature. The current level has been the basis for most all the development along the river in the downtown Augusta and North Augusta areas. Lowering the level several feet, as is the current Corps proposal, would severely impact this feature with regards to its aesthetics and functionality. Could we get over it. Certainly. However, it would be tantamount to cutting down all the	Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional

		<p>Azalea bushes at Augusta National. I personally have no issues with the rock weir idea per se. I think it would be more attractive than the current Lock and Dam. The design, though, should:</p> <ol style="list-style-type: none"> 1. Maintain the current pool. 2. Provide an active feature to increase the flow during high rain events, not a passive one. 3. It would also be preferable to have a lock, but I don't see that as a critical feature. <p>These important items would increase the costs, both for construction, operation and maintenance. In my mind, they are necessary.</p>	<p>spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>
193.	Ferris Broxton	<p>Dear Project Delivery Team; Flood frequency flows in Table 6 on page A-16 of Draft EA Appendix A diverge dramatically from that reported in the "PMF Analysis for Savannah River Multipurpose Projects" issued in May of 2016. Both values cannot be accurate, indicating that USACE must correct one. In addition, USACE should consider comments in the last paragraph regarding the USGS 1990 physical flows study and the UIF artificial flows method since flooding helps determine alternative selection based on flow rates. The PMF Analysis report on page 7 equates the Dec 2015 series of storm events to roughly a 25-year event or a 4% chance of exceedance in any given year for the maximum Augusta flow of 54,000 cfs. My underlines highlight the relevant text. Fish Passage Draft EA Table 6 shows 54,000 cfs falling between the 5 and 10 year events for an interpolated 7.7 year event or 13% chance of exceedance in any given year. USACE has effectively advised the public to expect an event like the Dec 2015 storm on the average of only every 25 years in the PMF report but every 7.7 years in the Fish Passage Draft EA. Table 14 from page 82 of the 1990 USGS Flood Frequency of The Savannah River report lists 105,000 cfs as the regulated 4 percent chance of</p>	<p>Thank you for your comment. A storm event with a 4 percent annual chance exceedance does not necessarily correspond to a flow of the same chance exceedance, especially in a regulated system like the Upper Savannah River basin. The 2015 storm and it's characterization as a "25-year" storm is based on the magnitude of the rainfall upstream of the reservoirs. Reservoir releases and the local inflows between JST and Augusta combined to produce a peak flow of 54,000cfs. The confounding factors of reservoir releases and tributary inflow make it difficult to equate a 25-year storm upstream of the reservoirs to a 25-year flow downstream in Augusta.</p> <p>A more direct way to determine return interval flows at Augusta is to examine the historical record of flows there through standard statistical analysis (see <i>Guidelines For Determining Flood Flow Frequency Bulletin 17B</i>). A 17B analysis was completed for the flow record at Augusta, and the flow values and corresponding return intervals presented in Table 6 of Appendix A to the draft report were found to be in reasonable agreement with the results of the 17B analysis. The 1990 report referenced in your comment was revised in 1994, as described in the supporting documentation for the effective FIS. Additionally, the 1990 report used data through 1985; an additional 31 years of peak flow data were available to determine return interval flows for the current effort. To maintain consistency with previously published work, the values in Table 6 were used for this project.</p>

		<p>exceedance event and 51,500 cfs as the regulated 20% chance of exceedance event. The much higher flow rates for the discussion frequencies provoke concern that the defective Unimpaired Flow Data Extension (UIF) may have informed the Fish Passage EA, although including droughts since 1990 could have lowered flows somewhat. I call the UIF defective because the method assumes the same rate of runoff independent of month or temperature, and provides only limited ability to adjust outputs for extremely saturated or extremely dry ground. Rather than historical inflows, UIF estimates historical rainfall and then projects runoff rates using crude factors.</p> <p>FLOOD FREQUENCY FLOW SUMMARY</p> <p>Frequency Fish Passage</p> <table border="0"> <tr> <td>PMF Study</td> <td>USGS</td> <td>1990 Study</td> </tr> <tr> <td>50%</td> <td>33,000 cfs</td> <td>- 34,500 cfs</td> </tr> <tr> <td>20%</td> <td>41,000 cfs</td> <td>- 51,500 cfs</td> </tr> <tr> <td>10%</td> <td>59,800 cfs</td> <td>- 69,000 cfs</td> </tr> <tr> <td>4%</td> <td>80,000 cfs</td> <td>54,000 cfs 105,000 cfs</td> </tr> <tr> <td>2%</td> <td>103,000 cfs</td> <td>- 140,000 cfs</td> </tr> <tr> <td>1%</td> <td>138,000 cfs</td> <td>- 180,000 cfs</td> </tr> </table>	PMF Study	USGS	1990 Study	50%	33,000 cfs	- 34,500 cfs	20%	41,000 cfs	- 51,500 cfs	10%	59,800 cfs	- 69,000 cfs	4%	80,000 cfs	54,000 cfs 105,000 cfs	2%	103,000 cfs	- 140,000 cfs	1%	138,000 cfs	- 180,000 cfs	<p>Perhaps more to the point, this project evaluated a wide range of flows and formulated alternatives to avoid induced flood damages at any flow level, as compared to existing conditions. This is not a flow-frequency study nor is it meant to update the flows and water surface elevations for insurance purposes. The use of FEMA defined return interval flows, as described in the effective FIS, was meant to simplify communication of potential impacts during flood events, using flow levels that have been widely distributed.</p>
PMF Study	USGS	1990 Study																						
50%	33,000 cfs	- 34,500 cfs																						
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1%	138,000 cfs	- 180,000 cfs																						
194.	Ronald and Susan Wade	<p>The water level needs stay the way it is. The concern about the fish is crazy. It has been like this for so long and they can't get above Stephens Creek Dam. If the concern is that concerning then take all the Dams on the river down. That would be just as crazy as taking out the Lock and Dam.</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by</p>																					

			<p>selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure. Rehabilitating the New Savannah Bluff Lock and Dam is more costly than other alternatives, fails to allow endangered and threatened species to pass the location and it no longer serves the purpose of its construction – commercial navigation between Augusta and Savannah</p>
195.	<p>Hap Harris, Augusta, Georgia</p>	<p>I am greatly concerned with the decision which appears to be in the works for replacing the Lock & Dam on the Savannah River, south of Augusta. The fact both Augusta and North Augusta's economies will suffer significant damage with the lowered "pool" of the river is so obvious; however, the part which truly is confusing is for your plan is so very much more expensive than simply repairing the dam and installing the "fish ladder". Based upon the facts given to Augusta/North Augusta citizens, the Corps is telling us the Short Nose Sturgeon has to travel several miles north of the dam to reach the rapids for spawning. The dam was constructed around 1937 and since that time the recorded "catch" of Sturgeon along our river area has been very few. I have been told no recorded catch since the 1960's. If the Savannah harbor is being deepened by approximately 2 to 3 feet and the fear of salt water working its way "up the river" - - against the current I might add, just how far does the saltwater come up? And for that matter, where have the Sturgeon been spawning all these many years- - not in the Augusta/North Augusta river area, that's for sure. I asked one of the Corps representatives at the "Marriot Meeting" in March if it would not be less expensive for the Corps to create a "rapids" area down-stream--- you know, ask the Sturgeon to swim a</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure. Rehabilitating the New Savannah Bluff Lock and Dam is more costly than other alternatives, fails to allow endangered and threatened species to pass the location and it no longer serves the purpose of its construction – commercial navigation between Augusta and Savannah</p>

handful of river miles verses the 180 + river miles to come all the way here- - he had no answer. In fact the look in his eyes was one of "gee, never thought of that".

Would the Corps consider the cost of repairing the dam and fish ladder and then turn it over to the cities of Augusta and North Augusta and allow them to sock money away, via their respective "Splost" fund raisers and use the money for maintaining the dam? We would continue to have what we have today and we would be better able to control potential flooding with a lock and dam- - and the flooding will come sooner or later. The truth is the lowered river level will eliminate numerous river activities- - boat races, rowing regattas, Iron-Man swimming event, pulling down property values along the river, "mud locking" docks and boats, and more than likely increasing the insect population in and around the river; the list goes on and on.

No one wants the Sturgeon to "go away" but the truth is they have been spawning somewhere and it's a pretty good bet they will continue to do so. It comes down to this, all of Georgia is glad the Savannah Ports will increase business with the deepening of the harbor for the larger container ships, which will benefit all of Georgia, but whereas Savannah's economy will receive a shot in the arm, the Augusta/North Augusta area will suffer from an amputated arm- -it is just that simple. Once the dam is removed and the rock weir is installed there will be no turning back. This is not like having a major plant closing and then having to wait until someone comes along to redo the plant and bring it back to life. Once the dam is gone there will be no recovery. The beautiful "middle Savannah" will no longer be the beautiful middle Savannah- -it will become the mud flats of Augusta/North Augusta. I see absolutely no benefit to your plan of a rock weir verses repairing the dam and installing the fish ladder. You are

		<p>doing what is right for Savannah; we are only asking you to do what is right for Augusta/North Augusta. Thank you for your time,</p>	
196.	<p>Anthony Waters, Aiken, South Carolina</p>	<p>I would like to express my disapproval of the Corps of Engineers rock weir proposal for replacing the existing lock and dam. I believe that it will make the river unusable from the weir to the rapids. As a boater I have enjoyed using that stretch of river frequently and would be very unhappy with the proposed solution. Additionally I feel it would create a safety hazard for those with property on the river as banks become unstable. Please refurbish the existing lock and dam and find another solution for the fish. I don't believe that the fish are a valid concern and would rather see the river maintained for those that live in the area.</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure. Rehabilitating the New Savannah Bluff Lock and Dam is more costly than other alternatives, fails to allow endangered and threatened species to pass the location and it no longer serves the purpose of its construction – commercial navigation between Augusta and Savannah</p>
197.	<p>Jeff Siverhus</p>	<p>I am writing to voice my opinion and concerns for the future of our community. The CSRA is experiencing economic growth on riverfront that is unparalleled. It is vital to future growth we maintain current pool levels that have existed for over 80 years. The only way to ensure this is by repairing L&D and creating a fish passage for sturgeon and other fish.</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by</p>

			selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure. Rehabilitating the New Savannah Bluff Lock and Dam is more costly than other alternatives, fails to allow endangered and threatened species to pass the location and it no longer serves the purpose of its construction – commercial navigation between Augusta and Savannah
198.	Stephen Renas	I am writing in regards to the level of the Savannah River at Augusta GA. With the development of activities on the river, both in GA and SC we need to maintain the levels at their current positions. Please let me know what I can do to make this happen. Thank you very much	Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.
199.	Sonny Gay Jr. Augusta, Georgia	I have attended the open meetings and heard all proposals on the Savannah River Lock and Dam. The Corps proposal 1-1 is the only acceptable alternative for Augusta and North Augusta residents. All other options will result in flooding of private property and the lock and dam park. I also understand that the Corps position is that the Lock and Dam will not be repaired. Please be advised that this position is unacceptable and that we want further	Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the

		consideration to be given to 1-1 by congress before any furthering action is taken by the corps	shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.
200.	Ken Kehr	Don't lower our water levels!	Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.
201.	Thomas Norris, Augusta, Georgia	It is our concern here in Augusta GA that you are not aware of the detrimental impact the rock weir fish passage will have on our Savannah River level in the Augusta GA area. Homeowners will be hit the hardest with reduced property values. Recreation will also suffer from boating, fishing, kayaking, and all the trickle down effects. Please work to protect our interest. It is our hope that some other solution may be reached that can accomplish desired results that will not result in damage to Augusta and its residents.	Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of

			<p>the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>
202.	Kenneth McDowell, North Augusta, South Carolina	<p>I am sure that you have received numerous comments regarding the proposed Corps plan to remove the current lock and dam and replace it with a rock weir and fish ladder. In short, my family and I are against the currently proposed corps plan for a rock weir and fish passage that results in a lowering of the Savannah river of over 2 feet. I have served on the North Augusta City Council for over 20 years. During that time one of my main goals was to ensure that the City achieved access to the river for the citizens of North Augusta. We did this by planning, budgeting and purchasing riverfront property and then establishing a planned development that included public access. Hundreds of millions of dollars of public/private funds have resulted in a vibrant community with great growth potential. Unfortunately, the corps plan will leave us with more of a mud flat than a river. Our plans never projected such a scenario as the Corps proposal.</p> <p>While the Corps may feel that their hands are tied by the 'requirements' of the endangered species act and a quick political stunt that decommissioned the lock and dam, none of that considers the negative impact that the lowering will have from an aesthetic point, and just as importantly, an economic point for both the City of North Augusta and Augusta. Can anyone even prove that the sturgeon are 'endangered'? Has anyone bothered to survey the actual sturgeon population in the last 10 years? Why can't the Lock and dam</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>

		<p>be preserved and add a concrete fish 'ramp' rather than a rock ladder? Why can't the lock and dam be repaired? Remember, the Corps CHOSE not to maintain the lock and dam and that is the reason repairs are needed. The argument that the lock and dam does not serve as flood control is blatantly false as it most certainly is used for flow control, i.e. flood control. Thank you for allowing our comments and we hope that the decision will be made in a manner that protects and preserves the economic vitality that the Savannah River provides to our two cities.</p>	
203.	Gynn Paschall, Beach Island, South Carolina	<p>I very strongly oppose the plan to build a weir in the Savannah river. Been here within one mile of the river, love to fish above and below. The lock and dam. Would lose much by river being lowered...AND someday, BARGE TRAFFIC COULD COME BACK TO THIS AREA !!</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure. Rehabilitating the New Savannah Bluff Lock and Dam is more costly than other alternatives, fails to allow endangered and threatened species to pass the location and it no longer serves the purpose of its construction – commercial navigation between Augusta and Savannah</p>
204.	Ruth Hood, Augusta, Georgia	<p>I have lived in Augusta, GA since 1982. We have loved having the Savannah River to use for various reasons. My family enjoyed walking along the riverwalk by the river just to</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of</p>

watch the water. It was fun, and it kept our family talking about everyday things. When my dad was alive, he used to go out to the Lock & Dam to fish. He had so much fun fishing, and when his grandchildren came to visit, he would take them there and taught them how to fish, too. He even had his picture in the paper because of the fish he caught. My family would go out to the Lock & Dam and just watch the water go over the dam. We even happened to be out there when a boat came through the lock. It attracted a lot of people that were at the lock just having fun. When the army did the water draw down, the beautiful river turned into a mud pit. The docks and some of the boats were stuck feet from the water, and mired in the mud. The river looked disgusting. We were here when the army did a draw down before, and this time was no better than the last time. The city tries to schedule events that take place in the water, but if you destroy the Lock & Dam, most of those will have to be cancelled. That means millions of dollars that the city, and the citizens will lose. I realize the Lock & Dam was built many years ago, but it was built to help control the flow of water, and help with flooding problems. If you destroy the Lock & Dam, we will have no way to control our flooding. Since I have been here, we have had quite a few times when we received a lot of rain, and without the Lock & Dam we would have had a lot worse flooding in the city than what we had. I know the Lock & Dam needs to be repaired, but I feel that repairing it would be a lot better for Augusta than destroying the Dam. You could still put a section on one side for the fish that need to go upstream, but just replace the Lock & Dam with a new one. The city would still be able to continue on with the improvements to downtown by the river, which will help the city, and also be able to protect Augusta from flooding. Since millions need to be spent on the Lock and Dam either way, I feel that that money could be

the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure. Rehabilitating the New Savannah Bluff Lock and Dam is more costly than other alternatives, fails to allow endangered and threatened species to pass the location and it no longer serves the purpose of its construction – commercial navigation between Augusta and Savannah

		<p>better spent on a replacement Lock and Dam with a fish passage on one side. I hope you will consider this. Everyone I have talked to, both on the GA side and on the SC side of the river are very opposed to the destruction of the Lock & Dam. The general population feels that the money would be better spent on keeping the Lock & Dam where it is, and not destroying downtown Augusta.</p>	
205.	<p>Comments of Save the Middle Savannah River on the Draft Integrated Post Authorization Analysis Report and Supplemental Environmental Assessment, Fish Passage at New Savannah Bluff Lock and Dam, and Draft Finding of No Significant Impact, prepared by the US Army Corps of Engineers, Savannah District, dated February 2019 Summary-Note, 108 similar letters were received</p>	<p>Save the Middle Savannah River (Save the River) appreciates the opportunity to submit the following comments on the Draft Integrated Post Authorization Analysis Report and Supplemental Environmental Assessment, Fish Passage at New Savannah Bluff Lock and Dam, and Draft Finding of No Significant Impact, prepared by the U.S. Army Corps of Engineers, Savannah District, dated February 2019 (the "Draft Report"). We submit these comments consistent with the public notice and within the comment period that expires on April 16, 2019, at 4 pm.</p> <p>For all of the reasons outlined in these comments, the proposed alternative of 2-6d (the Proposed Rock Weir) does not meet the legal requirements that Congress included in the Water Infrastructure Improvements for the Nation Act of 2016 (WIIN Act). Furthermore, the Proposed Rock Weir would impose unnecessary, unlawful, arbitrary and unreasonable economic, human health, safety and environmental risks and burdens on the citizens, businesses and municipalities of the Central Savannah River Area (CSRA), all in contradiction to applicable laws, policies and good practices. Additionally, as detailed below, the Draft Report (a) presents woefully inaccurate engineering analysis and incomplete cost information, environmental evaluation, and impacts review, (b) contradicts established and important facts</p>	<p>Thank you for your comments. More detailed responses to each comment are contained below.</p>

relevant to these issues, and (c) ignores the overwhelming preference of the hundreds of thousands of local community members and elected representatives, all of which issues the government must address in compliance with applicable laws and professional standards. Save the River strongly opposes the findings of the Draft Report and demands that the U.S. Army Corps of Engineers withdraw the Draft Report and proceed with development of a lawful solution to the fish passage requirements through a coordinated stakeholder process.

The common sense solution is clear and achievable – repair of the Lock and Dam and construction of a modified Fish Bypass or other fish passage through more reliable mechanisms based on sound science and engineering. This cost-effective and workable approach will allow the Savannah Harbor Expansion Project (SHEP) to stay on schedule without sacrificing the vital interests of the CSRA. Trading the prosperity of the entire CSRA region for that of the Ports Authority, as currently proposed, will not achieve these goals.

In addition to representing the interests of the citizens of the CSRA, as described in Section I below, we believe that the comments and concerns of Save the River are shared by our elected representatives in the U.S. House of Representatives and by both City of Augusta and the City of North Augusta, as well as by many additional elected officials and community organizations.

1. Statement of Interest

The Savannah River pool maintained by the Lock and Dam is a crown jewel of the CSRA community. The steady pool provides critical water supply for municipalities serving several hundred thousand residents and for several of the CSRA's largest industries. Additionally, the vibrant and thriving

Metro Augusta riverfront, including the River Walk and new community assets like the SRP stadium, depend entirely upon the steady pool at current depths for its riverfront paths, marinas, boat races, and Ironman events. These developments and events, on top of the daily public use of the pool land and its shoreline, draw enormous economic growth to the area, and these pool-dependent events, such as the Augusta Half-Ironman, Augusta Southern Nationals Drag Boat races, and the Rowing regattas, generate millions of dollars of stimulus to the economies of Georgia and South Carolina. Boating and Ironman events alone draw over 5,000 participants and 44,000 spectators each year that, alone, stimulate upwards of \$50 millions of dollars in economic activity in the region.

In addition to the pool, the Lock and Dam also provides critical pool level control and water reregulation in times of high flow, such as the recent January 2016 high-water events. (Draft Report at 20, 2012 SHEP Environmental Impact Statement (EIS) at 74, Draft Report at 20.) The Lock & Dam consists of two major components: a navigation lock to accommodate boat traffic, and five vertical-lift spillway gates to regulate the upstream stage of the river at various ordinary flow rates. The two outer gates are of the overflow type, and the middle three gates are of the non-overflow type. All of the gates are adjustable and are controlled remotely at J. Strom Thurmond dam. The Corps operates the gates between 6 and 18 times a week, demonstrating the key importance of these gates to routine water pool regulation. Additionally, the Corps “raises the gates during high flows to reduce the backwater effects of the dam on the upstream pool and its adjacent development.” (SHEP EIS at 71). As further described in the Draft Report, “[r]aising the gates has the

primary purpose of increasing the flow capacity of the river at that location, which subsequently reduces the flood heights upstream.” (Draft Report at 52; see also Draft Report at 53.) The Lock and Dam has successfully managed and maintained the River pool for the CSRA, and mitigated in-river and backwater flood risks to our area, for over 80 years. Members[1] of the Save the River have direct and compelling interests in preserving these vital functions of the Lock and Dam. Our members include municipalities, landowners, business owners, farmers, outdoor enthusiasts and other CSRA community members (and federal taxpayers) that rely on the pool for water supply, safe navigation, recreation, viewscape, and commercial activities, all of whom would be negatively impacted by the Proposed Rock Weir.

Conclusions and Path Forward:
Fortunately, there is a common sense solution – reauthorization and repair of the Lock and Dam and construction of a modified structure such as a fish lift or modest-sized fish bypass to pass the sturgeon – that addresses all of the concerns outlined in these comments and protects the vital interests of both the CSRA and those of the SHEP project.
Once again, Save the Middle Savannah River appreciates the opportunity to present these comments. Given the short review period and the lack of supporting documentation provided in the USACE’s administrative record, the members of Save the River reserve the right to provide further comment and raise additional issues regarding the Draft Report. Furthermore, Save the River looks forward to the Corps’ specific feedback on each comment in accordance with NEPA and the APA. In order to fully vet the alternatives, the undersigned request that the Corps develop a stakeholder working group to vet fish passage alternatives and to develop a resolution that meets

		<p>the needs of the community together with the needs of the GPA and the USACE. Additionally, we each request to be added to the Corps' public notice recipient list for all actions related to the mitigation project.</p> <p>We look forward to further involvement in this important project. If you have any questions, you are welcome to contact Save the Middle Savannah River at diana@simkinsland.comcastbiz.net.</p>	
206.	<p>Save Middle Savannah's 8 comments- Note, 108 similar letters were received</p>	<p>Comment 1. The Proposed Rock Weir violates the letter, intent and spirit of the WIIN Act by lowering the Savannah River pool in the Augusta area.</p> <p>The NSBLD maintains the river pool at a virtually constant level, with only minor fluctuation and on average at a 114.5' (NAVD 1988) [115.4 (1929)] pool level for the Savannah River at downtown Augusta location.[2] It is this pool that serves as the drinking water source to hundreds of thousands of residents and to some of the Georgia's and South Carolina's large industrial facilities. The pool provides a safe water depth for both routine recreational activities, a constant on the river every day of the year, as well as for boat races, regattas, triathlons, and other economic engines based on recreation. The river pool also provides a beautiful backdrop to the downtown environment and to the pathways that meander its shores and allow local residents access to the natural beauty of the river pool, as well as for the many residential developments that line its shores.</p> <p>For these very reasons, the WIIN Act protected the pool above all else, making preservation of the pool "as in existence on the date of the Act" a key requirement of any project modification selected by the Secretary. (WIIN Act, §1319(c)(1)(A)(i)(I) and (ii)(I)).</p>	<p>Thank you for your comments. The USACE Savannah District's must follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality, according to Implementation Guidance, of the upstream pool of the New Savannah Bluff Lock and Dam for the purpose of recreational navigation and water supply.</p> <p>The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with the best chance to get sturgeon past the lock and dam to additional spawning habitat.</p> <p>Based on the simulation, the recreational navigation channel would be at least 5 feet in depth throughout the length of the NSBLD pool. According to Safe Water Sports and the International Waterskiing and Waterboard Federation, the recommended minimum water depths for water skiing, waterboarding, and jet skiing is 5 feet (1.5m). These water sports are not expected to be negatively impacted because water depths would be safe.</p> <p>In addition, any dock constructed in Section 10 navigable waters requires a permit. The permit states that "The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure ... the permittee will be required, upon due notice from the Corps of</p>

Because the Proposed Rock Weir lowers the River pool, on average, by over 3 feet, this alternative fails to meet the WIIN Act and thus the Secretary is prohibited by law from selecting this alternative. The USACE must withdraw the Draft Report and work with the community and elected officials to develop a new solution to the fish passage requirement.

As local government and Congressional opposition to the Corps' Proposed Rock Weir grew in recent months, USACE presented a new interpretation of the Act: "functionality". Congress did not use this word in the Act; to the contrary, the letter and intent of the Act was to keep the pool at the level that existed on the date of the Act. We believe the USACE developed this new "interpretation" of the Act in the expectation that it could on this ground defend the profound and devastating drop in the River pool currently proposed. However, even under the Corps' twisted and obfuscated (and unlawful) interpretation of the WIIN Act, the Proposed Rock Weir still fails. The USACE's February 2019 simulation of the River pool under the Proposed Rock Weir scenario demonstrated that the lowering threatened water supplies, impeded navigation, and severely impacted recreation by exposing hazards and by creating large mud flats. The impacts were so severe and debilitating that the Corps terminated the simulation a week early amid the sounds of alarm in the community.[3] The simulation[4] proved that even by this unfounded "functionality" test, the Proposed Rock Weir fails to meet the WIIN Act and USACE is prohibited from selecting that option under the WIIN Act.

For all of these reasons, the Proposed Rock Weir violates the WIIN Act and the USACE must develop a new alternative, in coordination with impacted communities and elected

Engineers, to remove, relocate, or alter the structural work...without expense to the United States. No claim shall be made against the United States on account of such removal or alteration."

With regards to ESA compliance, please see the responses to comment number 41 and 138 for discussion of navigational locks and fish lifts as tools for passing sturgeon.

A NEPA document is required for any activity that expends federal funds.. An EA determines whether or not the federal action has the potential to cause significant effects. Federal agencies prepare an EIS if a proposed major federal action is determine to significantly affect the quality of the human environment. USACE Savannah District has assessed the potential environmental impacts of the proposed action. Based on this assessment, a review of the comments made on the Environmental Assessment, and implementation of the environmental design commitments described in the EA and listed above, USACE Savannah District concludes that the proposed action will not result in a significant impact on the human environment. Therefore, an Environmental Impact Statement will not be prepared.

officials, to address the fish passage requirements.

Comment 2. The USACE relies upon arbitrary and unsubstantiated cost estimates in selecting the Proposed Rock Weir and presents cost estimates that contradict decades of project cost estimates and that are so unreliable, the estimates continued to change by orders of magnitude during the public comment period.

The Corps spent almost two decades developing and analyzing the fish mitigation options associated with the harbor deepening. This 20-year process included a detailed engineering and cost evaluation of fish passage options in the central Savannah River. As a result of this lengthy and thorough evaluation, the Corps concluded in the 2012 SHEP EIS that construction of a Fish Bypass (called an "off-channel rock ramp") was, by orders of magnitude, a far more favorable solution. The Corps summarized its analysis in the following table:

(SHEP EIS at 5-120.) Because repair of the Lock and Dam is essential to long-term success of the Fish Bypass, the overall cost of the selected remedy for a combined Fish Bypass/Dam rehabilitation estimate was \$53 million, which includes \$21 million in estimated rehabilitation costs. As presented above, the USACE estimated in this same report, and based on the same 20 years of engineering assessment, that the Proposed Rock Weir (at the time referred to as the "Full River Rock Ramp,") would cost \$100 million.

The obvious choice between the \$53 million Fish Bypass (the project selected in the 2012 SHEP EIS) and the \$100 million WIIN Act alternatives was clear. The weir alternatives in the WIIN Act are not

cost effective and would expose U.S. taxpayers to an unnecessary financial burden. On cost alone, the Proposed Rock Weir alternative selected by the Corps is far inferior to the Fish Bypass. [5]

Notwithstanding this history, the USACE now takes the position that the Proposed Rock Weir will cost less than the Fish Bypass.[6] In a mere two pages, the USACE explains that the Proposed Rock Weir will cost \$92 million (remarkably consistent with the 2012 estimate) and concludes, with no meaningful explanation, that the Fish Bypass alternative is now estimated to cost \$140 million, more than three times the EIS estimate (developed over 20 years) of \$50 million. This conclusion, presented in the sparsest of terms in the Draft Report, is supported by two additional pages of calculations presented in Exhibit B, which relate solely to the Proposed Rock Weir and tell the public nothing about why the costs for the Fish Bypass suddenly grew by \$100 million. In sum, the USACE is proposing a \$100 million project on the arbitrary basis of, apparently, four pages of information presented to the public. This level of transparency and inconsistency defies the requirements of the Administrative Procedures Act, 5 USC section §500 et seq, and creates a justifiable suspicion of the Corps' estimates and their motives for same.

Furthermore, the Corps appears to impose a "project replacement" cost on the Fish Bypass alternative, but provides no basis for this type of assessment and refers the stakeholders to no guidance or law that dictates this outcome. The USACE also does not explain whether the Proposed Rock Weir estimates include a complete project replacement in the same life cycle cost analysis. Reasonable cost engineering standards recognize project life estimating is limited by the

unknowns of project changes – amendments to laws and regulations, updates to scientific understanding, and improvements in engineering – all of which mean that in thirty years, the project may look very different.[7] Assuming costs to “rebuild” the project is simply arbitrary and unreasonable and dramatically skews the analysis against the Fish Bypass. Without this assumption, the cost estimate for the Fish Bypass would more closely reflect the 2012 EIS estimate, much as the Proposed Rock Weir does. Additionally, the USACE states in the Draft Report that the “estimated design life” and other long-term O&M features (which ultimately drive any cost difference with the Fish Bypass) of the Proposed Rock Weir “must be determined at a later design stage.” (Draft Report at 121-122.) Thus, the Corps is not even comparing the full range of costs in the Draft Report.

Additionally, and remarkably, the Corps again modified its cost estimates in the middle of the public comment period, without any extension to period and without any apparent revision to the Draft Report or supplement to the administrative record in support therefor (other than two blog posts on their website[8]). In fact, in the case of the Fish Bypass, the USACE cost estimate more than doubled in the six weeks between the public notice and blog post, rising from \$140 million to \$380 million. This increase is shocking and incredible, and it verges on the impossible, and presentation of such an enormous change via blog is a grossly flippant approach to what Mayor Davis of Augusta has referred to as the greatest threat to the livelihood of the community in three decades.[9]. Essentially, as the local community has learned more details about the proposal and opposition to the Proposed Rock Weir has grown, the Corps appears to be inventing excuses to reject the Fish Bypass.

We further note that the cost of bulkhead repairs and bank reinforcements, as well as property damage arising from the pool lowering, are not accounted for in the Corps' cost estimates. Furthermore, the cost estimates do not appear to calculate O&M for siltation removal from the top of the Rock Weir or for removal of garbage and organic debris that will collect, daily, in the Rock Weir pools. Further, as noted in Comment 7 below, construction of the Proposed Rock Weir is predicted to damage infrastructure above the L&D, and these costs, too, are not included in the Draft Report.

The whole cost estimating process, including the recent and shocking re-estimation after release of the Draft Report for public comment, speaks to the arbitrary and capricious nature by which the Corps developed these estimates and undermines the entire credibility of the Draft Report. The Corps must withdraw the Draft Report, re-evaluate the cost to reflect defensible life-cycle assumptions and work with the community and elected officials to develop an acceptable plan.

Comment 3. The Draft Report presents an incomplete analysis and violates the minimum requires of the National Environmental Policy Act (NEPA) and the Endangered Species Act (ESA).

1. Compliance with NEPA.

As outlined above, the USACE issued an Environmental Impact Statement (EIS) for the SHEP in 2012, which EIS selected the Fish Bypass as the preferred alternative to satisfy certain elements of the required ESA mitigation. In the 2012 EIS, the USACE evaluated – and rejected – the Proposed Rock Weir on a number of grounds, one of which was increased flood risk created by the conversion to a permanent structure

in lieu of the five mobile gates at NSBL&D. No amount of engineering could develop a fix to this obvious problem, and the Proposed Rock Weir was excluded as a feasible alternative.

In the Draft Report, the USACE dramatically changes the project. Instead of the Fish Bypass, the USACE selects the Proposed Rock Weir, involving a wholesale redesign and re-engineering of the sturgeon mitigation project – complete removal of the NSBL&D, construction of an entirely new in-stream barrier, implementation of millions in new flood control components, and lowering of the pool to make the Proposed Rock Weir feasible under FEMA's flood prevention requirements. In fact, there is no part of this mitigation project that is unchanged. Yet the USACE has taken the arbitrary position that a new or supplemental EIS is not required.

NEPA requires the USACE to issue a supplemental EIS anytime substantial changes are made to a proposed project and whenever a new project involves new or different environmental effects. (33 C.F.R. Part 230 and Part 325, Appendix B; 40 C.F.R. §1502.9(c)). Because the Draft Report selects a drastically different project, that goes well beyond even the "significant change" threshold of NEPA, the USACE breached its duties under NEPA by failing to prepare a full Supplemental EIS or a new EIS. A new EIS would explore many of the issues glossed over by the Draft Report: the impact of the severe pool drop on the environment and the local communities, the increase in routine backwater flooding, impacts to (demolition of) historic resources, negation of conservation easement, destruction of primary parkland and the environmental justice implications of this, and effectiveness of the mitigation strategy, among others.

The 2012 EIS underwent review by 28 federal agencies, 11 state agencies, 8 local governments, and numerous community groups, further evidence of the far-reaching implications of a project of this size, magnitude and importance.

In fact, in 2016, as it was drafting the WIIN Act amendment, USACE officials at Headquarters advised the U.S. Senate Environment and Public Works Committee and local USACE officials that the Corps would have to follow NEPA in implementing the new project and that they did not know the substantive outcome of the NEPA review. USACE officials specifically noted that “there could be concerns – we do not know that for a fact, but it is a potential red flag.” The Corps acknowledged not only that this was a new project triggering an EIS under NEPA, but also that given the significance of the change, new issues (“red flags”) may be identified in the review process.[10]

These red flags were in evidence on February 15, 2019, when the river pool reached the Proposed Rock Weir simulated levels. The Corps appeared surprised by the results and quickly reversed the draw down to restore the vital pool. By all accounts, the drawdown shocked the community and municipal leaders and led to outcries from community groups and visits from our

Picture 1: Savannah River / Augusta Pool on February 15, 2019

elected officials in Congress. This drawdown showed the errors of the underlying hydraulic models, as outlined in Comment 6, rendering the findings of the Draft Report faulty and unreliable. These impacts demonstrate the importance of, and legal requirement for, a Supplemental

EIS. Perhaps the Corps would have performed a Supplemental EIS had it performed the draw down during the study period, as would be proper protocol, rather than after it reached its conclusions and issued the Draft Report memorializing its recommended alternative.

As this group noted in its May 2017 comments on the WIIN Act review process, all of this new review and government and public coordination would create a significant delay in implementation of the project and impose a far higher risk of failure (given the cost and water reregulation issues identified in the EIS and discussed in these and prior[11] comments). Since the SHEP project schedule requires that construction of the mitigation project must begin prior to or concurrent with the start of inner harbor dredging, the delay involved in performance of the required Supplemental EIS for the Proposed Rock Weir alternatives and caused by the ultimate failure of this proposal under such scrutiny would severely delay the SHEP project, at great cost to the Georgia Ports Authority and the State of Georgia. (SHEP EIS at 5-215.) For example, the Corps unilaterally determined that updated state water quality certifications, a key component of the project, were unnecessary, just as elected officials in both states have raised serious objections to the Proposed Rock Weir.

We further note that the pre-EIS efforts are in any event incomplete and not eligible for the indicated "no significant impacts" determination. Among other issues outlined in the comments, the FONSI statement itself contains "XXX" in lieu of evidence of compliance with the National Historic Preservation Act. (Draft Report at iii and at Section 2.2.9; 54 U.S.C. §300101 et seq.) Given that the proposed project involves not just impacts to but complete demolition of a significant

historical asset, NEPA requires the Corps to complete consultation with the HPA authorities prior to issuance of its findings.[12] Additionally, Section 6(c) of the Review Plan requires the Corp to include a cultural resources/NHPA expert on the IEPR review panel and this expert's input will be critical in the evaluation process. We expect this review will identify flaws in the definition of NHPA area of impact, among other concerns.

Finally, as part of the required Supplemental EIS and contrary to the findings of Section 5.3, the Corps must comply with the water quality certification provisions of the Clean Water Act (CWA) and may not proceed with the Proposed Rock Weir without updated water quality certifications from Georgia and South Carolina. As outlined above, the Corps[13] has elected to perform a wholesale rewrite of the sturgeon mitigation project but such decision is constrained by the requirements of CWA Section 401.

The Corps' finding of no significant impacts is arbitrary and capricious. NEPA prohibits the Corps from proceeding with the Proposed Rock Weir until a full EIS is completed with respect to this selected alternative and made available for public review and comment.

1. ESA Compliance.

The ESA requires the Corps to implement a compensatory project to address damage to the Atlantic and Short-Nosed Sturgeon population caused by the SHEP dredging work. With the Proposed Rock Weir, the USACE has placed all of its eggs in one basket: construct a rock ramp across the entire river to allow the sturgeon to pass to the Augusta Shoals for spawning. Local experts have repeatedly expressed the opinion that a modified lock

system/fish lift would provide a more reliable and demonstrated passage for sturgeon. Further, the Corps has not supported the administrative record with any documentation that the Proposed Rock Weir provides superior fish passage to the smaller Fish Bypass or to a lock/fish lift system. While the Corps points to NOAA support for its selected alternative, the factual record remains more than sparse on this point – it is virtually empty. Additionally, interviews with knowledgeable anadromous fish biologists have failed to identify any site on the East Coast where sturgeon have been positively documented as using a fish passage or channel to pass a riverine obstruction like the ones proposed. Elected officials and local communities have urged the USACE, as we do here, to satisfy the ESA by exploring more creative and cost-effective ways, such as a fish lift construction with the NSBL&D[14], to preserve the Augusta pool while allowing sturgeon access to the Shoals. Further to this comment, the members of Save the River hereby incorporate by reference the comments of Mr. Jorge Jiminez dated March 14, 2019.[15]

Comment 4. The Corps grossly mischaracterizes the Economic, Aesthetic and Recreational impacts of the Proposed Rock Weir, ignoring key damage to the aesthetics and recreational opportunities of vital importance to the CSRA.

Sections 3.6.11 and 3.6.12 of the Draft Report present the Corps' findings with respect to the aesthetic impacts of the alternatives and no section of the Draft Report addresses the overall economic impact to the CSRA. The Proposed Rock Weir would comprise perhaps the largest and most significant change to the Augusta natural and community landscapes in a century, altering the

river levels, parklands, and forested areas across miles of territory. Notwithstanding the enormous impacts from such a large-scale project, the Corps devotes four sentences to an evaluation of Aesthetics, three sentences to its evaluation of Recreation, and two sentences to the enormous economic impact to the CSRA. This is an insult to the CSRA and a woeful breach of the Corps' duties to the citizens of Georgia and South Carolina and the U.S. legislature that grants it authority to construct projects.

Among the many issues not discussed are the following:

- Destruction of NSBL&D Park: The Proposed Rock Weir project includes complete removal of the Park, which is a treasure to the CSRA community and a frequent spot for locals to enjoy the outdoors and access to fishing that it provides. The Corps presents no evidence that it evaluated the aesthetic and recreational impacts resulting from removal of one of Augusta's largest parks and the centerpiece of its park master plan. Missing information includes usage of the park, and by which sections of the Augusta community (such as minorities and low-income families).

- Destruction of Historic Property: By its own statements, the Corps admits that the local community enjoys and takes pride in the historic qualities of the "unique" NSBL&D, an engineering feat of the 1920s that continues to maintain a reliable pool for the community. (Draft Report at 2.2.12.) However, in its brief assessment of aesthetic impacts, the only mention of this historic resource is that the project will "be very beneficial by removing a large man-made concrete structure". (Draft Report at 3.6.12). We question whether the Corps read their own report, but in any event the conclusion in Section 3.6.12 is ludicrous.

• Lowering of the pool: The Draft Report completely glosses over the daily, routine and vital use of the river pool and how the lowered pool will impact these uses. The Corps limited its focus to "docks impacted" and barely addressed the lost recreational value from loss of boating and swimming. It severely underestimated the economic benefits of the Ironman and Regatta, and in no place does the Report assess the overall economic impact, which the local officials assess at over \$50 million per year for the Ironman and Regatta alone. The pool "as it existed on the day of the Act" provides just enough safety margin to allow the full suite of activities; the three-foot average drop (not to mention the larger drop that will occur almost half the time) would eliminate a large component of these activities, with devastating impacts to the economic, aesthetic and recreational vitality of the region.[16] The Draft Report also does not appear to attribute value to property damage resulting from the lowered pool, both during and after construction.

• Forested Resources: Ten acres of forested land, under conservation easement, is proposed for condemnation and deforestation for purposes of constructing a concrete ramp and parking lot. The entire section on aesthetics does not so much as mention these impacts to the natural landscape, and Section 3.6.5.6 likewise does not discuss destruction of these protected resources. It would be unreasonable and potentially unlawful for the Corps to attempt to secure such protected property for construction or project operations.

Notably, Section 4.9 of the Draft Report, summarizing the public concern for the project, also glosses over the specific, material and extensive concerns of the CSRA. This Section fails to discuss to written objections of both the City of

Augusta[17] and the City of North Augusta[18] Commissions, United States Congressmen[19], and state legislators. Because all of these incomplete evaluations threaten the validity of the Corps' selection process, the Corps must withdraw the Draft Report and work with the local community and elected officials to understand and evaluate the impacts of the various project alternatives.

Comment 5. The Draft Report does not discuss the mandatory IEPR and Save the River reserves the right to comment further once the IEPR results are issued for public review.

Section 6 of the USACE's Review Plan, Savannah Harbor Expansion Project, Georgia and South Carolina, Fish Passage at NSBL&D, Integrated Post-Authorization Analysis Report and Environmental Assessment, dated December 2017, sets forth the USACE's independent external peer review (IEPR) procedures applicable to the modification of the sturgeon mitigation project. The Corps is required to perform a Type 1 IEPR "based on the significant public interest surround the NSBL&D and this post-authorization analysis." (Review Plan at Section 6(a)). The Review Plan dictates that the peer review will occur in connection with development of the Draft Report by an independent panel of experts that meet the detailed requirements of Section 6(c) of the Plan.

The text of the Draft Report does not mention the IEPR process. The only mention of IEPR that our search revealed comes in the "Acronyms and Abbreviations" in the Table of Contents, where IEPR is defined. The Corps must revise the Draft Report to describe how it will coordinate this important process and allow for the required public visibility into the IEPR panel's findings and

comments. For example, who is on the panel, what are their credentials, what information did the Corps provide to the panel, and what is the timing for the panel's review? The Plan requires that the panel's review comments be issued within 60 days of completion of the public comment period. and Save the River will look forward to review of these review comments. Failure to complete this process in accordance with applicable law will invalidate the final Report.[20]

Comment 6. The hydraulic models used in the Draft Report are all flawed and do not accurately represent the actual water surface profiles on the Savannah River.

The hydraulic models used in the Analysis Report are all flawed and do not accurately represent the actual water surface profiles on the Savannah River. At least one major problem is the selection of the value for the roughness coefficient "n" in Manning's equation for open channel flow, resulting in predicted water levels much higher than reality. This is a major flaw that affects all of the hydraulic profile computer models and brings into question the validity of the entire Report and its conclusions.

The accurate predictions of water levels are critical to the design of any water level management structure and are of even greater importance when those structures are fixed weirs. In those cases, the designer only gets one chance to get it right. They have not gotten it right yet.

Observations on-site during the February 2019 river drawdown show clearly that at least during ordinary flows, the pool behind the Lock and Dam acts much more like a lake than it does like a river. This test was a prime opportunity to test the validity of the computer simulations

models using the subject of those models, the Savannah River itself.

On February 15, 2019, the water level drop from Fifth Street (111.23, NVGD 1988) to the Lock and Dam (110.28, NVGD 1988) was 0.95 feet.[21] This amount is only one-third of the difference of more than 3.0 feet predicted by the Corps's 8,000 cfs model.[22] Using the actual drop over the 12.5 mile reach and the corresponding flow rate occurring at the Lock and Dam at the time of 7,270 cfs just downstream from the Lock and Dam, the input values for the model can be tested, particularly the channel roughness coefficient, "n".[23] An analysis of these conditions shows that Manning's "n" is approximately 0.023. This value is much different from either the 0.031 or 0.033 estimates used by the Corps.[24] Their report states the following concerning this subject,

"Manning's n values for natural channels are difficult to quantify outside of a laboratory setting and are subject to the professional judgement and experience of the hydraulic engineer."

The drawdown furnished the best "laboratory setting" of all, the full-sized physical model of the Savannah River itself. It proved that the water level drop at Fifth Street was at least three times that which the Corps' simulations had predicted.

According to the "Operation Plan for Fixed Weir Pool Simulation," dated January 25, 2019, furnished by the Corps to the Mayor of North Augusta, at his request, one of the Goals and Objectives of the drawdown was to

"verify the predictions made with the riverine model for the depth attenuation through the pool. If necessary, adjustments will be made to the model to better represent the actual conditions."

Because the predicted and the actual conditions of water surface elevations were grossly different, all of the other hydraulic models are likely to be similarly wrong, so that adjustments must be made to model and all of the simulations that underlie the Draft Report.

We understand that the USACE must comply with the Information Quality Act as implemented by Department of Defense and Department of Army guidance[25] and that the current state of the modeling does not comply with these requirements. For this reason as well as the reasons further described in this Comment 6, the Draft Report must be withdrawn, corrected and reissued for public comment. Only when quality information becomes available can the public responsibly respond and appropriately comment. Save the Middle River reserves the right to make additional comments when the corrected data is made available, because the Draft Report is erroneous.

Comment 7. The Proposed Rock Weir will permanently remove the reregulation and pool management function of the NSBL&D, creating increased routine flooding in the backwaters above the Weir.

In the 2012 EIS, the Corps carefully evaluated the ability of the Rock Weir alternatives to maintain the critical water reregulation function of the Dam gates. In the 2012 SHEP EIS, the Corps concluded that any modification to the gates would cause an unacceptable risk of increased flood impacts for the upstream community. In describing the development of the mitigation feature, the Corps writes,

The design team found maintaining the upstream pool elevation to be a challenge. The District maintains

stable pool elevations (near EL 115 feet) during most river flows and raises the gates at the dam during high flows to reduce the backwater effects of the dam on the upstream pool and its adjacent development. Placing rock in the channel cross-section and/or making a gate inoperable reduces the ability of the water managers to lower water heights in North Augusta and Augusta during high flow periods. As a result, the designers expended considerable effort to develop designs that would not increase upstream flood heights over the current condition.

SHEP EIS, App. C at 72. A change in the predicted upstream flood heights could lead FEMA to enlarge the floodway, at significant cost. Based on these constraints, the Corps designed the Rock Weir alternative (now presented in the WIIN Act) to include, by necessity, a complex flood control component that comprised extensive new infrastructure to re-route high flows – at an estimated cost of \$100 million. (SHEP EIS, App. C at 72-74.)

Further, as detailed in prior comments, the WIIN Act requires the project to maintain the current pool “as in existence on the date of enactment of this Act.” (WIIN Act, § 1319(c)(1)(A)(i)(I) and (ii)(I).) Accordingly, the Corps is prohibited from lowering the pool level to address the known and quantifiable flood risk created by removal of the dam. Since the pool cannot be lowered, the Proposed Rock Weir modified to meet the WIIN Act would increase flood occurrences and result in a rise in the FEMA flood plain.[26] Notably, the increase in backwater floods would impact the entire Central Savannah River Area community (in two states) – not just the adjacent landowners but also the employers (hospitals, cities, industrial facilities) whose employees would be impacted.

Based on the 2012 EIS, the Corps also has to account for greater upstream damage during construction that would occur with the Proposed Rock Weir over the Fish Bypass or similar L&D-based alternative. Specifically, the Corps concludes as follows with respect to the Rock Weir alternative:

Upstream infrastructure in Augusta and North Augusta would be impacted during construction when the pool would be temporarily lowered.

(SHEP EIS, App. C at 74.) Again, the WIIN Act prohibits lowering of the pool as part of the project, and the Proposed Rock Weir fails to meet Congress' minimum requirements. Notably, with the Fish Bypass alternative, this same risk is avoided entirely, with the Corps specifically concluding that with the Fish Bypass,

"[u]pstream infrastructure in Augusta and North Augusta should not be impacted since the pool would not need to be lowered, even during construction." (SHEP EIS, App C at 77.)

We further note that even if the WIIN Act did not directly prohibit lowering of the pool levels, such an action would nonetheless be extremely problematic and enormously expensive for our communities. It would risk eliminating or threatening the municipal and industrial water supplies reliant on a full pool. It would also eliminate many of the recreational activities and events that bring tens of thousands of visitors to the CSRA each year, and it would seriously diminish the routine enjoyment of the River by area residents. A lower pool would also harm landowners and riverfront developments. All of this was clearly evidenced by the pool simulation that the Corps abruptly halted in February 2019.

		<p>As outlined above, by the Corps' own determination, the WIIN Act's Rock Weir alternatives will create undue flood risk in the CSRA and will entail entire loss of the pool during construction.[27] The Corps must reject these alternatives and proceed with the approved Fish Bypass.</p> <p>Comment 8. The Proposed Rock Weir arbitrarily eliminates navigation by boat to the upper river.</p> <p>With the existing lock currently out of service, navigation of the river past the Lock & Dam is not possible in either direction, for either commercial or medium and large private vessels. Small boats can theoretically use the boat ramps above and below the dam to effect a portage, however impractical that may be. In the Proposed Rock Weir project, all navigation on the upper reaches of the formerly navigable Savannah River will be permanently ended. This includes vessels of all sizes, with the possible exception of canoes, kayaks, and similar small, unmotorized boats.</p> <p>It is ironic, and arbitrary and capricious, for the Corps to spend tens of millions of dollars making the upper Savannah River possibly navigable for a fish species, and simultaneously entirely non-navigable for mankind. The rehabilitation of the Lock and Dam combined with the Fish Bypass or fish lift would restore the longstanding navigability of the Middle Savannah River.</p>	
207.	Wayne Johnston, Evans, Georgia	<p>I am a citizen and tax payer in Evans Georgia near Augusta Ga. We must maintain the current water levels in the river to continue the business needs of the area, real estate values, and quality of life.</p> <p>Is the Short Nose Atlantic Sturgeon Really still on the endangered list???</p> <p>Has anyone actually verified this??</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District</p>

		I strongly support maintain the lock and dam in lieu of a Rock Wier	must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.Rehabilitating the New Savannah Bluff Lock and Dam is more costly than other alternatives, fails to allow endangered and threatened species to pass the location and it no longer serves the purpose of its construction – commercial navigation between Augusta and Savannah
208.	Patricia Engvoldsen	Maintain the pool!!!	Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.
209.	Louise Larango	Augusta and North Augusta are really starting to come out of the doldrums when shopfronts were boarded up, there was not one riverfront restaurant and the only thing people knew Augusta for was golf. Now, we have a	Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while

		<p>5 star riverfront hotel, world class ballpark and people come here for the natural beauty and friendly atmosphere.</p> <p>Keep Augusta and North Augusta beautiful!</p>	<p>preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>
210.	Steve Murphy, North Augusta, South Carolina	<p>I want to voice my strong opposition to the Corps plan to reduce the pool level and believe your current plan is short sighted. I live along side the river in North Augusta and paddle board and fish on the river every weekend. The river is an attraction to economic development. I witnessed first hand the drawdown of the river (by paddling) and was appalled at the difference to the eye. It was a stinking mud hole. Even at current levels the river in front of the Augusta amphitheater needs dredging. Future uses of the river for navigation all the way to Savannah need to be maintained so a lock is a must. We strongly oppose any plan that does not include a lock and flood control aspect. Also I have observed the sturgeon in the river in downtown Augusta recently and they already are here. I have video to prove it and have shared it with the SC fisheries scientists.</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>
211.	Jackie Pitts, Augusta, Georgia	<p>I have lived in Augusta for 20 years. When I arrived here, I wondered why the Augusta area did not value and utilize the Savannah River for all the value it offered this area. Thru the years, finally more people began to use the lake and river for recreation to enjoy the beauty of this wonderful</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for</p>

		<p>natural space. Also finally, city officials of North Augusta, SC and Augusta, GA are beginning to see the value of the river and the value and enjoyment it can bring our cities. I have to wonder about your timing in your plans to destroy the lock and dam and alter the Savannah river. There are many solutions to the lock and dam problem and I ask that you preserve the original lock and dam and the beauty of the river.</p>	<p>the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure. Rehabilitating the New Savannah Bluff Lock and Dam is more costly than other alternatives, fails to allow endangered and threatened species to pass the location and it no longer serves the purpose of its construction – commercial navigation between Augusta and Savannah</p>
212.	<p>Erik Montgomery, Historic Augusta, Inc., Augusta, Georgia</p>	<p>New Savannah Bluff Lock and Dam</p> <ul style="list-style-type: none"> • The New Savannah Bluff Lock and Dam is a historic structure, completed in 1937, and has historic significance to both the States of Georgia and South Carolina. <ul style="list-style-type: none"> o The Lock and Dam was determined eligible for listing in the National Register of Historic Places in both 1996, and again in 2001 by the Historic Preservation Division of the Georgia Department of Natural Resources, under provisions of the National Historic Preservation Act. o Brockington and Associates completed an additional assessment in 2013, summarizing the history of the Lock and Dam. This included revealing archival photos and drawings, as well as current assessments. A copy of relevant parts of their report is attached. o These determinations and assessments have consistently recommended preservation and rehabilitation of the New Savannah Bluff Lock and Dam, while introducing the required fish passage in a sensitive manner that would not 	<p>Thank you for your comments. In 2013 USACE consulted with the Georgia and South Carolina State Historic Offices (SHPOs) regarding the New Savannah Bluff Lock and Dam's eligibility for the National Register of Historic Places (NRHP). The research indicates the lock and dam possess important associations with a long-term cooperative effort by USACE and the City of Augusta, Georgia to improve commercial navigation along the river (Criterion A, transportation history). The structure was also determined eligible for the NRHP under Criterion C, engineering, as the structure retains a high degree of architectural/engineering integrity as a result of minimal physical changes since construction completion in 1937. The NRHP boundary was delineated to include the features that have retained integrity and are associated with the functioning of the lock and dam. The features included in the NRHP boundary are the physical components of the structure itself, including the dam, gates, operation building, guide wall (including the wooden extensions), bumper cells and shoreline abutments along with a portion of the river both upstream and downstream. A figure of the boundary is included in the Fish Passage report.</p> <p>The USACE Savannah District's focus is to follow the legislation requirements of the 2016</p>

detract from the historic structure in any significant way.

- Although the Brockington study was commissioned to only assess the area immediately surrounding the Lock and Dam, we submit that the entire water impoundment that was created by the structure is of historical significance, having been in place well over 50 years (now 82 years). This would include the entire pool up through downtown Augusta and North Augusta.
 - o National Register of Historic Places Criteria calls for buildings, sites, structures, objects and districts to be at least 50 years old, which means the New Savannah Bluff Lock and Dam as well as the water impoundment easily meets the age requirement for National Register eligibility.
 - o The Georgia State Historic Preservation Office has determined that the Lock and Dam is eligible for the National Register under Criterion A, and C.
 - Criterion A: Properties that are associated with events that have made a significant contribution to the broad patterns of our history.
 - According to the Determination of Eligibility, NSBLD meets this threshold because of its association with Transportation History, due to the locks and the water connection between the Upper Savannah River and the Atlantic Ocean.
 - Criterion C: Properties that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction;
 - According to the Determination of Eligibility, NSBLD meets this threshold because of its design as significant examples of Architecture and Engineering, as well as various structures associated with the actual lock and dam.

Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure. Rehabilitating the New Savannah Bluff Lock and Dam is more costly than other alternatives, fails to allow endangered and threatened species to pass the location and it no longer serves the purpose of its construction – commercial navigation between Augusta and Savannah

		<ul style="list-style-type: none"> We urge the U.S. Army Corps of Engineers to select the option that will preserve the New Savannah Bluff Lock and Dam, rehabilitate it in such a way that it will continue to maintain the historic pool level that has existed between Richmond and Aiken Counties for over 82 years, and allow that pool to continue to serve the citizens of the United States for the purposes of water supply, industrial needs, recreation, and overall quality of life amenities. 	
213.	Deborah Brooks, resident of South Carolina	<p>I would like to comment on the choices at present concerning the Lock and Dam. Neither proposal seems to be the best for the citizens of the area. Restoring the present day Lock and Dam seems to be financial unfeasible. The proposed rock weir take the pool level down to much which puts a variety of events that occur on the river to be in danger. My concern is that the aesthetic will possible have those events choose other locations. The loss of revenue from these events and the aesthetic of the businesses located on the river may be harmed. Adding on the loss of the historical Lock and Dam Park, to me with the above is asking too much for our community to lose. I am hoping an alternative can be found that meets the criteria of the fish passage, flooding control, and enhanced economic development for our area. It is my understanding there may be a proposal that would include a rock weir with crest gates and a passage through the Lock and Dam Park that will allow fish passage and recreational use. I understand that this has been used in a number of places in the US with great success. I hope this type of proposal will be given great consideration that meets all the needs of the community.</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>
214.	Fred Marriott, Martinez, Georgia	<p>I am responding to the proposed Fish Passage at New Savannah Bluff Lock and Dam. I support your reconsideration of the plan 1-1 Alternative which will repair the dam</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of</p>

		<p>and also provides fish passage along the side. The alternative that seems to have been pre selected requiring the removal of the dam and drastically dropping the water levels along the river would create severe economic impacts to home owners and business along the impacted part of the river and also to the numerous recreational activities in both Georgia and South Carolina which rely on the current river levels for their viability. That was made abundantly clear with your recent drawdown.</p> <p>I have no problem in trying to accommodate the short-nosed sturgeon and other fish but a balanced approach should be available. "Where there is a will there is a way" as we say. I don't find compelling evidence that your proposed type of rock weir has been very effective in helping the sturgeon in other areas. So why invest in a project that spend precious tax payer dollars, hurts the economies and does little to protect this fish. Perhaps even a fish "lift" would be more effective. The added initial cost of a lift may be greater but long term benefits to the recreation of our populace and the economy of our area would more than off-set the cost if you choose to go that route. I imagine there might even be some economic support from our two states for an alternative that maintains current, or close to current, river levels.</p> <p>In any event, I feel proposal 1-1, or a close modified alternative that maintains close to current river levels, is the most reasonable alternative for the sturgeon and our people.</p> <p>Thank you for your consideration of my input</p>	<p>the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>
215.	Louis Wall	<p>The New Savannah Bluff and Dam should be repaired. Some thing like this would be repaired in another country and paid for by us, so why not here? What is more important, the fish!!!!????</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for</p>

			<p>the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure. Rehabilitating the New Savannah Bluff Lock and Dam is more costly than other alternatives, fails to allow endangered and threatened species to pass the location and it no longer serves the purpose of its construction – commercial navigation between Augusta and Savannah</p>
216.	Thomas L. Allison	<p>I attended the 3/6/19 presentation. I was dismayed to hear that the Corps was not interested in debating the options or even hearing comments from the floor. The presentation made it clear that the Corps feels they have little choice because the law requires a fish passage for the sturgeon to reach spawning grounds up stream. The law also requires the project to be within a certain cost and to begin construction on 1/1/21. Although the law also requires the pool to be maintained at the level on the date the law was enacted, the Corps opted to ignore this mandate and lower the levels about 3 feet. This level will end or greatly curtail many sporting events that take place on the river and has caused great concern with the home/business owners along the river and may affect flooding and fresh water intakes.</p> <p>After speaking with Mr. Herndon and his teammates at NOAA Fisheries, I learned a lot about the perceived problem. First, the deepening of the harbor in Savannah will cause the fresh water- salt water interface to move further upstream. This interface</p>	<p>Existing data suggest both shortnose sturgeon and Atlantic sturgeon return to their natal rivers to spawn. While Atlantic sturgeon travel much more widely than shortnose sturgeon, they still return to the rivers they were born in to spawn. The deepening of Savannah Harbor and subsequent upriver migration of the salt wedge will substantially alter habitats currently used by juvenile sturgeon. It is unclear how juvenile sturgeon will respond to this change.</p> <p>Providing passage to the Augusta Shoals may double or triple sturgeon access to quality spawning habitat. Sturgeon lay hundreds of thousands to millions of eggs at a time. Major drivers of sturgeon spawning success include the quantity and quality of available spawning habitat. Both can ultimately limit the number of sturgeon eggs that successfully hatch. If habitat is of relatively poor quality, eggs may not develop properly or larvae may die shortly after hatching, limiting the number of animals that ultimately survive relative to the number that could have under better conditions. Similarly, if conditions are good but spawning habitat is limited, a higher percentage of larvae may survive, but the total number of eggs available to hatch may be limited. Doubling or tripling access to quality spawning habitat will provide more areas for eggs to be laid and hatch, which</p>

area is important as a Juvenile Habitat when the short nose and atlantic sturgeon are about a year old and before they get used to the salt water. If they enter the salt water prior to being used to it, they may die. Since both fish are on the endangered list, it is cause for concern. I then learned that the short nose sturgeon always returns to the same river and do not spawn in other rivers, while the atlantic sturgeon will spawn in any suitable river. I also learned that the juvenile sturgeon may take a few years (perhaps 1 to 5 years) to learn the new location of the juvenile habitat. After that time, the population should return to normal levels.

In answer to my direct questions, NOAA stated that doing anything or doing nothing to the New Lock and Dam will not change the movement of the juvenile habitat or the acclimation to the new location. NOAA stated that the current fish population has adequate spawning grounds below the lock and dam to support their current number (have been for the past 80 years). Since the endangered sturgeon have a finite number of fish, they can therefore lay a finite number of eggs, regardless of the size of the spawning grounds beyond the minimum needed.

1. How can the requirement in the law for maintaining the pool level be ignored?
2. If there is no benefit in a larger spawning ground because no more eggs can be laid, then why is a fish ladder necessary?
3. If the actions taken with the lock and dam will not affect the movement of the juvenile habitat or the sturgeon acclimation to the new location, regardless of what those actions are, why do anything with the dam?
4. The sturgeon spawn only a few months out of the year and the proclaimed need is to open more spawning grounds until the juvenile sturgeon get use to the new habitat location in a few years, so why spend

should increase the number of juveniles entering the population. This will provide near-term benefits and should become even more important as sturgeon populations recover, as additional spawning habitat will be required to accommodate increasing numbers of adults seeking to spawn.

Providing access to the Augusta Shoals also increases the physical distance between potential spawning grounds and downstream exposure to salt water. As the commenter notes, salinity can be deadly to underdeveloped sturgeon. Opening access to the Augusta Shoals provides approximately 20 additional river miles to allow young sturgeon to undergo the physiological developments required before exposure to salt water.

The purpose of opening access to the Augusta Shoals is to increase the sturgeon populations in the Savannah River. The Endangered Species Act requires action to be taken to recover species such that federal protection is no longer required. Increased access to the spawning habitat will help promote not just survival, but also recovery. Sturgeon in the Savannah River appear to be spawning in the spring and fall, and display spawning behavior every year. We anticipate fish will be attempting to access the Augusta Shoals at multiple times a year, each year. Increased access to spawning habitat and potential increases in recruitment will promote recovery of these species.

		<p>millions on permanent solution to a problem that is temporary in nature.</p> <p>5. IF something must be done with the New Lock and Dam, why choose an option that does so much harm to the upstream areas? Other options have been proposed that will not do such harm and appear to be comparable in cost according the news reports. Could other non-permanent solutions be considered for this short-term problem (e.g., catch and release upstream; fish hatcheries; opening the lock during spawning months only, etc.).</p> <p>6. If cost and construction start date is such a concern in the law, how will cost over-runs and schedule delays be handled and remain within the law?</p>	
217.	Charles Bennett, North Augusta, South Carolina	<p>Do not mess with the water levels in our area. Period. You all know there are other options to save the fish and maintain the current water levels. Don't consider money as an issue either. We've wasted trillions on crap for decades. You saw the pictures of the devastating affects of lowering the water. Would you want to live under those circumstances? I doubt it. Additionally, don't forget that the CSRA is fast becoming the Silicon Valley of the Cyber world. The recent tax base growth along with what's coming to this area is phenomenal and can pay for any upgrade to the lock and dam! It demands a quality of life second to none and maintaining the current water level of the Savannah river is definitely part of our quality of life.</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure. Rehabilitating the New Savannah Bluff Lock and Dam is more costly than other alternatives, fails to allow endangered and threatened species to pass the location and it no longer serves the purpose of its construction – commercial navigation between Augusta and Savannah</p>

218.	John W. Stokes, Augusta, Georgia	<p>I write to join those opposed to the current Corps of Engineers plans for the Savannah River pool at Augusta. I believe the proposed lowered level of the pool will deprive area residents of important economic assets -- river-related tourism, outdoor recreational activities and commercial riverside development. In addition, in my judgment, the aesthetic impact of the proposed level lowering would be tragic.</p> <p>I have navigated the Savannah River from end-to-end multiple times since the 1970s, and my wife and I have lived on the River at Augusta since 2001. I am in daily contact with the Augusta pool. Even the thought of it becoming the muddy trickle currently proposed is beyond abhorrent to me.</p> <p>Please, please, please select some other solution to your fish problem that keeps the pool level at Augusta no lower than 114 feet above MSL.</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>
219.	Tom West	<p>Is there any data for the proposed rock weir and it being successful in passing the sturgeon? I do understand the criteria of acceptance is 90% passage of the endangered species. Is it for cumulative or additive average for the endangered fish?</p> <p>Please site reference with study and associated data.</p>	<p>Please see the response to Comment 41 regarding the passage of sturgeon and rock ramps.</p>
220.	Keith Stone	<p>Dear Corps of Engineers, Augusta and North Augusta need the level of the Savannah to remain at it current level for safety sake for boaters. The Locks can be opened and closed periodically to let Sturgeon go up river to the shoals. thanks for all you do for our</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock</p>

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221.	Jack Nance	Please don't maintain the at the expense of the endangered fish. Please allow the progress to return the river to its natural state rather than spending tax dollars to enhance the view of a small minority of rich home owners on the banks of the river. Let it return to its natural state.	Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.
222.	Tom West	The drawn down has demonstrated hazardous a situation with the training walls. The phrase, as in existence, from the 2016 WIIN legislation reads to me as a citizen it is not acceptable to make the pool more hazardous and far less usable for recreation for my fellow residents in the Augusta area..	Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and

			<p>comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>
223.	J.D. Tregagle, Augusta, Georgia	<p>I would like to voice my opposition to removing the New Savannah Lock & Dam. Any action taken by the Corp of Engineers that lowers the pool will have a devastating effect on the aesthetic view of the river, as well as creating an economic hardship for residents and businesses located along the waterfront. There would also be a negative impact on recreational activities along the river. Concentrating on repairing the New Savannah Lock & Dam and installing a 'fish ladder' would be the best option both economically and environmentally in my opinion.</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure. Rehabilitating the New Savannah Bluff Lock and Dam is more costly than other alternatives, fails to allow endangered and threatened species to pass the location and it no longer serves the purpose of its construction – commercial navigation between Augusta and Savannah</p>
224.	Drs Samit and Maryka Bhattacharyya, North Augusta, South Carolina	<p>We reside in North Augusta, SC 29841. We purchased our house on the Savannah River specifically because of the beauty and the boating opportunities presented by the riverfront. Accordingly, we write to you to register a strong protest against your ill-advised approach to replace the existing lock and dam system on the Savannah River, with a rocks and wier system. The current system has been effective in</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest</p>

maintaining water levels at a point where flooding is controlled while simultaneously allowing us to enjoy the aforementioned recreational opportunities. The rock weir system will allow no adjustments of the river level, and will therefore have to maintain the water level at well below the current base level in order to prevent flooding, thereby eliminating much of the charm and utility of the riverfront.

We understand all the pros and cons of the case, since the details of the case have been discussed extensively in the local area. As you are aware, there is uniform opposition to your planned approach to the problem. We will not attempt to repeat all the arguments made by many other people including the local newspapers, the local elected officials of North Augusta and Augusta, Congressman Rick Allen (GA) and Joe Wilson (SC), Senators Isaccson and Perdue of Georgia and Senators Graham and Scott from South Carolina. Governor McMaster of South Carolina has been briefed, and he is solidly behind us on this. Let us just state that while we support the efforts of dredging the harbor in Savannah, and the related efforts to assist the displaced fish to find suitable spawning areas, we are most certainly not willing to pay all the price for these acts.

Your recommended approach appears to be in violation of the 2016 Water Infrastructure Improvements for the Nation (WIN) Act, both in letter and spirit. The Act states "to maintain the pool for navigation, water supply, and recreational activities, as in existence on the date of enactment of this Act". The date of enactment was December, 2016. During that time, data from the US Geological Survey showed the gage depth at the 5th Street Bridge to be between 13.5 to 15 feet. Your analysis (the basis for which is not known) showed that

probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.

		<p>depth to be between 10 and 13 feet. Your own analysis of the depth of the pool after construction of your proposed rock weir structure is 9.5 feet, below your own lower estimate of the current depth, and in violation of the Act. We are aware of the Amendment to the Act that seems to have been pushed through without notice, but I don't believe one should stand behind such an Amendment. Finally, the demonstration that you performed in February 2019 to demonstrate the results of your approach proved conclusively that the rock weir idea was a non-starter. The water levels at several areas of the river were so low as to be indistinguishable from dirty mudbanks. There was real concern that the muddy banks on the Georgia side might actually collapse. You recognized the failure of the demonstration by terminating it well before the intended end date.</p> <p>In summary, the demonstration of the approach you were planning to take proved conclusively that your planned approach is completely unacceptable. It is unconscionable to subject the citizens of Northern Georgia and South Carolina to this injustice, and we hope you will pick a more balanced and rational solution to the problem. That solution must include a means to maintain the water level at the point that it was at the time of the enactment of the WIN Act, as required by law.</p>	
225.	Tom West	<p>Recently the Savannah River was drawn down to let Augusta experience the effect of proposed Corp of Engineers solutions. So the drawn down in 2019 plus and earlier on (in the early 2000's) ended with less than promising results from a 'modeling' standpoint.</p> <p>What are the impacts and mitigations for any of your proposals on the (1) ecology/environment of what currently</p>	<p>Thank you for your comments. The proposed action avoids adverse impacts by:</p> <ol style="list-style-type: none"> 1. Potential impacts to the 100 year flood event were avoided by eliminating all alternatives that would have impacted it. 2. Potential impacts to more frequent flood even were avoided by adding the floodplain bench to Alternative 2-6.

		<p>is in place, (2) economic impact to Augusta and (3) engineering specifically regarding the training walls.</p>	<p>2. The tentatively selected plan provides the most cost effective means of meeting Congressional intent.</p> <p>3. Potential impacts to more frequent flood even were avoided by lowering the weir height in Alternative 2-6.</p> <p>The proposed action minimizes adverse impacts by:</p> <p>1. Potential impacts to recreation was were minimized by performing a tradeoff analysis between Flooding and Recreation with the four 2-6 alternatives.</p> <p>Wetlands impacts due to the Recommended Plan are very similar to the impacts covered by SHEP 2012 FEIS and Appendix C. Mitigation for 0.41 acres of wetlands would be required. Appendix C3 of this document has the updated 404(b)(1) Analysis. Two potential mitigation banks are located in the vicinity.</p> <p>The training wall is a feature of the Savannah River Below Augusta navigation project constructed c. 1910 and is a known navigational hazard for recreational boating. The training wall will be marked with buoys as part of the fish passage construction. The Savannah District has requested approval to study removal of the training wall separate from the fish passage analysis.</p>
226.	Zach Ruege	<p>I am emailing you regarding the public comment period regarding the future plans that affect the water levels in the Augusta canal. The canal's water level must not be depleted as seen during the Draft Recommendation Plan. This was an eye sore and unacceptable. All citizens of the Augusta area take pride in the canal and enjoy the parks in the surrounding areas. Alternative plans must be researched and implemented to preserve the beauty of Augusta, GA.</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional</p>

			<p>spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>
<p>227.</p>	<p>Amy Rickard, Augusta, Georgia</p>	<p>I am a 2 decade resident of Augusta, GA, and the proud daughter of a veteran of the Army Corps of Engineers. My civil engineer father taught me many lessons based in his vocation. One of the best lessons is to work within the parameters given to find a solution that is beneficial to as many parties as possible.</p> <p>I'd like to endorse a plan for the future of the New Savannah Bluff Lock & Dam that includes preserving the current structure and enhancing it with a rock ramp with low-profile crest gates.</p> <p>This plan has many benefits: it is budget-friendly, it successfully implements the required fish passage at the same level or better than current levels, it maintains a river pool very similar to the current pool in the downtown Augusta area, it provides safe passage for public use through and around the structure for fishing and other recreational activities, and it preserves the adjacent Lock & Dam Park as a community recreation area with the potential to drive future economic and recreation development.</p> <p>I encourage you to pursue a plan for the lock and dam that prioritizes all the benefits mentioned above. It is possible to meet the critical mission assigned to the Corps for this project while also enhancing and maintaining the community's ties to the Savannah River -- which is a win for the community, the government, and the native fish populations.</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>

228.	Julia C. Vagovic, Augusta, Georgia	<p>We have enjoyed the Savannah River full pool for 50+ years. Whether rowing, boating, or swimming, the river is important to us. We also enjoy the recreation site at the lower lock and dam. Please know that we support plan 1-1 which repairs the dam and provides a fish passage. Thank you for continuing to work with the citizens of Augusta who want to see their view maintain its beauty and function as a recreational site for all.</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>
229.	General public	<p>If you folks reduce the river level as proposed it will have an extremely negative effect on all of us in the CSRA. I am begging you to please not do this. It would affect our property value personally plus it would be extremely detrimental to the entire economy of our entire region. This area of our state is just now experiencing some-a lot of revitalization. If you lower the river, it will have a huge economic impact. Please come up with a better idea. You can do it.</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a</p>

			result of the creation of the fish passage structure.
230.	Bobby G. Fulcher Sr., Hephzibah, Georgia	<p>To think of removing the New Savannah Bluff Lock and Dam in Augusta is in one word, and put mildly "stupid". Why? Augusta along with North Augusta have both used the downtown riverfront to bring people in to our city. Just as revitalization starts, you want to take away one of the best attractions. Without the dam the river will be reduced to a swampy mud hole during the dry months. We must maintain the water level. The devastating effects and flood probability is to have all the lower counties such as Burke, Screven, and Effingham, is inconceivable. Property values will plummet for landowners , the tax payers. New Savannah Bluff Lock and Dam is, has been, and could be an asset to our community if repairs, maintained, and utilized correctly. Don't cut Augusta off. Deepen the channel, fix the locks and watch as the 1,000 plus trucks going thru Augusta daily start going from Augusta into the Carolina's and beyond. Find a way around the dam. Once she is gone, she is gone.</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure. Rehabilitating the New Savannah Bluff Lock and Dam is more costly than other alternatives, fails to allow endangered and threatened species to pass the location and it no longer serves the purpose of its construction – commercial navigation between Augusta and Savannah</p>
231.	Dalton E. Brannen, Ph.D. Augusta, Georgia	<p>As a member of the Central Savannah River Area (CSRA), I appreciate the opportunity to submit these comments on the U.S. Army Corps of Engineers' review of the fish passage alternatives associated with the New Savannah Bluff Lock and Dam (Lock and Dam) under the WIIN Act. For all of the reasons outlined in the May 26, 2017, comments submitted by the Augusta Metro Chamber of Commerce, which comments I am incorporating by reference as my own. I endorse the Augusta Chamber's letter to ensure and safeguard our community's future dependency on the Savannah River pool created by the New Savannah</p>	<p>Thank you for your comments.</p>

		Bluff Lock and Dam and preserve our riverfront.	
232.	Boswell and Sherrod Lamkin, Augusta, Georgia	I would like to state for the record that my husband and I support Plan 1-1, which repairs the dam and provides fish passage on the side. This will preserve the river pool. Building a weir would cause a loss of revenue in both Augusta and North Augusta. It could cause a financial impact on people who own homes and my end up in the floodplain. Also there will be residents along the river finding their docks on mudflats. The rock weir built on the Cape Fear River was not proven to be effective for the sturgeon!!! Poor economy for the fish and humans! Please use common sense!!	Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.
233.	Louise Wright, Augusta, Georgia	Please do not remove the New Savannah Bluff Lock and Dam. The city of Augusta and North Augusta need to have the water level in the river at the present levels. It is critical that our water levels are not affected. This is most important.	Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage

			<p>structure. Rehabilitating the New Savannah Bluff Lock and Dam is more costly than other alternatives, fails to allow endangered and threatened species to pass the location and it no longer serves the purpose of its construction – commercial navigation between Augusta and Savannah</p>
234.	David Moretz, Augusta, Georgia	<p>I appreciate the opportunity to comment on the subject before us-the need for the repair and reutilization of the Savannah River Lock and Dam. There were three items mentioned as to Corps of Engineers specific missions to be met on the Savannah River-navigation-recreation-and water supply. I'm interested in creating an alternative plan that needs discussion and action by the Congress of the United States to redirect the Corps of Engineers and puts them on a historical path previously followed on the Savannah River.</p> <p>First let me say the Corps has nothing to do with fish but will build what they are told to build. I don't believe it is practical or a wise expenditure of funds to create a fish passage just for a 'few' fish to get back to a 'historical' spawning area. (*none of the species are lined up to go further up river- there is no proof of any species of fish that want to travel up river for another mile or so.) In all my trips to the Locks I've never seen anything but happy fishermen fishing off the lock wall. (*by the way this activity is now prevented because someone said the lock structure is dangerous-I say they are wrong-the lock gets stronger every day and is not about to crumble--this action needs to be reversed to allow recreational fishing again).</p> <p>I believe that since the Lock and Dam was built in 1937 that the fish have changed their patterns and have adjusted to the presence of the Lock and Dam. I believe that after 82 years that the fish species in question have adapted to their environment and are not looking for any additional spawning (*historical or otherwise) territory. I also believe that after so many years that the species in</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Rehabilitating the New Savannah Bluff Lock and Dam is more costly than other alternatives, fails to allow endangered and threatened species to pass the location and it no longer serves the purpose of its construction – commercial navigation between Augusta and Savannah</p>

question no longer seek out 'any' historical spawning areas that were part of their historical DNA spawning patterns.

I believe Congress must readdress the fish passage issue and stop its consideration and concentrate on more productive matters.

Second and most importantly add 'commerce' back to the needs to be met by the Corps for the Savannah River. I believe it can be constructively added under the 'navigation' responsibility of the Corps.

We have three modes of transportation serving Augusta--air, truck and rail...we are missing the fourth leg ... barge. Many trucks and rail cars arrive here daily delivering goods from all points of the country/world (mainly through the Savannah Port)--There use to be commerce/commercial traffic on the Savannah River ... Swann Oil for one ... then I believe a few other road and construction companies utilized the same mode of transport for raw materials; cotton bails also made the trip down. Then as late as 2016 (*see below) we had a barge make the trip from Savannah to Augusta making a critical delivery for a local industry.

With the current issues surrounding our portion of the Savannah River and the lock and dam .. I want to bring back this barge traffic ... ! know the benefits are many ... lower cost, for one ... lessened truck traffic on highways, for another, and environmentally safe, etc ... I believe the local business community will bend over backward to re-route their shipments from truck/rail to barge to both save money and save the Lock and Dam. *Incidentally, I know the rail industry has cut rates historically whenever a threat to their business comes onto the scene, but they can't do it indefinitely.

In my opinion, this mode of transportation and commerce must be reauthorized on the Savannah River by the Congress for many reasons ... especially the need for the fourth

	<p>option itself. Of utmost importance and a topic not yet brought into the equation is national security interest. Consider the Savannah River Plant across the river in Aiken County and their needs to transport parts and goods with several options--not just air, truck and rail--but barge. In addition, our Fort Gordon with it serving many high level defense missions and the most recent Cyber Command addition--the military must have available to them this 4th mode of transport. I believe this is critical to have as an option for fulfilling all their missions 24/7/365. I'm sure the both the Department of Energy and the Department of Defense will have favorable commentary in support of reauthorizing the Savannah River for commerce to assist them in their missions in the Augusta area and beyond.</p> <p>Our Savannah River has a great history ... it brought to life several communities along the river, it created and sustained commerce for many industries for many years and before anyone else the native Americans flourished along the banks of the Savannah River. In 1736, General Oglethorpe created/ founded Augusta. 'Oglethorpe followed a similar strategy emphasizing transportation when he ordered the building of Augusta in 1736. His motive was to intercept the lucrative Indian trade at the point where a complex of major Indian trails from the interior Indian country reached the head of navigation on the Savannah River just below the fall line. Previously this trade had been enriching the merchants and traders of South Carolina. Three years later Oglethorpe wrote of Georgia's successful trading outpost: "The settlement of Augusta is of great service, it being 300 miles from the Sea and the Key of all the Indian Country." Augusta diverted first deer hides and later upland cotton away from Charleston to Savannah's warehouses and wharves, eventually exceeding even its founder's most</p>	
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optimistic dreams.' (*Indian TrailS0original entry bylouis DeVorse, University of Georgia, 01/22/2003Last edited by NGE Staff on 06/08/2017)

***In 2016, The Savannah River proved its usefulness in moving cargo up from Savannah to Augusta. Who is to say that this event or events similar to this will not be called upon to have the Savannah River save the day!

"When a massive piece of equipment moved up the Savannah River to Augusta from Georgia Ports Authority's Ocean Terminal recently, it marked the first time since the Carter Administration that cargo has been barged from Savannah to its old-time trading partner some 200 miles upriver. A 700,000 pound syngas converter, used to produce anhydrous ammonia, arrived at Ocean Terminal last month on the vessel BBC Vesuvius bound for PCS Nitrogen in Augusta. It was offloaded from the ship with the help of Stevens Towing and the Vesuvius' onboard crane.

"This demonstrates Savannah's ability to move super-sized cargo inland via river barge," said incoming GPA executive director Griff Lynch. "It's a useful option when a cargo's size and weight complicate overland transit."

Savannah Morning news A barge proposal on the Savannah River incorporates navigation and the efficient movement of freight, reduces traffic on existing highways and creates an environmental benefit, because a barge moving 200-plus containers creates fewer emissions than 200 trucks. Not to say each barge trip will have 200 containers coming up at one time but any number of containers reduces that same number of trucks off the road for the long hauls. These positives for reauthorizing commerce on the Savannah River must be brought to the forefront for consideration. I'm sure our US Dept. of Transportation can support this given the items mentioned. I'm sure they have commentary to be added to this discussion if asked. Additionally,

bringing back commerce to the Savannah River will have many benefits including reduced truck traffic on roadways, the potential for roadway accidents and a reduction in air quality emissions related to truck traffic.

Re-creating the Savannah River as a navigable waterway for commerce should be our first priority.--So in addition to bringing barge traffic back one must consider the Savannah River as a source of 'tourism' activity- a critical component under the navigation responsibility of the Corps. Under anyones definition, tourism is big business in Ga and South Carolina and without a navigable Savannah River then we stand to lose hundreds of millions of dollars which will forever be lost If the lock is closed. The number of recreational boaters on the Savannah River are potentially immense. The developments occurring on the Ga side ---(*the train depot project on the 500 block of Reynolds Street depicts more boat docks on the Savannah River) this will encourage and create more interest in cruising on the Savannah River between Augusta and Savannah. Think again for a minute--how will these business and recreational boats traverse the Savannah River without a lock? I don't believe an economic impact study has been performed to analyze what are the gains and the losses to the City of Augusta and surrounding area if boating commerce by tourism on the Savannah River is taken out of the equation. In my opinion, without having performed what I believe is a required economic impact study the inaction of the Corps has had a detrimental impact over the past years by taking the locks out of operation and ignoring for years this great navigable waterway system between Augusta and Savannah. Remember, the specific missions of the Corps to be met on the Savannah River-navigation--recreation- and water supply. If the people allow the destruction of the Lock and Dam

		<p>just for a few fish then we will have destroyed a potential course of commerce and transportation that if needed in the future-won't be there and won't be an option. Think of what it will cost to bring it back---how many hundred's of millions-just think. The destruction of the locks will be one of the worse mistakes to be allowed to happen to this community, our State and our Nation. If I'm the only one thinking this then I've been cursed--- but if others think it and others agree then I believe action must be taken to save the lock and dam and reauthorize commerce on the Savannah River and create the channels for commerce between the Savannah Port up the Savannah River to Augusta. I appreciate this comment period and look forward to hearing more debate as this issue brings more thoughtful ideas and suggestions forward.</p>	
235.	Jeremy Pearson, Augusta, Georgia	<p>I own property adjacent to the Savannah River and have followed the progress on the Savannah Harbor Deepening for several years now.</p> <p>After reading the proposal titled "11Fish Passage at New Savannah Bluff Lock and Dam", dated February, 2019, I conclude that the Corps of Engineers significantly missed the mark on several points and should reconsider the options.</p> <ul style="list-style-type: none"> • None of the options presented are my preferred option. I prefer to see the lock and dam rebuilt and a fish passage created on the South Carolina side of the river. • I am aware that this would require a legislative change and I am making this request of my Senators and Representatives. But the COE should design to allow future navigation from Augusta to the Atlantic Ocean. • During the February, 2019 river drawdown to simulate the impact, 	<p>Part 1: Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p> <p>Part 2: We considered a wide range of flows when evaluating project alternatives, from extreme drought conditions to floods.</p>

COE selected conditions that would represent 5000cfs. First off 5000 cfs is a high flow compared to recent drought years actual flow. We have seen repeated 4200 cfs from on the lower flow end in recent years. The Augusta community deserves to see the impact during real drought years. The model of the impact missed the mark-the model said that I would have 2 feet of water under my dock. My dock and my boat were on the ground during the drawdown. I intended to observe effects up and down the river, but the drawdown was stopped several days early. Effects such as access to the Augusta Marina fueling, boat ramps, and if there were changes to where I could navigate.

- The report indicated that no more than 9 docks of the 161 would be impacted for your selected option. Base on my observation and what I heard from others, there we significantly more docks impacted that the report shows. I suspect 100+ docks were affected to need some level of modification. The weighting of+ 1 in your decision matrix should instead be -5. The cost to make those dock useful again will be significant. That cost should be included in the cost comparison of the options.
- I disagree with your rating system in Table 15 as it relates to Navigation. The channel depth should not be the sole criterion. The lowered river level will introduce significant hazards to navigation. The criterion of <3 feet channel depth would be dangerous to the existing navigation/recreation activities-skiing and boat racing.
- I disagree that the O&M costs of the "passive" design would be virtually zero. There will be significant cost for the maintenance of the shoreline, maintenance of the mud flats with the lower level for the 12+ river miles between the New Savannah Lock and Dam and the shoals. There will be continued repairs to property and land

5,000cfs represents the low end of average flows, as seen in Figure 7 of Appendix A to the main report. The vast majority of the time flow levels are above 5,000cfs.

The conditions seen during the simulation were not representative of conditions we would expect to see under the recommended plan. Prior to the simulation, releases from Thurmond Dam were relatively high due to sustained rainfall during the preceding months. These high flows (and resulting higher pools levels) prior to the simulation made the impacts of the simulated 5,000cfs appear more dramatic.

Another factor that made the impacts during the simulation more dramatic was the state of the flashboards at Stevens Creek Dam. Ordinarily the flashboards allow Stevens Creek to even out the flows released from Thurmond's hydropower generation, keeping flows and river levels more consistent over the course of twenty-four hours. The flashboards were not in place during the simulation (due to some maintenance issues and the high flows during the winter months) so the hydropower releases from Thurmond were translated directly downstream to Augusta. Hydropower generation requires high releases from Thurmond Dam, but these releases are only sustained for a short period (for example, JST may release 18,000cfs for one hour). During non-generation periods flows are significantly lower, perhaps only a few hundred cfs. This was the case during the simulation, with high peak flows due to hydropower generation, with periods of very low flows in between. The low-flow periods between hydropower generation are when the water levels were at their lowest during the simulation. Ordinarily Stevens Creek would even things out to produce a "mean daily" flow of around 5,000cfs, unfortunately the flashboards being down for maintenance

after each flood event particularly as water spills past the earthen spillway.

- The COE does not address the reported research study on fish passage through the lock and dam. According to news accounts, fish passage during the lock operation apparently was successful.

- The act of changing the New Savannah Bluff Lock and Dam Park for the purpose of the flood spillway should be considered a taking. The cost to mitigate this taking should be included. I have enjoyed the use of the park for recreation several times through the years.

- The COE discusses aesthetics as being very positive in the current condition and in section 3.6.12.2 COE erroneously reports that the aesthetics would be positive. I disagree based on observations during the drawdown. The mud flats and the re-exposed man-made structure throughout the river, does NOT make in the urban section of the river "more aesthetically pleasing view of the river channel". The negative impact on aesthetics will have a negative impact on the property values and taxation for the properties along the Savannah River in this section. Events like the IronMan race would likely be moved from Augusta permanently because of the aesthetics, despite the generous offer to raise the flow during the race and other events. The cost of the lost property value and lost events were not considered in your cost analysis.

- I object to the forced Augusta local taxpayer funded changes to the City of Augusta's intake structure. At a minimum, the COE & GA Ports Authority should pay for these changes if 2-6d or other pool lowering solutions are selected.

- The source of additional funds needed to assure the correct solution

resulted in the low flow impacts being magnified downstream in Augusta.

The O&M costs associated with the project are documented in the cost appendix.

The floodplain bench for the recommended plan would cover a portion of the existing park, while leaving a large section of it in place. The floodplain bench, when not engaged during high flows would also provide for recreational opportunities. The loss of a portion of the park is necessary to provide sufficient conveyance to pass high flows without inducing flood damages upstream.

Any dock constructed in Section 10 navigable waters requires a permit. The permit states that "The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure ... the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work...without expense to the United States. No claim shall be made against the United States on account of such removal or alteration."

Based on the simulation, the recreational navigation channel would be at least 5 feet in depth throughout the length of the NSBLD pool. According to Safe Water Sports and the International Waterskiing and Waterboard Federation, the recommended minimum water depths for water skiing, waterboarding, and jet skiing is 5 feet (1.5m). These water sports are not expected to be negatively impacted because water depths would be safe.

		<p>should be required to come from the Georgia Ports Authority from the extra revenue made by the port.</p> <p>In summary, please do not sell out Augusta for Savannah's benefit. Thank you for your attention and consideration.</p>	
236.	Kayla Williams	<p>Please assist me in better understanding the proposed rock weir project by answering the following questions:</p> <p>1) Where is the study and data supporting the rock weir for the endangered fish, please provide a reference as well as supporting data?</p> <p>2) How will the wetlands be affected by the project which includes Phinizy Swamp?</p> <p>3) Are the retention and training walls being compromised by the lower water levels?</p> <p>4) What reimbursement will be made to homeowners in order to compensate for the likely decline in the value of the homes on and near the river?</p> <p>5) Has there been any thought put into the negative consequences this project may impose upon the youth community in the CSRA that rely on the Savannah River as an outlet for play, friendship building, and inspiration?</p> <p>6) What other options have been provided to the CSRA as alternative solutions to the issue at hand? Has there been any proposed temporary tax that would aid in funding the repairs that need to be made to the current lock and dam system?</p> <p>Respectfully, a concerned citizen,</p>	<p>1) The <i>Technical Memorandum Federal Interagency Nature-like Fishway Passage Design Guidelines for Atlantic Coast Diadromous Fishes</i>. Serves as the primary guidance document for this project. It provides a summary of the best available data and scientific information on safe, timely, and effective passage for fish species using the Atlantic Coast rivers and streams. The full reference for the document is: Turek, James, Alexander J. Haro, and Brett Towler. <i>Federal interagency nature-like fishway passage design guidelines for Atlantic coast diadromous fishes</i>. NOAA National Marine Fisheries Service, 2016.</p> <p>2) No impacts to wetlands beyond those immediately adjacent to the Savannah River are anticipated. Please see the response to comment number 3.6.4 for more detailed discussion.</p> <p>3) It is not expected that the retention and training walls will be compromised by the lower water levels. The training wall will be marked with buoys as part of the fish passage construction.</p> <p>4) The changes in appearance of the shoreline of properties along the pool are not yet known. The simulation event occurred after a period of higher water levels and high flows during the winter. The appearance along these properties may change when the actual project is constructed.</p> <p>5) Please see Section 3.6.14 of the main report for information related to this question.</p> <p>6) The PAAR documents the decision made according to the Federal process. The state or local government officials may choose a locally preferred plan (LPP) which would require them to provide additional resources. The team is not aware of any proposed temporary taxes or other funding source to select a different plan. See</p>

			comment 281 for additional information about an LPP.
237.	Guy Quinn	See Exhibit 1 for comment	<p>Training Wall: To your comments that the training wall was not considered in the study except in the cultural resources section. The training wall was a part of the modeling and bathymetric measurements of the river, and as such, it was intrinsically related to the navigation and recreation portions of the study.</p> <p>Aesthetics were not a consideration of this PAAR.</p> <p>Recreation: The training wall was designed to create a deeper channel for navigation as shown in the diagram referenced in the comment showing blue through the deepest part of the river and pink behind the training wall and on the river banks on the opposite side from both ends of the training wall. Navigation can occur through this deeper portion, and additional marking will be provided on the training wall.</p> <p>Fish Passage Authorization: The selection of the recommended plan minimized the impacts to dock owners. The requirements under the WIIN Act focused on water supply and recreation. The selection of the recommended plan was based on the ability to successfully pass fish and scoring based on WIIN Act criteria. Alternative 1-1, which places the fish passage through the lock chamber may not pass fish as effectively as well as a full width fish passage. Additionally, the average annual cost was greater than the recommended plan due the condition of the NSBLD and the need to maintain the functionality of the gates so alternative 1-1 was ultimately not selected.</p> <p>No Action Alternative: Due to the legislation, the NAA, the 2014 SHEP bypass channel fish passage, cannot be selected.</p> <p>Biological Opinion: The SHEP Fish Passage is required to comply with the amended SHEP Biological Opinion.</p> <p>SRBCMP: The Savannah River Basin Management Plan, Drought Contingency Plan was not within the scope of this Post Authorization Analysis Report.</p>

Authorizations: The Corps means that the dam is not longer serving the purpose of “commercial” navigation upon which funding for this purpose would receive greater priority for Operation and Maintenance funding.

Lock Concerns: In 2014, the Corps engaged in a district wide effort to reduce risk by conducting periodic inspections. During the periodic inspection of the NSBLD it was determined to be unsafe, and subsequently, the Corps closed and secured the lock chamber.

DSAC Information: The U.S. Army Corps of Engineers’ (USACE) Dam Safety Program uses risk to inform how it manages the approximately 700 dams it operates and maintains, with life safety the highest priority. This approach is a best practice adopted to evaluate, prioritize and justify dam safety decisions. Using risk information allows USACE to repair its dams in the most effective manner within a constrained budget.

The Dam Safety Action Classification System (DSAC) is intended to provide consistent and systematic guidelines for appropriate actions to address the dam safety issues and deficiencies of USACE dams. USACE dams are placed into a DSAC class based on their individual dam safety risk considered as a combination of probability of failure and potential life safety, economic, environmental, or other consequences. The DSAC table presents different levels and urgencies of actions that are commensurate with the different classes of the safety status of USACE dams. These actions range from immediate recognition of an urgent and compelling situation requiring extraordinary and immediate action for unsafe dams through normal operations and dam safety activities for safe dams.

The New Savannah Bluff Lock and Dam is classified as a DSAC 4 dam. This classification was established during the first Periodic Assessment of the Structure in 2014. The definition of this classification is below.

DSAC Class 4 (Low Urgency) – Dams are inadequate with low risk such that the combination of life, economic, or environmental consequences with a probability of failure is low and the dam may not meet all essential USACE engineering guidelines.

			Date of Enactment: The goal of the analysis was to construct a fish passage that repairs the lock wall or constructs water damming feature and meets the requirements of the WIIN act as on the date of enactment and maintained the functionality of the pool as documented in the report.
238.	Hammed Malik, Ph.D, Martinez, Georgia	<p>See Exhibit 2 for comment</p> <ol style="list-style-type: none"> 1. Attached please find comments on referred project and associated documents. 2. No data is available for the current spawning success for shortnose or Atlantic sturgeon downstream of the dam. 3. Additionally, limited data is available for shortnose and Atlantic sturgeon concerning fish passage technologies. 4. Section 3.7, pages 100 and 101: The SHEP document expressed concern regarding the sturgeon's ability to use the fish passage next to the existing dam. It was speculated that the fish could get confused during periods of high water flow. 5. Section 2.2.2, page 18: The SHEP document fails to explain the percentage of the time the flow of the Savannah River is greater than average, and what "high" flow actually means. It states that "average" flow between 3,600 cfs and 8,000 cfs occurs 66% of the time. Section 3.1.1, page 49: Additionally, the document says that flow above 5,000 cfs occurs 77% of the time. These values do not provide information regarding how often the flow is "high" and what high flow actually means. This is problematic since this is a key point in the argument for the selection of alternative 2-6d. Furthermore, there is no explanation regarding why the implementation of a weir would not result in this same confusion and delays. While the water movement is more "natural" with a weir, it will still be necessary for 	<p>1. Thank you for your comments. We will respond to each of your detail comments.</p> <p>2. Derek L. Bahr and Douglas L. Peterson, Recruitment of Juvenile Atlantic Sturgeon in the Savannah River, Georgia, Transactions of the American Fisheries Society, 145, 6, (1171-1178), (2016). The following link (http://www.shep.uga.edu/#&panel1-2) you can find reports of our tagging of sturgeon on the Savannah River and a map to see where they are traveling. Juveniles of both species have been collected in the Savannah River, therefore demonstrating that spawning is occurring. Specific locations have not been identified.</p> <p>3. Concur: That is why we are working with experts at National Marine Fisheries and the States of both South Carolina and Georgia and Utilizing the species specific guidelines that are included in "Federal Interagency Nature-like Fishway Passage Design Guidelines for Atlantic Coast Diadromous Fishes" https://www.fws.gov/northeast/fisheries/pdf/NMFS_2016_Federal_Interagency_NLF_Passage_Design_Guidelines.pdf. In addition we are following the modification on the Fishway at Lock and Dam #1 on the Cape Fear River. We have also include and monitoring and adaptive management plan into our project.</p> <p>4. It is well documented in multiple fish species that their spawning migration is based on environmental cues. For some it is a lessening salinity gradient, for some it is flows. Sturgeon typically follow the largest flow to stay in the main stem of the river. If the way is blocked they will attempt to find other sources of flow to follow. This delay can cause them to miss the spawning window and expend more energy so if they do make it to spawning grounds their eggs or sperm are less viable.</p> <p>5. High flow is anything above 20,000 cfs. Presently the structure starts to be flanked by flood water at approximately 27,000 cfs.</p>

		<p>the sturgeon to locate the fish passage, which has been stated as difficult during periods of high water flow.</p> <p>6. Section 3.5.1.7, page 67; Section 3.6.6.5, page 87; Section 4.4.1, page 106; Section 4.10, page 112: It is stated that the structure (e.g. the elevation of the passage and the way that it mimics rapids) will attract the sturgeon in the alternative 2-6d plan. The assertion that the rapids style of fish passage will attract the sturgeon and encourage them to cross over to their historic spawning sites seems to disagree with the species life history characteristics. Sturgeon are a primarily benthic species that would not be found navigating rapids.</p> <p>7. Section 2.2.6, page 29: Design of the fish passage was based on guidelines from an Interagency Technical Memorandum (Turek et al. 2016). The purpose of this document was to provide a summary of existing fish swimming and leaping performance data for 14 diadromous species of fish in Atlantic coast rivers and streams. Both Atlantic and shortnose sturgeon are part of these 14 species, however, data for shortnose sturgeon was not available at the time it was written. This is problematic because shortnose sturgeon is one of the two species of concern for construction of the fish passage. The shortnose and Atlantic sturgeon are both endangered, so construction of the fish passage needs to incorporate data for both species.</p> <p>8. Overall, vital information regarding the current success of the sturgeon spawning downstream of the dam is missing from the document.</p> <p>9. Section 3.6.6, page 83: The document states that</p>	<p>Bank Full is considered 30,000 cfs. FEMA 1 percent exceedance (100-year) is 138,000 cfs. Table 7 in the Engineering appendix show graphically the non exceedance percent for different flows.</p> <p>The reason that a full river length weir would not provide false attraction is that the whole weir is the fish passage with a slope so the fish can travel horizontally up river and vertically at the same time. The sturgeon have the whole width river to travel. Versus something that maintains the dam where the fish are attracted to water spilling over the dam but cannot travel vertically over the wall and have to find the small opening to travel up river.</p> <p>6. Atlantic and shortnose sturgeon are known to cross gentle slope rapids and use these areas as spawning grounds. The design of the rock ramp fish way includes a very gentle slope, resting pools and gaps for the fish to swim through. We are specifically working with a fish way design engineer from NMFS. The best alternative for the fish would to remove the lock and dam and not have any structure. This would have impacts on the pool and not meet the intent of the WIIN Act.</p> <p>7. Concur: That is why we are working with experts at National Marine Fisheries and the States of both South Carolina and Georgia In addition we are following the modification on the Fish way at Lock and Dam #1 on the Cape Fear River. We have also include and monitoring and adaptive management plan into our project. The assumption that if the fish way works for the larger Atlantic sturgeon the smaller shortnose sturgeon will be able to use it was agreed on by the interagency team. Specific lacking data such as "total body span (including pectoral fins)" is being collected presently. Flume studies are being designed to gather sprint swimming speed.</p> <p>8. Juveniles of both species have been collected in the Savannah River, therefore demonstrating that spawning is occurring. Specific locations have not been identified.</p> <p>9. Concur: These are specific "Terms and Conditions" that were included in the 2nd amendment to NMFS Biological Opinion for SHEP dated October 13, 2017. This is "Terms and Conditions" number 3 and it</p>
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construction, resulting in increased sedimentation and decreased dissolved oxygen will not be carried out between April and August upstream and between August and April downstream. These time frames were given since it is assumed that sturgeon species spawn in the spring and summer, between April and August. However, additional research about Atlantic and shortnose sturgeons suggest that they oftentimes do not spawn at the same time and Atlantic sturgeon spawning can occur in autumn (NOAA 2019). Furthermore, in general, Atlantic sturgeon spawning is not consistent and is seen to occur at slightly different times in the year depending on the location (ASMFC 2019). Atlantic sturgeon spawning can be triggered by temperature, so if there is a warmer or cooler season, the spawning times can change. Since sturgeon have not specifically been tagged or observed just downstream of the dam where they are assumed to spawn, it is not possible to concretely state when these populations complete their spawning events.

10. Section 3.6.1, page 70: Following the prior point, the SHEP document states that this watershed is not highly vulnerable to the effects of climate change, but any ecosystem shifts could result in significant alterations. No climate data from the Savannah River is presented to substantiate this claim.

11. Section 2.2.6 page 25: The report does not quantify any spawning habitat for the sturgeon both historically in the Augusta Shoals and downstream of the current dam, but verifies that spawning must be occurring in this area since the juvenile populations were found. Hall et al. 1991

explains why the dates are set this way. Both species have been observed and tagged just below NSBLD. As part of pre-construction monitoring tagging has occurred since 2014. The following link (<http://www.shep.uga.edu/#&panel1-2>) you can find reports of our tagging of sturgeon on the Savannah River and a map to see where they are traveling.

10. See Appendix K - Climate change.

11. Concur: The exact location that spawning of Atlantic or shortnose sturgeon is occurring below the lock and dam is unknown. No sturgeon have been seen in the act and no fertilized eggs have been collected. The gravel bar downstream of the NSBLD is thought to be a spawning location for sturgeon.

Table 26 of Appendix C of the 2012 Final SHEP EIS list the benthic substrate in the Augusta Shoals, the Suitability index (SI) and the frequency of that substrate (<https://www.sas.usace.army.mil/Portals/61/docs/SHEP/Reports/EIS/Appendix%20C%20Mitigation%20Planning%20SHEP%20FINAL%20EIS.pdf>). From this information it has been calculated that of the approximately 652 acres of shoals 260.8 acres are suitable (Suitability Index (SI) of 1.0 to 0.8) for successful spawning and another 241.2 acres are marginally (SI of 0.8 to 0.5) suitable for successful spawning. Sampling of the gravel bar downstream of the NSBLD as part of the "EVALUATION OF SEDIMENT PARTICLE SIZE DYNAMICS AT GRAVEL BARS USED BY ROBUST REDHORSE (*Moxostoma robustum*) FOR SPAWNING IN THE UPPER SAVANNAH RIVER" concluded that bar featured a mix of coarse sands mixed with well-rounded gravels, mostly in the 8-32mm range). The median particle diameter (D50) rounded to the nearest mm varied temporally from 1mm to 10mm. This bar is made up of a single layer of armoring gravel overlying a mix of coarse sands and gravels. The sand fraction (diameter < 2.0 mm) in this bar averaged 42%. Using NOAA Fisheries (NMFS 2007) definitions for suitable sturgeon spawning substrate

		<p>identified two probable spawning sites in the Savannah River, and in addition a probable nursery for juvenile shortnose and Atlantic sturgeon. However, little is still known about the spawning and juvenile populations, and the first extensive investigation into the juvenile Atlantic sturgeon populations in the Savannah estuary were presented in Bahr et al. 2016. Bahr et al. aimed to quantify the recruitment of Atlantic sturgeon in the Savannah River by estimating the annual abundance of juveniles of the species. This study concluded with suggesting that the Savannah River population is likely the second greatest within the South Atlantic population, but was unable to verify a spawning grounds in the region. It presents this as a success since this area experienced severe overfishing of sturgeon in the early 1900's.</p> <p>12.however, the lock and dam alteration and construction will be focused in an area that is presumed to be the current spawning sites for sturgeon. Thus, this area would be expected to contain the greatest amount of young juvenile sturgeon. Given this, any dredging or construction at all will likely result in at least temporary impacts to not only the spawning populations, but also the juveniles under 2 years old who would still be found upstream in the river.</p> <p>13. Cost page 6 of pdf</p> <p>14. Water supply and recreation page 7</p> <p>15. A significant source of dissolved oxygen generation within the Augusta reach of the Savannah River included aeration of the river water as it cascaded over the dam (NSBL&D). Removal of NSBL&D with Option "2-6d" is resulting in altering existing natural background leading to impact dissolved oxygen dynamic.</p>	<p>types this sand has a Suitability Index of 0.0. The armoring gravel (diameter > 2.0 mm to < 32 mm) has a Suitability Index of 0.5. 1.0 indicates highest suitability; 0.0 the lowest. Therefore the majority of this gravel bar is either not suitable for successful spawning or marginal for sturgeon.</p> <p>12. Juvenile sturgeon are not known to feed in the central reaches of the river. The large concentration of juveniles can be found in a deep hole where middle river joins back into the main river below the Houlihan Bridge. It is assumed all successful spawning of sturgeon occurs above the highway 301 bridge. This gives the larvae time to develop as they float downstream to be able to handle the salinity. The fertilized eggs usually hatch into larvae in 94 - 140 hours depending on water temperature. The larval sturgeon gains nourishment from its large yolk until it is around 3 (three) quarters of an inch long. As they get bigger, they begin to feed on tiny crustaceans that float around in the water, and when they reach around 9 inches long they will become a bottom feeder. Upon hatching, larvae hide along the bottom and drift downstream until they reach brackish waters where they may reside for one to five years before moving into nearshore coastal waters. These juveniles feed in areas of salinity from 0.5 to 30 ppt and would not be found at the gravel bars directly downstream of NSBLD. Impact to spawning adults would be prevented by not having any work done between the dates prescribed in the "Terms and Conditions" that were included in the 2nd amendment to NMFS Biological Opinion for SHEP dated October 13, 2017.</p> <p>13. Cost have been updated and the inconsistency in the values have been corrected.</p> <p>14. The water supply users required USACE's contractor and USACE to sign non-disclosure documents before releasing information that was required for the study. This is why the report was not available to the general public. Each user got a report specifically written for their intakes. The information on water supply can be found in sections 2.2.13 and 3.6.13 of the document. In the week leading up to the simulation and every morning during the simulation,</p>
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		<p>Any loss or gain of dissolved oxygen within the Savannah River system below Thurmond Dam will impact the 5R process and could jeopardize restoration of dissolved oxygen in the Savannah Harbor. Resulting decrease in water quality could affect spawning and the juvenile populations. Impact of Option "2-6d" on dissolved oxygen is not mentioned.</p> <p>16. Savannah River Drawdown / Water Level Simulation page 8</p> <p>17. Impact of groundwater drawdown page 9</p> <p>18. In addition, pool drawdown showed the extent of new sediment that would be exposed as a result of pool elevation changes. Those sediments will be exposed to new wave lapping and rainfall/runoff erosion processes.</p> <p>19. Pool Level Drop and Infrastructure Instability page 9: In addition, pool drawdown showed the extent of new sediment that would be exposed as a result of pool elevation changes. Those sediments will be exposed to new wave lapping and rainfall/runoff erosion processes.</p> <p>20. While it is a given that implementation of chosen "Option 2-6d" will destroy billions of dollars of the local (Augusta Metropolitan) economy, devalue real estate and lower quality of life that has been developed with the underlying assumption of maintaining Savannah River's historic pool level.</p> <p>21. In addition, if "option 6-2d" is implemented, it is without doubt that the physiogeological forces currently maintaining the mid-channel "gravel bar" will be removed and the imprinted/endangered habitat will no longer be available as a spawning habitat for these endangered species.</p> <p>22. What justification do USACE and NOAA have in experimenting an unproven "biological hypothesis"</p>	<p>USACE hosted a conference call with water users and resource agencies to discuss pool levels, flows, and activities from the previous 24 hours. No significant concerns regarding water intake performance were provided to USACE during these calls, even with pool elevations being below what was anticipated prior to the simulation (see the discussion above on flashboard reregulation). One user expressed concern that the simulated pool levels with 5,000cfs did not stress their intake system as much as a drought flow level of 3,600cfs would, but the lack of reregulated flows at Stevens Creek likely caused flow in the river (and resulting pool elevation) to be less than what would be experienced during drought conditions with Stevens Creek flashboards in place. Overall, the simulation validated our expectations that water intakes would not be adversely impacted under the recommended plan.</p> <p>15. There is no evidence that water plunging over the dam will provide more or less DO than series of weirs. Oxygen enters the water by passing across the water surface when it is disturbed. The surface area of the disturbed plunge pool is approximately 5 acres while the surface area of the weirs are approximately 7.5 acres.</p> <p>16. Appendix A Attachment 4 Fixed Weir Pool Simulation - After Action Review. Provides an update on the results of the simulation on USACE Engineer conclusions.</p> <p>17. See specific responses below.</p> <p>18. Any new mud flats exposed would become vegetated during the first growing season thereby stabilizing the sediments and preventing erosion.</p> <p>19. Of the approximately 652 acres of shoals 260.8 acres are suitable (Suitability Index (SI) of 1.0 to 0.8) for successful spawning and another 241.2 acres are marginally (SI of 0.8 to 0.5) suitable for successful spawning.</p> <p>20. While it is a given that implementation of chosen "Option 2-6d" will destroy billions of dollars of the local (Augusta Metropolitan) economy, devalue real estate and lower quality of life that has been developed with the underlying assumption of maintaining Savannah River's historic pool level.</p> <p>21. Sampling of the gravel bar downstream of the NSBLD as part of the "EVALUATION</p>
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		<p>by removing the New Savannah Bluff and Dam at the cost of ruining billions of dollars of local economy, and destroying the matrix and location of downstream "gravel bar", a spawning habitat for endangered species?</p> <p>23. What recourse does USACE have if removal of the dam will not yield targeted "biological" results?</p>	<p>OF SEDIMENT PARTICLE SIZE DYNAMICS AT GRAVEL BARS USED BY ROBUST REDHORSE (<i>Moxostoma robustum</i>) FOR SPAWNING IN THE UPPER SAVANNAH RIVER" " concluded that bar featured a mix of coarse sands mixed with well-rounded gravels, mostly in the 8-32mm range). The median particle diameter (D50) rounded to the nearest mm varied temporally from 1mm to 10mm. This bar is made up of a single layer of armoring gravel overlying a mix of coarse sands and gravels. The sand fraction (diameter < 2.0 mm) in this bar averaged 42%. Using NOAA Fisheries (NMFS 2007) definitions for suitable sturgeon spawning substrate types this sand has a Suitability Index of 0.0. The armoring gravel (diameter > 2.0 mm to < 32 mm) has a Suitability Index of 0.5. 1.0 indicates highest suitability; 0.0 the lowest. Therefore the majority of this gravel bar is either not suitable for successful spawning or marginal for sturgeon. Homing behavior is shortnose and Atlantic sturgeon is well documented for returning to natal rivers to spawn both behaviorally and genetically. Spawning location for these species have not been identified in the Savannah River since eggs have not been collected.</p> <p>22. This project was authorized and funded by the U.S. Congress first as part of SHEP and then in the WINN Act. The best option to be successful mitigation would be to completely remove the lock and dam and have a free flow river run. This does not fit with the WINN Act which requires USACE to maintain the pool.</p> <p>23. Adaptive management plan can be found in Appendix D of the 2012 Final EIS and is required of all USACE mitigation projects.</p>
239.	Oscar Flite, Ph.D, Evans, Georgia	<p>See Exhibit 6 for comment</p> <p>1. I am not convinced that fish passage above NSBL&D is sufficient mitigation for destruction of estuary habitat. I realize this is not the Corps' purview and in my comments, I have specifically asked for NOAA-NMFS justification for that cost-benefit analysis.</p> <p>24. Furthermore, I do not agree that impact to the overall endangered</p>	<p>1. The rationale for choosing a fish passage at NSBLD is covered in Appendix C of the SHEP 2012 EIS that this EA supplements. USACE held an interagency workshop, which was attended by NOAA Fisheries, USFWS, SC DNR, GA DNR, UGA, TNC and USACE. The group reviewed the project's expected impacts to SNS, and evaluated the effectiveness of the mitigation options available. The natural resource agencies preferred removal of the Lock & Dam, followed in priority by</p>

		<p>species fisheries in relation to impacts of known and protected spawning habitat, the gravel bars below NSBL&D, has been fully thought through given the homing instincts of these protected species.</p> <p>Experts that have studied Savannah River fisheries have concluded that several endangered species rely on the gravel bars below NSBL&D for suitable spawning habitat. Grabowski and Isely (2006) showed that the endangered (Georgia listed) robust red horse relied on the only two known gravel bars below NSBL&D for spawning and showed a high degree of site fidelity for spawning at those two sites.</p> <p>25. Mitigation of gravel bar impacts could possibly be achieved through enhancement of the gravel bars below NSBL&D once construction is complete and should be part of an overall adaptive management program.</p> <p>26. As a result of the drawdown and observations of the immediate sediment exposure and stream bank failure impacts, I am convinced that the pool elevation has to remain at current condition, generally within 115' elevation +1'; any other scenario would cause significant economic and water quality impacts.</p> <p>27. My recommended alternative is 2-8 with addition of the adaptive management components outlined herein.</p>	<p>a Full River Rock Ramp. Using a recently approved design for SNS passage on the Cape Fear River in NC, the attendees agreed on general design criteria for a successful rock ramp passage structure. USACE then used those criteria to develop and evaluate several alternate designs.</p> <p>2. Homing behavior is shortnose and Atlantic sturgeon is well documented for returning to natal rivers to spawn both behaviorally and genetically. Spawning location for these species have not been identified in the Savannah River since eggs have not been collected. The gravel bar downstream of the NSBLD is thought to be a spawning location. Sampling as part of the "EVALUATION OF SEDIMENT PARTICLE SIZE DYNAMICS AT GRAVEL BARS USED BY ROBUST REDHORSE (<i>Moxostoma robustum</i>) FOR SPAWNING IN THE UPPER SAVANNAH RIVER" concluded that bar featured a mix of coarse sands mixed with well-rounded gravels, mostly in the 8-32mm range). The median particle diameter (D50) rounded to the nearest mm varied temporally from 1mm to 10mm. This bar is made up of a single layer of armoring gravel overlying a mix of coarse sands and gravels. The sand fraction (diameter < 2.0 mm) in this bar averaged 42%. Using NOAA Fisheries (NMFS 2007) definitions for suitable sturgeon spawning substrate types this sand has a Suitability Index of 0.0. The armoring gravel (diameter > 2.0 mm to < 32 mm) has a Suitability Index of 0.5. 1.0 indicates highest suitability; 0.0 the lowest. Therefore the majority of this gravel bar is either not suitable for successful spawning or marginal. Concur there is evidence that the state listed but not federally listed robust red horse uses this gravel bar for spawning. We agree the downstream gravel bar is of great importance. We conducted additional hydraulic modeling to consider potential impacts to the downstream gravel bar under different flow conditions.</p> <p>The preliminary results of that hydraulic modeling suggests movement of the</p>
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gravel bar will be minimal. This supports findings of Jackson and Long (2011), which noted no significant change in the location of the gravel bar under flows as high as 30,000 cfs. The full-width, step-down arrangement of the rock ramp will also act to dissipate water velocities. This should further reduce the likelihood that the rock ramp will significantly affect the location of the downstream gravel bar.

3. We agree the downstream gravel bar is of great importance. We conducted additional hydraulic modeling to consider potential impacts to the downstream gravel bar under different flow conditions.

The preliminary results of that hydraulic modeling suggests movement of the gravel bar will be minimal. This supports findings of Jackson and Long (2011), which noted no significant change in the location of the gravel bar under flows as high as 30,000 cfs. The full-width, step-down arrangement of the rock ramp will also act to dissipate water velocities. This should further reduce the likelihood that the rock ramp will significantly affect the location of the downstream gravel bar. The Adaptive management plan can be found in Appendix D of the 2012 Final EIS.

4. There were no reported stream bank failures during the simulation. Any new mud flats exposed would become vegetated during the first growing season. The removal of the lock and dam and construction of the weir as well as the lower pool would not change the quantity, quality or timing of water in the Savannah River.

5. Thank you for your comments. Any additional cost for this alternative would have to be paid for by the Local Sponsors.

240.	Kimberly-Clark Beech Island	This letter and attachments constitute Kimberly-Clark Corporation's comment on the Corps' Report and recommended project design Alternative 2-6d in relation to impacts on our Beech Island manufacturing facility.	Thank you for your comment. The elevations seen in the pool during the February simulation were lower than the with-project levels discussed in the draft report. An after action review of the Simulation has been added as Attachment 4 to the Engineering Appendix, and it discusses conditions seen during the drawdown and why those conditions differ from
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Approximately 1,300 South Carolinians and 700 Georgians work at K-C's Beech Island Manufacturing Site to produce and distribute tissue products and diapers under brand names such as Kleenex®, Cottonelle®, Scott®, Huggies® and Pull-Ups®. Our economic impact on Aiken County and the CSRA is extensive, including K-C's average annual wage of over \$78,000 plus full benefits and over \$101 million spent with other South Carolina businesses in 2017. From an environmental stewardship standpoint, we recycle the majority of our process water, convert methane gas from 3 Rivers Landfill into energy and recycle or repurpose 90% of our manufacturing waste.

Our interest in a timely replacement or modification of the NSBLD stems from the fact that Beech Island cannot manufacture tissue and paper towels without the reliable water supply the dam has historically provided. Failure of the NSBLD would likely cause substantial, if not complete, loss of water supply which would shut down most if not all of our tissue and towel production. Loss of work for a large percentage of our workforce would follow and the loss of sales to customers such as Walmart, Target and Costco would begin to mount at nearly \$5 million per week conservatively. Relocating our intake facility into an undammed river would take time due to contractor availability and permitting requirements and the cost would well into the millions. We appreciate the Corp's commitment to design and execute a project in a timely manner as authorized in the Water Infrastructure Investment Act of 2017.

what we expect for the with-project condition. Discussion of model uncertainty and sensitivity analysis is presented, as well as unique conditions that occurred during the simulation. Perhaps most importantly, the flashboards at Steven's Creek Dam that normally reregulate releases from JST are discussed. The flashboards were being replaced at the time of the simulation, and during periods when JST wasn't generating hydropower, releases and flows downstream dropped close to zero. This scenario was not clearly communicated prior to the simulation, nor was it documented in the Draft Report or Engineering Appendix. Replacement of the flashboards occurs infrequently (once every 25+ years) and conditions seen when the flashboards are not reregulating flows should not be considered representative of the with-project condition. The flashboards being down during the simulation was very unfortunate timing since the attempt was to demonstrate normal with-project conditions for the public.

However, based on observed conditions in the NSBLD pool during the Corps' recent weir simulation, Kimberly-Clark now has concerns about the suitability of Alternative 2-6d to maintain the pool for water supply. For each day of the simulation, Kimberly-Clark engineering personnel collected data and made

Kimberly-Clark has determined the classification of this information to be "Public" observations at our raw water intake structure, river pump house and effluent discharge pipe. After a detailed review of data and observations, Kimberly-Clark has concluded the following:

1. The USACE river level model for Alt. 2-6d overestimates the pool elevation at K-C's intake structure by 12"-16". The lowest elevation observed at K-C's intake during the simulation was 111'-4" (NGVD29) when flows ranged between 5,600-6,800 cfs on the mornings of 2/13/19-2/14/19. While the Corps' 2018 Mitigation Analysis for Impacted Water Users listed Alt. 2-6d a pool elevation at K-C's intake of 111'-4" (NGVD29), that was for the much lower flows of 3600 cfs. Photos of the intake during the simulation and a drawing are attached (#1-2).

2. The water in the pool from the NSBLD to K-C Beech's intake appears to be relatively flat – rather than stacking to a higher elevation upstream of the dam as the USACE river level model projects. Per USGS Water Station data collected during the Simulation, the elevation at K-C's water intake averaged a mere 0.20' higher than at the dam when flows were 5,600-5,900 cfs. Based on Corp's documents (HEC-RAS Results 2/26/19, Updated Engineering Appendix), the river model for Alt.2-6d indicated the elevation at K-C's water

intake would be 1.3' higher than at the dam at flows of 5,000 cfs. So, during the Simulation the water stacked upstream between those two points was more than a foot lower than the model predicted. Thus, a 109' fixed weir does not appear to be a viable design for reliably impounding a pool with a minimum of 110'-2" elevation at 3,600 cfs.

3. Kimberly-Clark therefore expects to see cavitation and pumping inefficiency at our raw water intake pumps at low river flow conditions under Alt. 2-6d. Based on performance specs of our pumps and the design of our intake structure, Beech Island Site technical team believes that our river intake pumps will perform normally down to a pool elevation of 110'-2" (NGVD29). With simulation flows of 5,600-6800 cfs producing an elevation at our intake of as little as 111'-4", we expect lower flows of 3600 cfs will interfere with pumping operations. Mitigating this risk to our water intake system would require approximately \$350,000 for the purchase and installation of new pumps that function more efficiently with lower Net Positive Suction Head (NPSH). Such work would have to be coordinated to coincide with planned facility shutdowns.

4. Additional impacts of Alt. 2-6d not addressed in the Corp's 2018 Mitigation Analysis for Impacted Water Users, to Kimberly-Clark's effluent discharge pipe, will also require action. Lower river levels expected with Alt. 2-6d will require modifications to the facility effluent outfall pipe to ensure 100% compliance with Kimberly-Clark's SCDHEC discharge permit. It is anticipated that the pipe and diffuser will need to be extended 30' to 40' further into the river and lowered by an estimated 5 feet to achieve similar submergence and dispersion. While exact modifications will be determined

		<p>by the river bottom topography and requirements of SCDHEC and USACE, preliminary cost estimates range from \$500,000 to \$900,000. This work must be coordinated to coincide with planned facility shutdowns. Photos of the outfall during the simulation are attached (See exhibit 3). Kimberly-Clark has determined the classification of this information to be "Public"</p> <p>Therefore, Kimberly-Clark Beech Island Site urges the USACE staff to focus on a design alternative to Alt. 2-6d that can reliably impound a pool with a minimum of 110'-2" (NGVD29) elevation at 3,600 cfs and comply with the WIIN Act and Savannah Harbor Expansion Project timeline. We also expect that such a project will be funded by the USACE and its current non-federal partners and constructed and operated by the USACE.</p> <p>Thank you for your consideration of this request and the stake that Kimberly-Clark and our Beech Island employees have in this vital water supply project. If you require further information from us, please contact us anytime.</p>	
241.	<p>Members of South Carolina and Georgia Congressional Delegation Letter to ASA (CW) R.D James and Commanding General and Chief of Engineers, Lieutenant General Todd T. Semonite</p>	<ol style="list-style-type: none"> 1. We write to you to express our concerns regarding the future of the New Savannah Bluff Lock and Dam (NSBL&D) and express the intent of Congress for Public Law 114-322, the 2016 Water Infrastructure Improvements for the Nation Act (WIIN). 2. It is our hope that by clarifying the Congressional intent and highlighting our concerns regarding the impact of Alternative 2-6d on the water pool level, which is vital for municipal and industrial water supply for the surrounding area and recreational activities for the citizens of North Augusta, Augusta and surrounding communities, the U.S. Army Corps of Engineers can arrive at a solution that benefits both the 	<ol style="list-style-type: none"> 1. Thank you for your comments. The 2012 configuration did not meet the specifications of the 2016 WIIN Act which required in-channel fish passage. The 2016 WIIN Act changed previous legislation that authorized the 2012 design. Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. 2. Recommended Plan 2-6d preserves the pool for water supply and recreation.

Commented [PANCUC(1)]: Needs revisited

communities along the Savannah River and the Corps.
 On November 15, 2018, the Corps announced Alternative 2-6d, which would remove the lock and dam and construct a fixed weir with a dry floodplain bench, as their preferred option for the future of the NSBL&D.

3. On February 9, 2019, the Corps began a simulated drawdown test in order to demonstrate the effects of Alternative 2-6d on the pool levels, which are vital for water supply and recreational activities for the surrounding communities.

4. On February 15, 2019, the Corps halted the drawdown simulation after effects of the river drawdown resulted in instability of the Georgia riverbank in the residential neighborhood of Goodale Landing.

5. In addition, the simulation resulted in numerous docks becoming useless for recreational activities while they sat in the mud given the reduced pool level. Clearly these results do not reflect the intent of Congress.

6. The WIIN Act of 2016 allows for the modification or removal of the NSBL&D to allow for the passage of shortnose sturgeon, Atlantic sturgeon, and other migratory fish in order to mitigate the environmental impacts of the Savannah Harbor Expansion Project (SHEP) while also taking into consideration that the Corps must maintain the river conditions that were in place on the date of enactment. Congress clearly intended for the Corps to seek out a solution that would benefit both SHEP and the local communities. Unfortunately, as the recent drawdown test has proven, Alternative 2-6d does not appear to meet the requirements of the plain text of the legislation or the intent of Congress when it passed the WIIN Act. Communities like North Augusta and

3. The simulation event did not represent the condition expected with the implementation of the project. Ordinarily, the flashboards at Stevens Creek Dam even out the flows released from Thurmond for hydropower generation, reregulating the flow such that the hourly discharge throughout the day is equal to the average daily discharge from Thurmond. Since the flashboards were down during the simulation, this more constant flow was not held, and as a result, the low conditions were lower than planned for the simulation and the slope of the pool was reduced by the lack of continuous flow.
4. Goodale Landing retaining wall was not constructed in such a way that water behind the wall could drain. The Corps stopped the simulation and let the neighborhood provided information to repair the wall.
5. Some dock impacts (19) were expected; however, due to the conditions that were not typical, the water levels did not match the intent of the simulation. The Corps has requested funds to study a possible removal of the Savannah River Below Augusta Training wall, one of the locations where sediment has shoaled and where docks are impacted at low flow conditions.
6. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat.

Augusta have invested millions in improvements along their waterfront and to say that Congress intended to thwart the economic growth by eliminating or severely hampering access to the river would be wrong. We encourage the Corps to consider the intent of Congress and to only pursue an alternative that fulfills the environmental requirements of SHEP while also protecting the investments of our riverfront communities.

We would also like to address the Corps' stance regarding the impact of the new structure on the depth of the pool. The 2016 WIIN Act mandates that the Corps build a structure that is "able to maintain the pool for water supply and recreational activities, as in existence on the date of enactment of this Act." The Corps' stated that their implementation guidance "interprets the language to mean the current functionality of the pool must continue to allow for water supply, recreation and navigation as it did on the date of the enactment" and further argues that the alternatives currently being considered "maintain[s] this functionality." However, we find this statement to be inaccurate given the reduced river level prohibited individuals from utilizing their docks for recreational activities, such as fishing, boating, kayaking. In addition, local industry has expressed concern that the preferred alternative will not maintain the pool necessary to supply their water intakes. We would like to understand how the Corps can justify that the preferred alternative maintains the functionality of the pool given the results of the recent drawdown and the fact that the test was aborted.

In closing, we ask that the Corps take into close consideration the intent of Congress as you select the final alternative. We must protect our riverfront communities and ensure the Corps follows the law to ensure that

		<p>the water supply and recreational activities are functional as they were on date of enactment.</p> <p>We look forward to continued engagement with you regarding the future of the NSBL&D and we appreciate your cooperation as we work together to ensure that our riverfront communities continue to prosper.</p>	
242.	Anthony J. Ewell, Ph.D.	See Exhibit 4	<p>The biological opinion implements requirements during construction to reduce impacts of sturgeon.</p> <p>Please see response to Comment 41 for discussion of the rock ramp at Lock and Dam #1 on the Cape Fear River, as well as fish lifts.</p> <p>Thank you for your comment. Flows in the Savannah River are a concern not just for endangered species but other species and humans alike. Proper flow management will be required to ensure all water users and natural resources receive sufficient amounts.</p>
243.	J. Martin Ford, PE. Augusta, Georgia	<p>After attending the workshop on March 6 and reviewing other published information concerning the plans for the New Savannah Bluff Lock and Dam, I have the following comments and concerns:</p> <ul style="list-style-type: none"> • At the outset, this project in the Augusta area has been initiated as a mitigating effort offsetting environmental damage coming from a project that benefits the Savannah area. In short, the Savannah area is benefiting and the Augusta area is paying the price. While this is a political issue and not an engineering issue, it is ultimately the backdrop for the entire conversation. • It does not appear that any thought has been given to expending money toward creating artificial shoals 	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>

		<p>downstream of the Lock and Dam which would seemingly have a better chance of success than any man-made obstruction in the river with artificial passages.</p> <ul style="list-style-type: none"> • Although I am not qualified as an expert on this topic, it would seem that resorting to a fish passage solution that attempts to recreate the situation prior to 1939 is a bit dubious. • The cost projections for the option that would include repair/replacement of the dam plus a fish passage have increased exponentially since the public discussion started, giving the appearance of manipulating the data to support the decision rather than reaching a decision supported by the data. • The damage to the pool through the Augusta area associated with the “rock weir” option has been well documented. The loss of real estate value, loss of recreational use, and general damage to the waterfront area is not acceptable and does not meet the original intent of the mitigation plan. The “rock weir” mitigation plan does not meet the requirement of maintaining the current pool level, and therefore is not a viable solution. 	
244.	Bob Trescott, Augusta, Georgia	<p>I am writing to you about a matter of interstate importance that will have lasting impact on the states of Georgia and South Carolina.</p> <p>The Savannah River has been important for trade since before the</p>	<p>Thank you for your comments. The USACE Savannah District’s focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool</p>

predecessor colonies were founded in the seventeenth and eighteenth centuries. She provides water for communities in both States and has growing importance for: community, economic, environmental and tourism development in both states in the decades ahead.

The U.S. Army Corps of Engineers has long been involved in the Savannah River Basin, building forts, levees, waterways, ports and dams. All those constructions were once solely involved with keeping things in and keeping things out or moving things along. But, as they have learned more about hydrological and other natural systems, the Corps has learned a lot about unintended consequences, mitigations and balancing outcomes.

While the Port of Savannah competes with other ports in Georgia and South Carolina, its expansion is a major benefit to both States and major commitments have been already been made. What they are learning about unintended consequences, mitigations and balancing outcomes in hydrological and additional natural systems has caused the focus and scope of work for Port Savannah to expand. That is always unnerving for those trying to meet budget and timeline limits.

Mitigation programs for the Port are reaching into upstream hydrology and habitat. Rushing partial mitigation efforts might result in more unintended consequences with major negative impact on communities on both sides of the river and on important habitat and their denizens.

All dams, structures, pools, channels, uses and impacts must be considered, for now and into the future. There are issues of flood and drought; withdrawal and drainage; real estate, economic and tourism development; pollution, nutrients and

of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure. Rehabilitating the New Savannah Bluff Lock and Dam is more costly than other alternatives, fails to allow endangered and threatened species to pass the location and it no longer serves the purpose of its construction – commercial navigation between Augusta and Savannah

		<p>vegetation; heat, oxygenation and turbidity; species of animals, fish and birds that depend on waters and wetlands; as well as human uses for transportation, recreation and fisheries.</p> <p>To oversimplify, I favor a structure below Augusta, that controls water levels, maintaining the pool, from high and low conditions, enables navigation, allows for the cleanout of debris and silt and allows for various needs of wildlife, like waterborne passage around or over structures.</p> <p>However, what is needed is a proper study for a Four Score Plan for the Savannah River Basin that considers all data, explores all options and looks far enough into the future. Considering the various pools, run, oxbows, wetlands, uses, impacts and unintended consequences within the entire basin.</p>	
245.	Bob Young, Augusta, Georgia	<p>Why does the Corps not restore the historic channel of the river to increase the mileage of the flow, oxygenation of the water and spawning habitat of the fish. The ox bows were cut off to facilitate commercial traffic, which is no longer applicable. Restoration of the ox bows should be part of the discussion. If not, why not?</p>	<p>Thank you for the comments. Unfortunately being able to restore the oxbows/cutoff bends within the Savannah River is not within the authority of the Fish Passage project. There is a separate authority to investigate restoring those oxbows/cutoff bends for ecosystem restoration benefits.</p>
246.	Randy Lowell, Willoughby & Hoefer, P.A., Charleston, South Carolina	<p>See exhibit 5: overall conclusion: DHEC, rather than the SRMC, possesses responsibility to make determinations of suitability of the Corps' proposed project for the NSBLD under the governing law for a 401 Certification and Navigable Waters Permit for the issuance or denial of such authorizations.</p>	<p>Thank you for the comments and determination that SCDHEC possesses responsibility to make determinations of suitability of the Corps' proposed project for the NSBLD under the governing law for a 401 Certification and Navigable Waters Permit for the issuance or denial of such authorizations.</p>
247.	South Carolina Department of Heather and Environmental Control	<p>Dear Ms. Armetta:</p> <p>I am writing in response to the public notice that the U.S. Army Corps of Engineers (Corps) issued on February 14, 2019, regarding the Draft Integrated Post Authorization</p>	<p>SAS is reviewing this request and our environmental assessment is that the water quality is not changed as a result of the WIIN Act required changes so a new water quality certification is not needed, but SAS is reviewing the SC WQC requirements.</p>

		<p>Analysis Report (PAAR) and Supplemental Environmental Assessment (SEA).</p> <p>In the Draft PAAR SEA public notice, the Savannah District states that updated Section 401 Water Quality Certifications from the States of Georgia and South Carolina are not being requested for the proposed action. Further, the public notice concludes that the materials that are proposed to be placed in waters of the U.S. to create the fish passage structure are the same quality as those described in the 2012 FEIS.</p> <p>As the agency charged with issuing Section 401 Water Quality Certifications, the South Carolina Department of Health and Environmental Control (DHEC) disagrees with the Corps' position that a new Section 401 Water Quality Certification is not necessary for the proposed project. Further, the South Carolina Attorney General issued an opinion on April 8, 2019, that concludes that the proposed construction in South Carolina waters requires review under DHEC's regulatory authority. A copy of the Attorney General's opinion is attached.</p> <p>Thank you for your consideration of this matter. Should you have any questions, please contact Heather Preston at 803-898-3105.</p>	
248.	U.S. Fish and Fish and Service, Don Imm.	<p>The U.S. Fish and Wildlife Service (Service) has reviewed the U.S. Army Corps of Engineers (Corps) February 2019 Draft Integrated Post Authorization Analysis Report (PAAR) and Supplemental Environmental Assessment (SEA), Fish Passage at New Savannah Bluff Lock and Dam (NSBLD), and Draft Finding of No Significant Impact (FONSI), which evaluates proposed changes to the fish passage feature of the Savannah Harbor Expansion Project (SHEP). The SEA</p>	<p>Thank you for your comments on the draft report. We will continue to keep USFWS as well as the other resource agencies in loop as we worked on the more detailed design effort.</p>

supplements the July 2012 Final Environmental Impact Statement (FEIS) for the SHEP. We submit the following comments and recommendations under the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. § 1531 et seq.) and the Fish and Wildlife Coordination Act (FWCA) (48 Stat. 401, as amended; 16 U.S.C. § 661 et seq.).

Endangered Species Act

The National Oceanographic and Atmospheric Administration (NOAA) should be consulted under the ESA for potential effects to federally listed species in the project area, which are under their jurisdiction.

Fish and Wildlife Coordination Act
Fish and Wildlife Coordination Act Report

Most recently, we provided your agency with a March 21, 2018, Fish and Wildlife Coordination Act Report (FWCAR) for the proposed New Savannah Bluff Lock and Dam Instream Fishway, Richmond County, Georgia and Aiken County, South Carolina, Project Authorization Change (PAC) Report in partial fulfillment of Section 2(b) of the FWCA. The purpose of the PAC Report is to propose changes to both the SHEP and the NSBLD, both federally-authorized projects, which are anticipated to result in a total Federal cost savings. The Tentatively Selected Plan (TSP) proposes de-authorizing the NSBLD, inactivating the lock and dam by cutting off the upper portion of the dam down to the sill and removing the lock structure, and constructing an in-channel rock weir to retain the pool of the NSBLD. The FWCAR outlines fish and wildlife concerns and planning objectives, describes the Corps'

No Action Alternative and the four alternatives, compares project impacts of the alternatives, and provides fish and wildlife conservation measures and recommendations that would address our concerns. As stated in the FWCAR, our preferred action at NSBLD based on the provided documentation and the alternatives presented in the PAC Report is Alternative 2-6, a Fixed Weir Crest with Floodplain Bench.

Draft PAAR, SEA, Draft FONSI Based on the general information provided by the Corps to date, the Service continues to prefer

Alternative 2-6. However, as to if option 2-6A, 2-6B, 2-6C, or 2-6D is the most preferable depends, in part, on the issues below:

□ Appendix A- Engineering Appendix (Pages A-31, A-32, A-34 and A-35) suggests the

Corps is considering paving the floodplain bench to enhance stability and limit erosion.

While we understand the issue, we have concerns regarding the incremental impact pavement may have on water quality, especially if the surface permits vehicle traffic. We

encourage the Corps to consider other surface treatments.

□ Appendix A- Engineering Appendix (Figures 16 through 20) represents options 2-6A through 2-6D, respectively. We note the straight-line weir structure of 2-6A (Figure 16) differs from the curved rock weirs shown in the other layouts. However, the conceptual drawing for 2-6A in Appendix A-1 - Attachment 1 does indicate curved weirs, so we assume the straight line weirs of Figure 16 are modeling simplifications and not a true departure from the conceptual design. Curved/arch rock weirs have a beneficial hydraulic and passage effect, so if the Corps' concept for 2-6A (or options 2-6, in general) now includes straight line

weirs, please clarify and provide any supporting information.

□ The floodplain benches of options 2-6 have the potential to a) provide additional beneficial passage paths at high flows, or b) strand and cause mortality of fishes when high flows recede. As the Service previously indicated (captured on Page 121 of the Main Report), we do not have sufficient information to evaluate this issue. Given the potential impact on migratory fishes, and especially sturgeon species, we recommend the Corps consider modeling synthetic flood hydrographs through its Hydrologic Engineering Center (HEC) model to estimate the frequency, magnitude and persistence of inundation of the floodplain bench. Additionally, we recommend that the design of the flood bench incorporate measures to reduce likelihood of stranding and is coordinated with the Service and NOAA (e.g. assessing slope and lateral conveyance channels), if this design advances.

State Wildlife Agency Comments under FWCA

The Service circulated our March 21, 2018, FWCAR, along with the Corps' February 2019 Draft PAAR, SEA, and Draft FONSI, to NOAA and the State wildlife resource agencies (South Carolina Department of Natural Resources and Georgia Department of Natural Resources) for review and comment. We subsequently received March 28, 2019 comments from the South Carolina Department of Natural Resources (SCDNR). SCDNR concurs with the recommendations presented in the Fish and Wildlife Conservation Measures and Recommendations section of the FWCAR and had the following specific comments regarding the Corps' alternatives:

No Action Alternative: SCDNR states that the NAA design needs to ensure that no sturgeon will bypass the entrance channel of the fishway coming downstream. SCDNR also recommends that the proposed sheet pile guide wall at the upstream entrance be replaced with a rock wing wall consisting of large boulders and that the design be modified to include high terrace resting pools to allow sturgeon to successfully move upstream. Without additional data and as currently proposed, SCDNR does not consider this alternative acceptable.

Alternative 1-1: SCDNR has concerns regarding the lack of sufficient information on hydraulics to accurately quantify the upper design flow and conditions at the fishway entrance which may represent a constraint on the availability and effectiveness of fish passage conditions at the site. Because of uncertainties regarding hydraulics at the bypass entrance and the possibility of certain conditions leading to delay or reduced amounts of fish passage of fish approaching on the South Carolina side of the river, SCDNR does not find this alternative acceptable.

Alternative 2-3: SCDNR continues to have concerns about the slope (10%) of the rock ramp on the upstream side of the proposed weir. They state that the Corps should explain in greater detail the basis for their determination that a 10% slope on the upstream side of the weir would not impede fish passage, particularly for large demersal species such as Atlantic Sturgeon. If insufficient data are available to support this determination, SCDNR recommends a shallower slope more closely approximating the original upstream design slope of 3% be implemented.

They also have concerns regarding the erosional impacts of this alternative on the gravel bar that is downstream from the NSBLD and strongly supports additional hydrodynamic and sediment transport modeling to fully evaluate potential impacts to the gravel bar and inform any needed modification of the selected alternative to minimize this potential. SCDNR also requests an assessment of habitat above the NSBLD be completed to categorize the available habitats as foraging, spawning, etc. They have strong concerns regarding the loss of known spawning habitat in exchange for unknown benefits. Without additional data and as currently proposed, SCDNR considers this alternative not acceptable.

Alternative 2-6: SCDNR concurs that the incorporation of the floodplain bench may have the benefit of providing enhanced passage along the bankside, providing that the bench is grass-lined to prevent erosion and additional sediment moving into the river system. They note that there may be some concern with fish being stranded during large flooding events as recently noted in the Cape Fear River, North Carolina, but it is unclear whether these mortalities occurred from stranding or lowered dissolved oxygen levels. SCDNR states that arch rapid type designs should be carefully designed to accommodate target diadromous species and has concern regarding the overall design and its efficiency in passing benthic species (specifically sturgeon and Robust Redhorse) based on passage effectiveness at Lock and Dam #1 in the Cape Fear River. They consider a level of uncertainty still remaining regarding the overall level of effectiveness in

passing some target species.

Alternative 2-8: SCDNR agrees with the Service that the flood gate structure presents new hazards and complications to fish passage. Because of the potential for entrapment of sturgeon in the gated bypass, SCDNR does not find this alternative acceptable. In summary, SCDNR remains concerned regarding the possible erosional impact of any modified fishway design on the gravel bar downstream of the NSBLD due to its role as important spawning habitat for sturgeon species and the Robust Redhorse. They reiterate the recommendation for hydrodynamic and sediment transport modeling to fully evaluate potential impacts to the gravel bar and to inform any needed modification of the selected alternative to minimize this potential. SCDNR states that any selected alternative should affirm that negative impacts to the gravel bar would not occur and that by removing or altering the NSBLD, sturgeon would have access to additional spawning habitat. Any selected alternative must assure compatibility with continued availability and viability of the gravel bar.

Additionally, SCDNR reiterates the request for a habitat assessment above the NSBLD to categorize habitats as foraging, spawning, etc. and restates that they have strong concerns regarding the loss of known spawning habitat in exchange for unknown benefits. Due to uncertainties of net gains versus potential loss of sturgeon habitat and spawning grounds and effectiveness of fish passage designs for sturgeon, SCDNR has concerns with any of the proposed alternatives. They need assurances that benefits to all migratory fish species will

		<p>outweigh any potential impacts incurred as a result of this proposed project; until assurances are provided they cannot concur with the proposed actions. SCDNR requests the opportunity to review and comment on all design documents at each stage of the design process and supports the Service's request for the Corps' development of a fishway operations and maintenance plan in consultation with the natural resource agencies.</p> <p>Due to the lack of design detail and analyses regarding design at this time, we cannot provide our comments in complete fulfillment of 2(b) of the FWCA. We recommend the Corps implement the Service's recommendations in the FWCAR and this correspondence and provide detailed information as the preferred alternative and design progresses for the Service to be able to fulfill our 2(b) duties. The Service is willing to work with the Corps to expeditiously implement any recommendations. If you have any questions, please contact myself at 706-208-7501.</p>	
249.	Bridget Murphy Brown, Evans, Georgia	<p>When reflecting on the information I garnered at the 6 March Fish Passage Workshop, what struck me most was the high number of local and federal agencies involved in the plan to best address the sturgeon's plight due to the effects of the SHEP and the inadequacies of our aging lock and dam. Often when there are multiple governmental agencies working in collaboration, there are also competing interests. However, in this circumstance it seems that all parties desire an effective resolution that preserves the health of the sturgeon, yet, also maintains the pool level of the Savannah River at the highest possible level. Clearly cost is an enormous</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower</p>

factor and the Corps appears to be in the unenviable position of answering the mandate from NOAA for the fish passage at the lowest cost. Most, if not all interventions, will result in an unsavory reduction in river levels and will have profoundly negative effects on the recreation and aesthetic assets provided by the river when at it's optimal pool. As someone who has served on active duty in the military and who has been deployed on missions where multiple agencies must collaborate, I am ordinarily loathe to advocate for the addition of, yet another, governmental agency. My experience informs my opinion that few things halt progress faster than the inclusion of an additional department due to the competing interests and differing budget objectives. Yet, in this circumstance, I see an opportunity to access greater funding and catapult this challenging scenario into one that benefits the health of the local population and veterans across the nation. I believe that this region would benefit greatly from investment in the abundant opportunities for recreation. In particular, an adaptive sports center that seeks to outfit veterans who have incurred service-related injuries for activities such as cycling and kayaking would be fantastic. Such a facility could potentially be located near the New Lock and Dam and could include an adjacent pedestrian/cycling bridge to link an expanded trail system from one side of the river to the other. President Trump signed a grant for the PREVENTS task force last month to research and reduce the incidence of suicides amongst our veterans. Although the details on the actual

the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.

monetary amount behind this pledge were vague, it seems possible that some funding could be directed towards an outdoor center that is open to the public and free to veterans. If granted, this additional funding may also help to cover the costs of the fish passage/ lock and dam revision if the overall project objective is expanded to include this important need for both our citizens and veterans. The public health benefits of outdoor recreation are clear and inarguable. For veterans suffering from PTSD, there is no more effective therapy than time spent in nature with other veterans. There is a trifecta of healing that occurs from the endorphin rise that results from exercise, the soothing effects of the natural environment, and the camaraderie that develops on such excursions. There are already several organizations in the CSRA that serve the large veteran community in this capacity. Forces United, the Savannah River Group Sierra Club's Military Outdoors program and the Veterans for Clean Water Program are just a few of the local organizations that serve this mission. Pete Wray of Forces United, (formerly Augusta Warrior Project) seeks to serve the adaptive needs of soldiers and veterans with all types of disabilities, including amputations, by adapting recreational equipment for specific needs. Some, such as the Savannah River Keepers and the Sierra Club, also engage veterans in programs to assess the health of the river which not only gets them outside with other servicepersons, but also provides them with a sense of purpose and worth.

I cannot pretend to suggest that I fully comprehend all of the issues involved in this predicament. Even after attending the meeting and reading the posts on "Balancing the Basin" I remain uncertain on significant aspects of the proposed alternatives. It is understandable that multiple scenarios were presented in order to assure the public that great thought and consideration to cost and efficacy were part of this process. I am sensitive to the unenviable position that the Army Corps of Engineers must be in when trying to educate the community on this situation. However, at this time, it is still unclear to me if any "fish passage", at any cost, will truly be effective in addressing the plight of the sturgeon. My sense from the language used in the blog posts is that some lowering of the river is unavoidable in order to effectively aid the upriver traveling of the fish. If there is a chance that retaining the function of the lock and dam with the addition of a fish passage will both preserve the health of the fish and the level of the river near to what we currently enjoy; then I am in support of this option, even if the cost is daunting and will require private and local investment and the inclusion of more federal departments. Protecting the health of any endangered species is paramount and worthy of investment. As a nurse, veteran, volunteer leader and mother I am also an advocate for the physical and mental health of all citizens. As a local resident and property owner of a riverfront home (that will not be impacted by this intervention) I am invested in the economic and aesthetic health of this

		<p>community as well. I view this impending intervention as one that has the potential to actually benefit the community and veterans if the overall drop in the level of the river can be minimized as much as possible and infrastructure improvements are made which make the river and nearby trails more accessible to all persons, regardless of disability. Please consider the possibility of using this challenging dilemma as an opportunity to expand the recreational access to the abundant natural beauty the Savannah River provides. Creative thinking, political savvy and collaboration with additional departments has the potential to enhance the accessibility of the river and trail systems while also addressing the environmental needs and mandates. We have the opportunity to make the CSRA a destination for veterans, outings groups and persons with disabilities. This is also a chance to educate our youth on the consequences of development on our environment and possibly inspire our students in the importance of science and engineering for our future as a nation.</p>	
250.	Heather J. Seigler, Augusta, Georgia	<p>I'm writing to address some of my concerns regarding the Savannah River Lock and Dam. I work downtown on the Savannah River and am a resident of North Augusta, so the river is a part of my life daily. I understand that there are several issues including cost that are being debated publically and privately. Who will be responsible for the maintenance and upkeep of the area if the Lock and Dam is removed? What will the budget be to maintain this going forward regardless of the solution? How are the wetlands going to be affected? Has a study been conducted that includes maintaining the Lock and Dam its pool and providing an alternate spawning</p>	<p>The USACE and the non-federal sponsor will be responsible for the maintenance and upkeep of the fish passage mitigation feature</p> <p>Discussion of the impacts to wetlands as a result of the draft recommended plan can be found in the draft report in Section 3.6.4. The report has looked at a variety of alternatives as part of the project including keeping the lock and dam and building the fish passage structure around the dam. This was evaluated for various impacts including sturgeon habitat as well as wetland impacts and can be found in Section 3.6 of the report.</p>

		ground for the sturgeon? I appreciate you responding to some of my concerns.	
251.	Rose Abee, Jackson, South Carolina	<p>I have attended many meetings and open houses, read opinions and editorials, and considered the implications of the recommendations of the Corp. I realize, like many others in the Central Savannah River Area (CSRA), that a decision to remove the New Savannah Bluff Lock and Dam and replace it with a rock weir will result in irreparable harm to this vital economic region. While I understand and support the need to deepen the Port at Savannah, I have very real concern for the consequences of the recommended plan. It seems the future of the Augusta area has been neglected and omitted from consideration, that Augusta is of no concern. At some point someone forgot to ask "At what cost?" "What are we sacrificing in real human consequences?"</p> <p>The 2016 WIIN provided an alternative to rehab. and maintain the lock and dam structure. Despite overwhelming support for that option, the Corps has ruled out that completely. With that omission, I see many consequences. During the February 2019 simulation and the similar 2000 drawdown of the River we all saw the results. The very visible draining of swamp and wetland areas were not a surprise. The Corps prediction in the report, released February 2019, that less than one half of an acre of wetland would be impacted by this action is shocking. In our neighborhood alone, we have seen more than that. We have been told that our area and even part of our yard is federally protected wetland which we are prohibited from altering. Yet the Corps appears to simply ignore that, to consider themselves above the laws, or to be able to selectively choose what rules and regs they will follow while expecting</p>	<p>Please see Comment 41 regarding the use of rock ramps elsewhere in the country.</p> <p>Atlantic sturgeon of the South Atlantic DPS (which includes the Savannah River) were estimated to be 1% of their historical abundance at the time of listing as an endangered species in 2012 (NOAA 2012).</p> <p>The purpose of providing fish passage to the historic spawning grounds at Augusta Shoals is to address the adverse impacts to sturgeon populations arising from the Savannah Harbor Expansion Project (SHEP). For more details, please see response to Comment 221.</p>

the general public to remain compliant. Similarly, the finding of no significant impacts to other species is unbelievable. There are other endangered and protected plants, reptiles, birds, amphibians, migratory birds, even bald eagles which are present in the impacted areas.

The very concept of a rock weir, variations of which appear to be the only options given serious consideration, have not been proven to pass fish in other areas of the country where they have been implemented. No sturgeon, no salmon, no other fish that typically travels up freshwater rivers to spawn, virtually no fish have been documented to pass over such a structure. The February 2019 report (page 53) says that several locations, both above and below the NSBL&D, were studied and that no locations were identified as suitable for placement of a rock weir. The locations studied are said to increase flooding or need to have much larger structures to be effective.

Access to "historic spawning grounds" is repeatedly mentioned. Those areas are said to have been blocked by the L&D for 80+ years. Incidentally, there are in fact sturgeon in the Savannah River as far upstream as the Augusta area which apparently were not prevented from travel. They are seen to be spawning in shallow gravelly areas near the L&D. The rock weir concept cannot realistically provide promise that sturgeon will travel upstream 180 miles to access rocky shoals they allegedly have not visited in all those 80+ years. Are the sturgeon even endangered in the Savannah River? There has been no netting, commercial harvesting, or even recreational fishing for sturgeon for decades. The sturgeon is in fact observed regularly in the river.

The Corp report provides that "it was assumed that each alternative would

have the ability to pass fish equally, thus initially, fish passage was not included as a criteria." (page 49) Really? Now, two months later, it is said to be the only consideration, perhaps even more important than projected cost. Hindsight? No option can guarantee fish will use it, which the Corps now says it the primary goal of this project. Nationwide, there are many rivers with fish ladder designs that have been proven to actually pass fish upstream without removing dams. There is no mention in the reports, meetings, open houses, etc that any other such designs were even studied.

I have concerns about the fact that all options presented eliminate the possibility for navigation between the Augusta pool and the lower Savannah River. Augusta will become permanently landlocked. She will no longer be a Port city. I have read that some groups advocate a plan that would provide for passage for kayaks, rafts, canoes, and other non-motorized watercraft; however, no such possibilities have been considered for motorized boat travel. The Corps repeatedly says no such traffic has used the lock for some time. The truth is that no such activity has been possible due to the lack of maintenance and deliberate neglect of the lock facility for many years.

Over the past 20 years several studies, proposals, acts, etc. have been presented. Amid a period of controversy following another simulation by the Corps, the 1999/2000 approved plan was to repair the lock and dam facilities, build the fish passage structure on the SC side of the dam, and convey the facility to Aiken County and the city of North Augusta, SC. This plan subsequently received Congressional authorization. Additionally, the 2012 mitigation plan of the Savannah River Harbor Expansion Plan also included a SC side fish passage. There was a

feeling of relief for many that the fish passage would now happen under funding provided in conjunction with the SHEP. Similarly the 2014 WRDA advocated to keep the Lock and Dam with a bypass channel for fish migration beyond the dam. According to the February 2019 Corps SHEP fish passage assessment document, "NOAA concluded that the authorized design in SHEP would be sufficient for passage of Atlantic sturgeon as well as shortnose sturgeon thereby meeting the mitigation requirements from the SHEP." (page 3) That plan was to retain the L&D and construct an off channel fish passage on the SC side. The 2016 WIIN negated all of the previous work. What a waste of resources. The Corps continues to periodically rule out their own options. Each time the costs continue to skyrocket, going from the +/- \$60 million to now a few months later \$380 million dollars. Truly Unbelievable.

We have observed so much unreliable information and so many flawed calculations it is hard to keep up. The elevations throughout the report consistently and erroneously state the typical river elevation at the Fifth Street Bridge, the target elevation specified in the 2016 WIIN, and the observed elevation during the February simulation. Up and down the River, the actual levels were seen to be several feet lower than projected by the online simulation tool provided by the Corps. The measurements provided to the media were likely taken in the afternoon as the river levels fluctuated each day and increased each afternoon. On the afternoon of February 14th, the Corps held a press conference which the public was told they were not invited therefore could not ask questions until members of the press were gone. According to the gauge at Fifth Street Bridge that day, the depth increased by two feet in the three hours prior to the press event. On March 6, the Corps held a public meeting but told

		<p>attendees they were not allowed to ask questions. This meeting was widely publicized in media, Facebook and blog posts, etc. to include a presentation by Corps personnel at 5pm. Those arriving at 4:45 found that the meeting was over and attendees were leaving. Every few days the Corps changes or provides new information which it communicates via a blog post. The examples of flawed and changing information have been too many to elaborate in this letter. Should we believe or trust the Corps of Engineers with our future?</p> <p>I began by asking "At what cost?" Do we compromise this vital, growing, indeed booming economic region for the possibility of additional fish appearances? The plan is to convey the adjacent park to Augusta-Richmond County following the completion of its destruction. The weir plan will excavate into the park some 275' to build a flood plain bench along the waterfront. Will we allow the destruction of the entire CSRA for this experiment?</p> <p>The problem lies solely with the wording in the 2016 WIIN since it is being allowed to overrule and negate previously approved studies, all of which consistently provide a plan proved to be acceptable by the overwhelming majority of stakeholders. Why? Can't we find an acceptable compromise to coexist with the sturgeon? Even if it includes new legislation to amend the 2016 WIIN? That seems to be a workable solution! I hope so.</p>	
252.	NOAA National Marine Fisheries Service	NOAA's National Marine Fisheries Service (NMFS) reviewed the Savannah Harbor Expansion Project, Georgia and South Carolina: Fish Passage at New Savannah Bluff Lock and Dam [NSBLD] Integrated Post Authorization Analysis Report and Supplemental Environmental	Thank you for the comments and your support of the draft recommend plan. We will continue to with NOAA NMFS as we continue in the planning process and go into further design.

	<p>Assessment dated February 2019 (SEA), prepared by the U.S. Army Corps of Engineers, Savannah District. The proposed project is upstream of essential fish habitat (EFH) within the Savannah River; accordingly, the NMFS offers no comments or EFH conservation recommendations under the authorities of the Magnuson-Stevens Fishery Conservation and Management Act. As the nation's federal trustee for the conservation and management of marine, estuarine, and diadromous fishery resources, the NMFS provides following comments pursuant to authorities of the Fish and Wildlife Coordination Act and the National Environmental Policy Act. As described in the SEA, the Savannah District is mitigating for impacts to Atlantic and shortnose sturgeon habitats resulting from the Savannah Harbor Expansion Project (SHEP). The Final Environmental Impact Statement for SHEP proposed construction of a canal bypassing NSBLD on its eastern side and construction of a rock ramp within the bypass canal so fish can safely and freely move upstream and downstream of the dam. However, as explained in the SEA, the Water Infrastructure Improvements for the Nation Act (2016 WIIN Act) de-authorized NSBLD and required modifications to the fish passage plan included in the Congressional authorization of SHEP. Specifically, the 2016 WIIN Act directed the Savannah District to implement an in-river alternative for passing sturgeon. The Savannah District subsequently formulated a series of alternatives based on the 2016 WIIN Act, including 24 different fixed-crest weir designs. After completing initial evaluations, the</p>	
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Savannah District selected several designs for further assessment:

- No Action Alternative (NAA; the original SHEP authorization)
- Alternative 1-1 (repair lock wall with Georgia side Fish Passage)
- Alternative 2-3 (Fixed Crest Weir, 500 feet wide at elevation 106.2 feet NAVD88, with floodplain bench)

- Alternative 2-6a (Fixed Crest Weir, 500 feet wide at elevation 109.2 feet NAVD88, with floodplain bench)
- Alternative 2-6b (Fixed Crest Weir, 500 feet wide at elevation 106.2 feet NAVD88, with floodplain bench)
- Alternative 2-6c (Fixed Crest Weir, 500 feet wide at elevation 107.2 feet NAVD88, with floodplain bench)
- Alternative 2-6d (Fixed Crest Weir, 500 feet wide at elevation 108.2 feet NAVD88, with floodplain bench)
- Alternative 2-8 (Fixed Crest Weir, 500 feet wide at elevation 109.2 feet NAVD88, with gates)

Based on various considerations, including the effectiveness of fish safely and freely moving upstream and downstream of the dam without delay, the SEA identifies Alternative 2-6d, a nature-like fishway (NLF) with a fixed weir crest and floodplain bench, as the preferred alternative (also referred to as the recommended plan).

The NMFS has coordinated extensively with the Savannah District throughout development of these alternatives. Since 2000, the NMFS has advocated for either full dam removal (preferred) or construction of a ramp within the river up the face of the dam, similar to the rock ramp constructed on the Cape Fear River by the U.S. Army Corps of Engineers Wilmington District. Most recently, by letter dated April 8, 2019, the NMFS provided the Savannah District with detailed comments focused on the preferred alternative and Alternative 1-1. As noted in that letter, the full-

river-width NLF alternatives are more likely to pass fishes without delay than other alternatives. A full-river-width NLF eliminates the potential for poor fishway entrance siting and false attraction. A fishway spanning the entire width of the river makes entrance location irrelevant, minimizes attraction delay, and maximizes attraction efficiency. A full-river-width NLF also passes all river flows during non-flood conditions. This design ensures no false attraction occurs because all flows ultimately lead to the NLF structure. A full-river-width NLF ensures a continuum of hydraulics that provides a zone-of-passage across different river flow regimes. At low river flows, sturgeon will find a zone-of-passage through the deeper parts of the NLF while the shoreline zones will be too shallow for passage. At higher river flows, the deeper parts of the NLF may develop excessive turbulence and velocity, but the shoreline zones will become deep enough to provide a zone-of-passage. This design feature, and the hydraulic diversity it provides, ensures that regardless of species' swimming ability, fishes are more likely to find suitable routes of passage at a multitude of flow conditions. Based on experience with the NLF on the Cape Fear River, which has passed sturgeon successfully, the NMFS is confident the preferred alternative will achieve the goals set by the Savannah District and NMFS. The SEA, inclusive of Appendix D2, the draft U.S. Fish and Wildlife Coordination Act Report, provides a complete and accurate description of the life history information of migratory fishes likely to occur within the Savannah River near NSBLD. Species of note include Atlantic and shortnose sturgeon, American shad, blueback herring, and American eel. Improving the quality of aquatic habitat in this portion of the Savannah River by the removal of barriers will likely benefit many of these species, not only sturgeon.

		<p>SEA Section 4.4 Design and Construction states that specific design features regarding weir opening width, depth and maximum velocities as well as the minimum depth and length of resting pools between the weirs will be developed during the full design. The NMFS recommends the Savannah District base ramp slopes on reasonable assumptions of swimming performance by target species, not burst speeds, and include pools where fish can rest.</p> <p>SEA Section 4.10 Risk and Uncertainty raises the concern of stranding of fish during large flooding events. Immediately after Hurricane Florence in 2018, there were massive fish kills reported throughout the lower Cape Fear River basin. It is the opinion of researchers in the region that these kills were due to the lack of dissolved oxygen in the water for weeks, not stranding. Large numbers of American eels, catfishes, other fishes were noted on boat ramps in the shallowest of water trying to find oxygen. Accordingly, for Alternative 2-6d, the NMFS views the likelihood of target species stranding on the floodplain bench after flooding to be minimal.</p> <p>The NMFS appreciates the opportunity to provide these comments. Please direct related correspondence to the attention of Cindy Cooksey at 843-460-9922 (Cynthia.Cooksey@noaa.gov), Fritz Rohde at 252-838-0828 (Fritz.Rohde@noaa.gov), or Andrew Herndon at 727-824-5367 (Andrew.Herndon@noaa.gov).</p>	
253.	Cities of August Georgia and North Augusta South Carolina	See Exhibit 7	See separate document for Exhibit 7 responses
254.	Gloria Greenbaum, Augusta, Georgia	This is a protest against the lowering of the Savannah River, particularly the section running between Augusta, GA and North Augusta, SC for the purpose of replacing the Lock and	Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of

		<p>Dam with a rock weir. From research, I have found that the rock weir can be constructed in such a way that the snub-nose sturgeon can pass through. It is unfathomable that the Army Corps of Engineers is not able to complete such a device. Instead, it seems determined to destroy the Savannah for use by those who live nearby which it attempted several years ago, also.</p>	<p>the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>
255.	Buck Ellis	<p>I really think the PEOPLE of this area have expressed, loudly and clearly, that they want the SRL&D restored. If our , oh, so cost conscience government can spend thousands on a toilet, I'm confident that we can preserve our beautiful river front by restoring the LOCK & DAM.</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure. Rehabilitating the New Savannah Bluff Lock and Dam is more costly than other alternatives, fails to allow endangered and threatened species to pass the location and it no longer serves the purpose of its construction – commercial navigation between Augusta and Savannah</p>

<p>256.</p>	<p>Mary West</p>	<p>This comment was posted today by me to an ongoing conversation among Augusta elected officials, businesses, scientists, environmentalists and others. Please use it as my public comment and glean from it what you find applicable to my point - an EIS is necessary before you proceed.</p> <p>-----</p> <p>"I have not commented before so let me introduce myself. I am a former Member of the Georgia State House and Senate where I served on the Natural Resources and Environment Committee. There I successfully fought the move by a private company to utilize a west-coast-relevant, aquifer-injection engineering plan to inject ground water into the Floridan Aquifer in the Savannah and Albany areas. Just prior to my legislative service I finished 10 years in the GA Army Guard as the Chemical Officer for the Combat Engineers.</p> <p>I grew up in Richmond and Columbia Counties, live in Wrens and work in Tampa for an international, food quality trade association; and on a private research project regarding Everglades restoration and the recent algal bloom off the west coast of Florida. Interestingly, the Corps of Engineers (CSE) is factoring into the possible causes of the bloom. Nothing is definitive about their involvement. It's just interesting. My point for writing is to make a couple of corrections, a clarification, give some opinions, and provide some un-asked-for advice.</p> <p>Correction: The Georgia Ports Authority (GPA) is an agency of the State of Georgia. The Board Members are appointed by the Governor. GPA is a state budget item. Any money GPA spends or must pay out is collected in taxes, fees, or services.</p> <p>Correction: The cubic feet per second of the Savannah River is not 7000 or close.</p>	<p>A NEPA document is required for any activity that expends federal funds.. An EA determines whether or not the federal action has the potential to cause significant effects. Federal agencies prepare an EIS if a proposed major federal action is determine to significantly affect the quality of the human environment. USACE Savannah District has assessed the potential environmental impacts of the proposed action. Based on this assessment, a review of the comments made on the Environmental Assessment, and implementation of the environmental design commitments described in the EA and listed above, USACE Savannah District concludes that the proposed action will not result in a significant impact on the human environment. Therefore, an Environmental Impact Statement will not be prepared.</p>
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Clarification: The money that the CSE is planning to use toward whichever New Savannah Bluff plan prevails was budgeted in 2009 through President Obama and the Democratic Congress's "American Recovery and Reinvestment Act." The CSE is facing a use-it-or-lose-it situation. How far this money extends to the upriver lock and dam removals that are planned I don't know.

Opinions: There is no relationship between the Corps' planned lock and dam actions and the GPA harbor dredging. The supposed lengthening of the estuary section of the Savannah River is anecdotal and is being used by the CSE to hang on to Recovery Act dollars by causing fear among environmental organizations that the Shortnose Sturgeon, which is on the endangered species list, will be further endangered by a narrative that the estuary will travel approx. 180 miles upriver and claim these endangered fish. Where is the evidence and data to support each piece of the narrative?

One environmental organization saw an opportunity to benefit from the Corps' use of the Shortnose Sturgeon to alter the lock and dam system from the New Savannah Bluff to the Strom Thurmond Dam, a distance of about 36 miles. That 501(c)(3) public charity provides valuable environmental services and has a robust volunteer force -- however -- as part of their mission they promote recreational activities and it's the desire for enhanced recreational activities along the 36 mile stretch of the Savannah River that has played the part in this organization's abandonment of their environmental mission in favor of their recreational mission.

In the case of the CSE's plans to remove the lock and dam system from the New Savannah Bluff and up the requirement of evidence and research data for an environmental action

		<p>supersedes the desire for enhanced and environment-altering recreational activities. The recreational activities will lead to an altering of both the river and human environments along the length of the Savannah from the Strom Thurmond Dam to the Tybee Roads.</p> <p>Un-asked-for advice: The National Environmental Policy Act requires an Environmental Impact Statement (EIS) if a project might cause a change in environment, this includes human environment. There are ways to get exemptions and other ways to get out of the federal EIS but of the three Savannah River Basin member states North Carolina and Georgia require an EIS as well. Have an EIS completed and let's see what the recommendations for the lock and dam system are after that. Data is good. No or old data is bad.</p> <p>To the above-mentioned 501(c)(3) I value your work but you appear to be your own worst enemy. You have not filed your 990 federal tax returns since 2016 and are only a few months away from losing your status as a public charity. Get on it!"</p>	
257.	Luke Yelton, Appling, Georgia	<p>I am writing to share my feelings about the plan to install a rock weir in place of the New Savannah Bluff Lock and Dam. I believe that this project is a disgrace to the people of the CSRA. We have built an incredible urban core around our beautiful river. We host competitions on this very river and have constructed hundreds of millions of dollars of infrastructure centered on the river and its beauty (including stadiums, government buildings, and hundreds of homes).</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the</p>

		<p>The Corps has created this plan that would cause upwards of 50% of our river surface to be unusable due to water hazards. Why would this ever be suggested? What about the private docks that people have on the river? Why should they have to pay to move or remove their docks because of the proposed water drawdown? Do not ignore the citizens of the Augusta Metropolitan Area. We will not allow a corrupt government entity to come in and ruin the entity around which our entire area was built. Please choose to renovate the existing lock and dam instead. Do what so many people, and the elected officials (House members from both sides of the River, Governors of both states, Area mayors and commissions), have called for the Corps to do. Finally, in an area that has supported the Army in a large number of ways (two major VA hospitals, Major army hospital and HQ of the Army Cyber Command and Signal Corps, all sorts of community support for active-duty military and their families), do not bring about a stain on the world's greatest fighting force.</p> <p>Thank you, and I hope that the Corps chooses to withdraw their plan and work with President Trump and the United States Congress to allocate funding to repair the lock and dam and construct a fish passage.</p>	<p>shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure. Rehabilitating the New Savannah Bluff Lock and Dam is more costly than other alternatives, fails to allow endangered and threatened species to pass the location and it no longer serves the purpose of its construction – commercial navigation between Augusta and Savannah</p>
258.	David Fauerby, North Augusta, South Carolina	<p>I am opposed to the Army Corps of Engineers proposal to lower the pool level on the Savannah River in Augusta. If the sturgeon's current breeding ground will be displaced by salt water, has anyone considered building the proposed rock wier further downstream such that the fish will have a salt free breeding area between a new rock wier and a repaired dam? I believe the law passed by Congress clearly required that any changes required the water pool to be maintained at the existing</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and</p>

		average levels. Thanks for consideration.	comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.
259.	Amee Lowery	Please repair the lock and dam. It a part of the community.	Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure. Rehabilitating the New Savannah Bluff Lock and Dam is more costly than other alternatives, fails to allow endangered and threatened species to pass the location and it no longer serves the purpose of its construction – commercial navigation between Augusta and Savannah
260.	Velma Eckert, Richmond County, Georiga	Maintenance of the pool must be assured.	Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest

			<p>probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>
261.	Brinsley Thigpen, Augusta, Georgia	<p>As you know, maintaining the water level in the Savannah River above the New Savannah Bluff Lock and Dam (NSBLD) is not only what Congress intended in the WINN Act but also imperative to Augusta, GA and North Augusta, SC. I am deeply involved in this issues as a member of Congressman Rick Allen's staff, but also as a resident of Augusta, GA an promoter of our region. I am also the former CEO of the Augusta Sports Council which recruits and supports sporting events to Augusta. The law clearly states the pool must be maintained for recreational use as it was the day the WINN Act was signed into law. In my previous job, I know that the Savannah River is literally a venue to hosting and recruiting sporting events to our region. Removing the Lock and Dam and lowering water levels would not only impact events that already exist on the river, but those that have been already considered and will be considered in the future. This directly impacts recreational use of the river.</p> <p>Rep. Allen's office , as you know, has been in constant contact with the U.S. Army Corps of Engineers (Corps) and resource agencies throughout this process. I have been in several meetings with the Corps and seen first hand the lack of response to questions asked to the Corps or the vague response to questions asked. Also, the discrepancies to the evaluation matrix - how the numbers</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure. Rehabilitating the New Savannah Bluff Lock and Dam is more costly than other alternatives, fails to allow endangered and threatened species to pass the location and it no longer serves the purpose of its construction – commercial navigation between Augusta and Savannah</p> <p>With respect to the fish passage design, the Cape Fear does provide us with an example to guide our design. However, it is not the only example we will use to develop the fish passage. Other nature-like fishways that we will use as examples include the Howland bypass in Maine, the Eureka dam fishway in Wisconsin, the Bradford dam fishway in Rhode Island, and</p>

associated with the categories analyzed, process/evaluation of the passage of fish and the costs associated with the different plans submitted were never clearly explained or follow up with.

There are several concerns I have with Alternative 2-6d, the Corps' chosen plan to replace the New Savannah Bluff Lock and Dam. First, according directly to NOAA there is NO record of sturgeon above the Cape Fear Rock Wier. How can we use tax payer money - your money and mine - to do an alternative that we know has not worked? Secondly, the water levels caused harm to the banks of the river and put residents docks on mud. The Corps saw this first hand during the simulation and even ended the draw down and simulation earlier than planned because of this. Alternative 2-6d does not work.

We must control the water levels. Saving the NSBLD can be a cost effective option. We can use the turbines in the Dam to generate hydroelectric power and help to maintain the costs associated with maintenance of the NSBLD.

I know and agree that the passage of fish is the most important. There are other ways for the fish to pass than the proposed rock weir. No one wants ANY delay in the deepening of the Savannah Harbor. SHEP is so very important to our region and our country. However, the communities of North Augusta and Augusta should not suffer because of the deepening of the harbor. Both can be successful and be influential to Georgia, the southeast and our country.

Do not let the water levels fall. It's not only against the law, but also a true disrespect of our citizens and community.

the Kenyon Mills dam fishway in Rhode Island. In addition to these other nature like fishway examples, we will use the best available science on the swimming capabilities and behavior of shortnose and Atlantic sturgeon and other target species to design components of the fish passage structure.

For more information about what happened during the simulation event, please see engineering appendix A4.

		Thank you for considering our requests.	
262.	Thomas West	<p>As a concerned citizen I have sent in three comments and I yet to receive a response of any type. I again request an Environmental Impact Statement (National Environmental Policy Act) be conducted for the NSBLD Project and its numerous proposals and solutions. This includes the EIS covering changes to the Basin as well as to the surrounding areas including impacts to humans (recreation and safety).</p> <p>Consider this a negative response on how this project has been handled as well as the overall rush to complete a project and remediate it later mentality so far exhibited.</p>	<p>Thank you for your comments. The comments during the public comment period are compiled and then the team works to address each one. These comments and responses will be added to the final report that will go to our Division Office for review. Once our Division Office approves the report, we will post the final document along with the comment and responses from the public comment period on our public website for the public to access.</p>
263.	Thomas West	<p>I again request data supporting the use of a rock weir or a modified rock weir to include a reference to a relevant study along with supporting data for sturgeon (Atlantic and Short Nosed). Again provide the data... Also please provide the data for determining the success of the rock weir with the endangered species of fish.</p> <p>I have requested a project level EIS in a previous email. I ask for a specific EIS related to the development and implementation of a rock weir or a modified design of it to be supplied according to federal law and Georgia law.</p> <p>Consider this a negative response for you handling of this project and treatment of our community.</p>	<p>Thank you for your comments. USACE has utilized both (1) expertise through coordination with NOAA/NMFS fish passage design experts and (2) the 2016 joint publication by NOAA, USGS, and USFWS "Technical Memorandum Federal Interagency Nature-like Fishway Passage Design Guidelines for Atlantic Coast Diadromous Fishes" to design the fish passage structure at the New Savannah Bluff Lock and Dam. This design allows for a range of velocity and flow conditions across the structure and allows for the opportunity for successful passage of a range of fish species of ally body types, sizes and swimming capabilities. The specific design features regarding weir opening width, depth and maximum velocities as well as the minimum depth and length of the resting pools between the weirs will be developed during the full design. The technical memorandum can be found by putting the title into the search button via the internet.</p> <p>It was decided that an EIS was not needed to address the WRRDA 2016 Legislation changes on the Fish Passage mitigation feature for the Savannah Harbor Expansion Project at the New Savannah Bluff Lock and Dam and that a detailed EA analysis would be sufficient.</p>

<p>264.</p>	<p>Lawrence Lasher, Augusta, Georgia</p>	<p>It has been related to me by the Corps of Engineers that the only way that they will switch from the rock weir to a gate dam with a side fish passage would be if there was a significant human impact from the weir due to an effect from one or more of the following: city water supply, navigation, and/or recreation.</p> <p>I am a member of the Augusta Rowing Association and we hold our annual regatta which has an attendance of thousands of spectators and hundreds upon hundreds of participants.</p> <p>This regatta would be adversely affected due to (1) a narrowing of the boat course and (2) a shallowing of the river, if the water is lowered by the 2 to 3 feet caused by using the weir.</p> <p>Also, because of the steep angle of the dock ramps due to the lowering of the water, we would have to completely redo all three boat ramps used in the regatta at very significant cost, in order to make it safe for the boats to be brought up and down to the river.</p> <p>Other sporting events on the water that would be affected would be the annual triathlon, any recreational skiing in ski boats, and powerboat races.</p> <p>I submit that the Corps of Engineers must abandon the idea of using the weir and instead go back to the conventional dam like the present lock and dam. It would be easier to just repair the current lock and dam.</p>	<p>Thank you for your comments. The USACE Savannah District's must follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality, according to Implementation Guidance, of the upstream pool of the New Savannah Bluff Lock and Dam for the purpose of recreational navigation and water supply.</p> <p>Based on the simulation, the recreational navigation channel would be at least 5 feet in depth throughout the length of the NSBLD pool. According to Safe Water Sports and the International Waterskiing and Waterboard Federation, the recommended minimum water depths for water skiing, waterboarding, and jet skiing is 5 feet (1.5m). These water sports are not expected to be negatively impacted because water depths would be safe.</p> <p>Operational changes would keep pool elevations safe for hosting the Head of the South Regatta.</p> <p>Rehabilitating the New Savannah Bluff Lock and Dam is more costly than other alternatives, fails to allow endangered and threatened species to pass the location and it no longer serves the purpose of its construction – commercial navigation between Augusta and Savannah</p>
<p>265.</p>	<p>Phyllis Britt, Editor (ret.) of the Star newspaper in North Augusta</p>	<p>I would simply like to say that I have now lived through two test draw-downs to see the effects of eliminating the lock-and-dam on the Savannah, and both were a disaster.</p> <p>The damage to the North Augusta shore was horrendous.</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for</p>

		<p>I thought with the first draw-down that North Augusta, Augusta, Aiken County and SCE&G had a memorandum of understanding with the Army Corps Of Engineers that requires the Corps to upgrade the lock-and-dam and then the local entities would take care of the daily running and any future repairs. Obviously the Corps has not lived up to its part of the bargain.</p> <p>I would like to see the original agreement carried out. I know the local government entities have been setting aside funds on the basis of that good-faith agreement.</p> <p>Now it's up to the Corps to work toward carrying out their upgrades. Otherwise, the shoreline of North Augusta and Augusta will suffer mightily. The federal government was the one that opened up our shoreline to development based on the conditions exhibited 20 years ago. It behooves those at the federal level to maintain those conditions since now both sides of the river have developed residential and commercial properties dependent on the river being maintained at a certain level.</p>	<p>the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure. Rehabilitating the New Savannah Bluff Lock and Dam is more costly than other alternatives, fails to allow endangered and threatened species to pass the location and it no longer serves the purpose of its construction – commercial navigation between Augusta and Savannah</p>
266.	Charles Evan	<p>Good afternoon. I write to comment on the current plan to alter the Savannah River pool at Augusta. As a life-long resident of this community I have been an observer of our beloved river and consider it our greatest natural resource. However, I say this with the caveat: just as it is.</p> <p>The river of the 20th, and hopefully 21st, centuries is a beautiful watercourse that serves practical human purposes as well. All this is made so by the pool. Our community has developed for almost a century to depend on the pool.</p> <p>During the recent drawdown we had the chance to test the theory that the pool would not be so severely</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being</p>

		<p>affected by the proposed changes in the lock and dam. The proof was in the pudding and we all saw how quickly it lost its beauty and how the practical human purposes were threatened.</p> <p>I join our local congressmen and duly elected officials in demanding another solution to the dilemma that will truly protect the pool. Despite competing political and environmental concerns, some which originate in other locales, maintaining our pool is far more compelling than the speculative notion of reopening ancient migratory fishing paths. Also, it's far more important that some well intentioned, but poorly conceived idea of a whitewater park. Such ideas are distractions; keep the pool and we have no worry for how to beautify what once was a gem that became a mud puddle.</p>	<p>evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>
267.	Brandon Sell	<p>I am sure you have received hundreds of letters and heard all the logical reasons pleading with you learned folk to work out a solution to save the pool in the Savannah which has graced the City of Augusta in so many way over decades of time. Practically, it just doesn't make any sense to ruin the beauty of our river when there are alternatives that will achieve your stated goals. If it was your environment, in your City, you would truly be up in arms to devise a workable plan. It surely seems that you are digging your heels in just because you can and will use any means possible to leave the heart of our central business district with a muddy ditch to live with and serious flood control issues into the future.</p> <p>I do not have the vocabulary to pose a scientific argument or restate the many inaccuracies related to the Corps reporting, so I do hope you have carefully reviewed the comments from our local engineers and scientists representing thousands of hours of study to arrive at a plan that will work and are true solutions to the</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>

		<p>issues at hand. Also, there does seem that your studies regarding the spawning habits of the sturgeon, are at best incomplete and at worst flawed. There are scientists here who have experience in writing environmental impact reports who have read the Corps studies and raise serious concerns about their validity. I would think you would have a serious ethical problem basing your decisions on incorrect assumptions.</p> <p>Finally, one would think that the Corps of Engineers would want to work with, not against, the Cities of Augusta and North Augusta in improving the river, the migration of the native fish, flood control, and preserving the beauty of the environment. That's what you guys are about, right? Please rethink your position and do the right thing.</p>	
268.	Marlo Vernon	<p>The recent drawing down of the Savannah river to simulate proposed levels was a significant and dramatic preview of a new Augusta. Unfortunately, I can find few positives.</p> <p>As a public health professional and academic, I constantly tell my students that they need to be involved in the planning of environmental supports for physical activity to represent the community healthy perspective. Have any public health experts been consulted as to the effect on the health of the community this drawn down may have? I suspect not. The river and the canal are significant supports to physical activity in our community. Trails on both sides of the river encourage numerous walkers, runners, and bikers to enjoy the scenery while being active. Both South Carolina and Georgia suffer from abysmal rates of adult obesity (GA – 31.3%, SC – 34%), child obesity (GA – 13% and SC – 12%), and sedentary lifestyles (not being active) (31% of adult Georgians, and 28.4% in South Carolina). (Data from the State of Obesity organization and</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>

		<p>the American Health Rankings, source: CDC BRFSS).</p> <p>Research demonstrates significant improvement in mental health when the public has access to green spaces that are attractive and designed to promote relaxation. Both sides of the river continue to create these very spaces along the riverbank. The proposed changes would negatively impact the space and reduce the positive effects on mental health. The extreme difference in the environment once the draw down occurred concerned me greatly. The beautiful river scape – particularly near the trails and paths used for physical activity, was greatly diminished. Frankly, it was ugly where it had previously been beautiful. The drying mud was also odorous – a dead fish smell wafted up from the riverbanks with an unappetizing affect.</p> <p>In short, the Savannah river is a beautiful and significant resource to our CSRA. Maintaining access to the public will contribute to improved health – physical and mental – as well provide a source of community pride and social interaction.</p> <p>I strongly support reviews of proposals which will negatively impact the aesthetics, health, and economics of our area. Surely there is a compromise which will ensure that the Savannah River remains a positive environmental resource.</p>	
269.	Southern Environmental Law Center	<p>The Southern Environmental Law Center (“SELC”), on behalf of South Carolina Coastal Conservation League, Savannah Riverkeeper, and South Carolina Wildlife Federation, submits these comments on the above-referenced Public Notice on the Draft Integrated Post Authorization Analysis Report (“PAAR”) and Supplemental Environmental Assessment</p>	<p>Thank you for your comments. The USACE Savannah District’s focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the</p>

("SEA"), Fish Passage at New Savannah Bluff Lock and Dam ("NSBLD"), and Draft Finding of No Significant Impact ("FONSI") to evaluate proposed changes to the fish passage feature of the Savannah River Expansion Project ("SHEP") issued by the Savannah District of the U.S. Army Corps of Engineers ("Corps") on February 14, 2019. South Carolina Coastal Conservation League, Savannah Riverkeeper, and South Carolina Wildlife Federation entered into a settlement agreement for litigation related to SHEP and believe that successful fish passage around the NSBLD is an incredibly important component of the overall project. Although we believe that complete removal of the dam would provide the most effective fish passage strategy, given the unique circumstances of the NSBLD, we support the adapted version of Alternative 2-3, as described in more detail in a separate comment letter submitted by Savannah Riverkeeper, as the best recommendation for the fish passage at NSBLD. The proposed alternative includes a set of crest gates to allow for water control. This proposed adapted version of Alternative 2-3 brings the project into better compliance with the WIIN Act and satisfies the concerns voiced by the local community about pool level, flooding, and damage to the adjacent historic park. The Savannah Riverkeeper's recommendation includes consideration for the safety of recreational use and the historical significance and future potential of the adjacent park as a community resource. We support plans for the removal of the NSBLD and the construction of a rock dam equipped with crest gates as a fish passage solution. We urge

shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure. Unfortunately, the adapted version of Alternative 2-3 was not evaluated and discussed in the draft report and was not reviewed by the public and resource agencies. As a result, this alternative would not be allowed to move forward as the preferred alternative unless our non-federal sponsors request the USACE Savannah District ask us to evaluate it for potential consideration.

		<p>the Corps to select an alternative that provides a successful fish passage, includes an adaptive\ management plan to ensure successful passage, and meets the needs of the community. The proposed adapted version of Alternative 2-3, as discussed in further detail by Savannah Riverkeeper, achieves these goals. We appreciate the opportunity to submit these comments on the proposed fish passage at NSBLD. We respectfully request that the Corps select Savannah Riverkeeper's adapted version of Alternative 2-3.</p>	
270.	Meredith Baekelandt	<p>I've lived in North Augusta for 29 years and can't imagine North Augusta without a riverfront. Please do not change the river levels. I would like my kids to be able to enjoy the beauty & recreation the Savannah river has to offer.</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>
271.	Richard Rhoden	<p>Please keep the Savannah River level in Augusta at its normal level.</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District</p>

			<p>must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>
272.	Aiken County Council	See Exhibit 8	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure. For more information on what occurred during the simulation event in February 2019, please see the updated engineering appendix, Attachment 4.</p>
273.	Savannah River Keeper	See Exhibit 9	<p>Thank you for your comments and suggestions. Unfortunately, the adapted version of Alternative 2-3 was not evaluated and discussed in the draft report and was not reviewed by the public and resource agencies. As a result, this alternative would not be allowed to move forward as the preferred alternative unless our non-federal sponsors request the USACE Savannah</p>

			District ask us to evaluate it for potential consideration.
274.	Russell V. Mobley, North Augusta, South Carolina	See Exhibit 10	<p>Thank you for your comments. The USACE Savannah District's must follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality, according to Implementation Guidance, of the upstream pool of the New Savannah Bluff Lock and Dam for the purpose of recreational navigation and water supply.</p> <p>Based on the simulation, the recreational navigation channel would be at least 5 feet in depth throughout the length of the NSBLD pool. According to Safe Water Sports and the International Waterskiing and Waterboard Federation, the recommended minimum water depths for water skiing, waterboarding, and jet skiing is 5 feet (1.5m). These water sports are not expected to be negatively impacted because water depths would be safe.</p> <p>Operational changes would keep pool elevations safe for hosting the Head of the South Regatta.</p> <p>Any dock constructed in Section 10 navigable waters requires a permit. The permit states that "The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure ... the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work...without expense to the United States. No claim shall be made against the United States on account of such removal or alteration."</p>
275.	City of North August, Mayor Robert A. Pettit	<p>See Exhibit 11</p> <p>1. The conditions anticipated if Alternative 2-6d were implemented simulated in the February drawdown were clearly unacceptable to the residents of North Augusta. Citizens were assured prior to the simulation the change would be only minimally noticeable. In fact, riverfront residents were left with docks and</p>	<p>Exhibit 11 Responses:</p> <p>1. Please reference engineering appendix a, attachment 4 with information about the simulation event.</p> <p>The changes in appearance of the shoreline of properties along the pool are not yet know. The simulation event occurred after a period of higher water levels and high</p>

boats high and dry, far from the river's edge. The potential economic impact to all residents residing in what were riverfront homes would be devastating. The City of North Augusta's \$80+ million investment in the \$240 million Riverfront Village development along the banks of the Savannah River was put at risk. The river has been an integral part of North Augusta for more than 80 years. The City is "South Carolina's Riverfront."
 This impact is unacceptable. And clearly not what was intended when the WIIN Act was drafted.

2. A meeting was held in Washington, DC in November, 2017 with Senators Perdue and Isakson about this issue. M/G Donald Jackson, Deputy Commanding General for Civil and Emergency Operations, attended this meeting. A key point made by representatives of North Augusta, Augusta, and other local area officials was the language of the WIIN Act of 2016 required the pool elevation be maintained as it was on the date of enactment of the law.
 In response to my letter of December 4, 2017, General Jackson offered the following observation in his reply to me dated March 15, 2018:
 "With regard to your concern that existing pool elevations be maintained, please note that water levels in the pool fluctuate throughout the year and do not remain at a constant level. Since this is the case, the Corps' focus is to maintain the pool elevation at a level that ensures recreation and water supply needs are met throughout the year. The Corps intends to present a solution that allows for continued recreational opportunities, while providing sufficient depth for water users to continue to withdraw water from the pool and minimizing the risk of property damage due to flooding."
 The letter fails to acknowledge the interpretation of the local officials might, in fact, be the correct interpretation. Instead, the letter focuses on the natural fluctuation of the levels as the discharges from Thurmond Dam vary and as the gates

flows during the winter. The appearance along these properties may change when the actual project is constructed.

- 2. Thank you for your comments.
- 3. Updated costs are include in section 3.7, plan selection.

The Post Authorization Analysis Report Section 4.3 contains a description of each alternative with the construction cost and annualized operation and maintenance and major rehabilitation.

The cost appendix includes a detailed analysis of the recommended plan, alternative 2-6d that has been certified by our cost center of expertise. The increased cost of 2-6d is based on refinement of the construction methodology. The construction will occur over two years and will use a bifurcated coffer dam to construct the rock weir so as to maintain water levels for water supply.

Cost of the project for Operation and Maintenance and Major Rehabilitation of the NSBLD over the 100 year lifecycle of the project in terms of today's value are described on the blog as provided in the Commander's March 14, 2019, letter.

<https://balancingthebasin.armylive.dodlive.mil/2019/03/18/how-two-fish-passage-alternatives-compare/>

- 4. Please reference engineering appendix a, attachment 4 with information about the simulation event.
- 5. The decision document was determined to be an Environmental Assessment (EA) with a Finding of No Significant Impact (FONSI). The integrated EA is a supplement to the SHEP EIS. There are no issues of human health and safety because the NSBLD is not a flood protection dam. In changing from the South Carolina side fish passage to an in channel fish passage, does not significantly change environmental quality, does not contain uncertain environmental effects, or have any controversies related to environmental impacts as documented in

of the New Savannah Bluff Lock and Dam (NSBLD) are adjusted. The April 9, 2019 letter signed by the four U.S. Senators from South Carolina and Georgia and the Representative Joe Wilson from SC and Georgia Representative Rick Allen to The Undersecretary of the Army (Civil Works) and Lt. Gen. Semonite, Commanding General and Chief of Engineers, U.S. Army Corps of Engineers, addresses the intent of Congress as it relates to maintaining the pool elevation and the recent Corps position the Congressional intent in the WIIN Act of 2016 related to "functionality," not pool elevation. As the letter makes clear, Alternative 2-6d, does not meet the intent of the WIIN Act of 2016.

The City of North Augusta's position remains the language in the WIIN Act of 2016 specifically refers to the elevation of the pool as it was on the date of enactment of the law. This is the target elevation of 114.5 ft. NGVD 29. The City believes the Corps' Implementation Guidance is incorrect, and needs to be reissued to reflect the actual intent of Congress when the WIIN Act of 2016 was passed.

3. A letter from the Commander, Savannah District of March 14, 2019 provided updated cost estimates for Alternatives 1-1 and 2-6d. The cost estimate for Alternative 1-1 differed so greatly from the series of previous estimates as to be astounding. Additionally, no information was provided about the major assumptions, the rationale, or the basis of the costs was included. Essentially rendering the cost estimate little more than numbers to any who attempted to understand them. The City of North Augusta's letter, dated March 29, 2016, to Colonel Hibner requesting a more detailed explanation of the bases for the cost estimate remains unanswered. Without a more detailed explanation, including risk of failure to successfully meet the target criteria in the Amended Biological Opinion, it is impossible to provide complete comments on the several documents out for public comment.

the report. Cultural resources are able to be mitigated. These determinations are described in sections 5 and 6 of the PAAR.

- 6. NOAA NMFS is the regulating agency for the shortnose and Atlantic sturgeon, developed the conditions of the Biological Opinion and its amendments, and provided their opinion on the uncertainty of fish passage alternatives. The Corps is required to comply with the terms of the biological opinion in our planning, design, and construction activities.
- 7. A comprehensive evaluation of the mitigation needed for the shortnose sturgeon was conducted and is described in the 2012 SHEP EIS.

4. The Consortium of local governments and industries has been an integral part of discussions and meetings with the Savannah District for many years. In a letter to Colonel Hibner, dated, March 19, 2019, a number of specific requests were made to enable members to effectively evaluate the conditions simulated during the drawdown during the week of February 11, 2019. The request for the record of river elevations and flows measured at the various gauges throughout the period of the simulation, from beginning of the drawdown to return to normal conditions, remains unanswered. In addition, records of the discharges from the Thurmond Dam over the same period of time were requested to calculate the likely impact of lower flows on facilities.

Without this data, it is not possible to accurately estimate the conditions at drought flows, 3,600 cfs, at the City of North Augusta's drinking water intake. For that reason, it is important to make the point these comments are being provided based on limited and incomplete information.

5. The draft Finding of No Significant Impact is inconsistent with Army guidance as codified in Title 32, Subtitle A, Chapter V, Subchapter K, Part 651-Environmental Analysis of Army Action (AR 200-2). The City believes an Environmental Impact Statement (EIS) is required for the proposed action. The following conditions in §651 .41 are met, each of which standing alone requires an EIS:

- (a) Significantly affect environmental quality, or public health or safety.
- (b) Significantly affect historic (listed or eligible for listing in the National Register of Historic Places, maintained by the National Park Service, Department of Interior), or cultural, archaeological, or scientific resources, public parks and recreation areas, wildlife refuge or wilderness areas, wild and scenic rivers, or aquifers.

- (d) Result in significant or uncertain environmental effects, or unique or unknown environmental risks.
- (i) Be highly controversial from an environmental standpoint.

6. The Amended Biological Opinion (BiOp) establishes criteria for measuring the success of the alternative implemented at the NSBLD: achieve

- a) at least 75 percent upstream passage effectiveness for both Shortnose and Atlantic sturgeon
- b) at least 85 percent downstream passage effectiveness, and
- c) cause no serious injury to sturgeon that come into contact with the passage or dam structure.

The BiOp also states the previously presented fish passage design called an Off-Channel Rock Ramp would effectively pass sturgeon and other anadromous species. The proposed Alternative 2-6d is different than the Off-Channel Rock Ramp, and to the City's understanding, there is no existing structure which meets the criteria established in the BiOp.

Subsequent to opening the comment period for the subject documents, the City received from Representative Allen's office a letter to Colonel Hibner, dated 4/8/2019, from the National Marine Fisheries Service (NMFS) evaluating the relative effectiveness of Alternatives 1-1 and 2-6d for passage of fish. The conclusion in that report is that "Alternative 1-1 is unlikely to be as effective at passing fishes relative to the Alternative 2-6d."

This conclusion is vague and clearly not definitive in assessing the effectiveness of either alternative to meet the criteria in the BiOp. It also does not answer the concern expressed by the City and other local officials about the decision matrix contained in the Savannah District's November 14, 2018 presentation titled "Fish Passage at the New Savannah Bluff Lock and Dam" for effectiveness in passing fish. The

Evaluation Criteria in that presentation for Fish Passage contained three elements:

- a. +1 = Successful migration, no delay
- b. 0 = Successful migration, delay possible
- c. -1 = Inability to pass fish

The letter states, for Alternative 2-6d: "The fishes are more likely to find suitable routes of passage at a multitude of flow conditions." Note that nothing is said about there being "no delay."

Selecting Alternative 2-6d as the alternative for successful fish passage over Alternative 1-1 is unsubstantiated by the information presented by NMFS. It is the City's understanding there is no structure that has been shown to meet the criteria in the BiOp for passing fish. Without that evidence as a basis for comparison, the information provided by NMFS does not provide a basis for determining that Alternative 1-1 would not meet the criteria in the BiOp any more than it provides confidence that Alternative 2-6d would meet those criteria.

7. The BiOp is frequently cited as being most important in the decision making process.

Using the Savannah Harbor deepening as justification, the NMFS has determined access to the historic spawning area, the Augusta shoals, is the mitigation for the habitat destruction caused by dredging the harbor. The BiOp states "Moreover, passage at NSBLD is a pivotal component of NMFS's conversation and recovery efforts for both Atlantic and shortnose sturgeon." The NMFS has proposed mitigation far beyond that necessitated by SHEP dredging.

The BiOp states "Adult Atlantic sturgeon are currently using spawning areas downstream of NSBLD ..." "The NSBLD is more than 180 miles

		<p>upstream from the Savannah Harbor. The BiOp evaluates neither the extent of the spawning areas in the Savannah River between Savannah and the NSBLD nor the capacity of those areas to accommodate the recovery of the species of sturgeon, as clearly identified as an objective of NMFS.</p> <p>A more comprehensive evaluation of the 180+ miles of the Savannah River should have been completed prior to selecting the final alternative.</p>	
276.	The Chamber Augusta Metro Chamber of Commerce	<p>See Exhibit 12</p> <p>1) How many project concepts were developed during the planning period that repaired and modified the NSBLD so as to maintain the pool and meet other requirements including fish passage?</p> <p>2) What weight was given to the Chamber's letter of May 26th, 2017, (exhibit A) which emphasized the continued need for navigation so that the Augusta Region was not cut off from areas down river and that the recreational value of the park should not diminish? How were the Chamber's concerns about the engineering complexities of both impounding water and the passage of high flows considered in the formulation of project concepts, especially weirs?</p> <p>3) Please describe the Corps interpretation of (c) (1)(A)(II) that describes safe fish passage over the structure.... Was the language in the WIIN act to require a rock ramp to the crest of the dam for fish passage or around the dam/gates?</p> <p>4) Given that alternative 1-1 received a total score of 4 but a neutral rating on fish passage, what variations of alternative 1-1 were considered that improved fish passage? In reference to the previous question, did the Corps consider fish passage in channel, as a bypass or as a rock</p>	<p>Exhibit 12 Responses:</p> <p>1) Reference 3.3 of the Draft PAAR and the Engineering appendix for the discussion of the alternatives considered. More than 33 different fish passage design configurations were considered during the course of the study.</p> <p>2) All comments were considered without weight in the development of the PAAR.</p> <p>3) Here are the requirements as written in the 2016 WIIN Act, Section 1319 (c)(1)(A) (c) PROJECT MODIFICATIONS. — (1)IN GENERAL.—Notwithstanding any other provision of law, the Project is modified to include, as the Secretary determines to be necessary— (A)(i) repair of the lock wall of the New Savannah Bluff Lock and Dam and modification of the structure such that the structure is able— (I) to maintain the pool for navigation, water supply, and recreational activities, as in existence on the date of enactment of this Act; and (II) to allow safe passage over the structure to historic spawning grounds of shortnose sturgeon, Atlantic sturgeon, and other migratory fish; or (ii)(I) construction at an appropriate location across the Savannah River of a structure that is able to maintain the pool for water supply and recreational activities, as in existence on the date of enactment of this Act; and (II) removal of the New Savannah Bluff Lock and Dam on completion of construction of the structure; and</p> <p>4) Please refer to Section 3.4 and the Engineering Appendix for a description of</p>

ramp over the dam? Additionally, did the Corps consider the 2014 fish bypass design, which met the requirements of the BO, as a feature of an Alternative 1 design?

5) In a communication posted by the Corps on May 5th, 2017 (exhibit B) please clarify and further explain the Corps opinion that "The large costs for repair make the NSBLD a poor investment from the national perspective"?

6) In the same communication posted by the Corps on May 5th, 2017, it is stated that the cost to rehabilitate the NSBLD would cost approximately \$30 million. In a communication posted March 18, 2019 by the Corps (exhibit C), the cost to rehabilitate the NSBLD is now estimated to be \$93,711,000. Please provide details on the certified cost and factors relating to an increase in cost of approximately \$60 million.

7) In the March 18, 2019 communication, please further explain the following comment. Does this statement mean that the final project has already been specified by the Corps as a full-river fish passage and weir without consideration of any Alternative 1 concept? What is the purpose of public comment on the Draft Plan if the Corps has pre-determined the outcome?

"We are open to conversations with our non-federal sponsors and our water policy experts on other alternatives that would provide water surface elevations similar to Alt 1-1, but that include a full-river fish passage and weir".

8)The Evaluation Matrix utilized to compare and contrast alternatives specifies a cost of the No Action Alternative to be \$62,734,742. Is this a parametric or certified cost? What portion of the cost would have been investment for the project and what

the variations of alternative 1 that were considered. The language in the WIIN Act Section 1319 (c)(1)(ii)(1), requires construction across the Savannah River. A bypass channel is no longer authorized for the SHEP Fish passage design.

5) This report evaluates the requirement for retaining the lock wall and the repairs needed to sustain the gates for operation and the stability of the structure if alternative 1-1 was selected. The cost estimate for alternative 1-1 is included in the description of alternatives in section 3.5 of the PAAR.

6) Over the life span of the project, 1-1 would be rehabilitated twice. The cost to rehabilitate the NSBLD was described in March 18, 2019, in terms of today's dollars.

7) The Corps process allows for a locally preferred plan (LPP) to be presented by the Non Federal sponsor as described in Engineering Regulation, ER 1105-2-100, Planning Guidance Notebook (PGN). With an LPP, the Corps may select a higher weir if the benefits of that alternative were the same and the Non Federal sponsor agrees to provide the additional resources needed to implement this alternative. Since alternative 1-1 does not meet the same benefits as 2-6d for passing fish, it cannot be considered as an LPP.

8) Updated costs are include in section 3.7, plan selection.

9) The report describes the elevation of the recommended plan in terms of the 5000 cfs flow which is expected to be the flow less than 25% of the time. The lowest flow is equivalent to the weir height, 108.2 NAVD 88 or 109.0 NGVD 29 and will occur less than 0.5% of the time in drought conditions.

10) The Corps is considering removing the training wall which will require a separate study.

		<p>portion of the cost would have been rehabilitation to the NSBLD?</p> <p>Draft Plan Recommendation 2-6d</p> <p>It is the opinion of the Chamber that the current project modification proposed, 2-6D, does not meet the requirements of the WIIN Act because it fails to preserve an elevation adequate for water supply and recreational activities as in existence on the date of enactment of the Act.</p> <p>9) The Corps has interpreted the WIIN Act for depth of the pool to mean the functionality of the pool as of the date of enactment. Please state the minimum depth/range of water surface functionality the Corps has determined that will be required by the final project?</p> <p>10) Please explain if there are any plans to remove/deconstruct the training wall?</p>	
277.	J. Noel Schweers III, Augusta, Georgia	See Exhibit 13	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>

278.	Georgia Wildlife Federation	<p>Thank you for the opportunity to comment on the proposed Draft Integrated Post Authorization Analysis Report and Supplemental Environmental Assessment of the Fish Passage at New Savannah Bluff Lock and Dam.</p> <p>Georgia Wildlife Federation supports the concept of removing the existing structure and establishing a rock dam/weir to facilitate the passage of fish as generally outlined in option 2-6d. In addition to the consideration for the Atlantic and short-nosed sturgeon, passage design should also include other migratory fish such as American shad, herring, striped bass, American eel, Robust Redhorse, etc.</p> <p>Georgia Wildlife Federation also supports maintaining passage for boating, angling and recreational access up and down the proposed passage structure.</p> <p>Please advise if you have questions or concerns regarding this submission.</p>	Thank you for your comments and support of the draft recommended plan.
279.	Kim Evans, Augusta, Georgia	<p>My family has been in the Augusta area for quite some time. I have never been privileged to see the community become so united in a decision that will affect this area. Typically it is split, but not now. There has always been a group, perhaps not half, but a good proportion, that is on the other side. I have not spoken to one person that believes that you are on the right course. I believe that you are discounting the public's opinion on the dam in Augusta. When Democrats & Republicans unite on a plan that opposes yours...it is time to rethink what you've proposed. We have lived in the Augusta for over 30 years, so we've seen the announcements through the years where the dam would be taken care of through the Corps when Charlie Norwood was a Representative through now. Your proposed plan totally leaves out the beauty of the river in Augusta (this is a major thoroughfare for both Augusta & North</p>	Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.

Augusta, SC) and your Savannah River "letdown was downright ugly". I was embarrassed for you when I saw the normally beautiful & bountiful Savannah River after your river letdown.

The recreation that has benefitted the area (there are a number of races: Tri-Athlons in general, Boat Races, and simple recreational rides on the Savannah will all be eliminated by your plan). These events are not just for recreation, they bring in millions of dollars to the areas around us.

The water supply is a large concern. The water levels will be much lower. Fish are important, but so are people.

Property owners are at a disadvantage due to the change in direction that the Corps has taken. It's gone from "We will take care of the dam to We will do whatever is more economical". The once beautiful properties will take a substantial drop in property values. I've always taken up for the Army Corps, but I cannot do so at this time. I'm sure it's not entirely from the Corps, but the bad taste in the publics' mouth will rest with you. For some reason, it appears that this area was left out of the decision making when we are one of the areas that is most affected with this new "plan".

My advice to you is to rethink this proposal, come up with a plan that will help the CSRA, & not a plan that is to the detriment of the area. I am extremely disappointed in your proposal at this time. I hope that you

		change your mind & become a good steward of our great Savannah River.	
280.	Harry and Barbara Shelby, Friends of the Savannah River Basin	<p>The Friends of the Savannah River Basin (FSRB) appreciate the opportunity to respond to the request for public input on how to best implement the intent of the December 2016 WIIN Act. The FSRB has consistently supported addressing the issues associated with the Savannah River Basin as an integrated whole considering the needs of the many stakeholders.</p> <p>The NSBL&D has been in limbo for years with no realistic chance for repair either by the federal or local governments. The fish ladder is a key mitigation requirement for the SHEP project and the pool behind the Dam is important for drinking, industrial and recreational use by Augusta and North Augusta. We agree with the recommended solution of integrating the fish ladder into a weir and removing the decaying lock system altogether. Either option 2-6d or 2-6a would fulfill the requirements.</p> <p>We support the local stakeholders in maintaining the Augusta pool levels as high as possible during normal river flows. However, the resultant fish passage implementation also should not require any additional releases from the upper lakes over and above those specified in the current drought plan and any changes resulting from the Phase 2 Comp Study. In addition the final design should not cause any change to the normal release operations of the lakes. An additional recommendation would be to utilize the WIIN law direction to eliminate commercial navigation as an authorized purpose of the SRB Lake projects and restrict it to the Savannah Harbor portion of the basin. With no dredging since 1979 this purpose is no longer viable.</p>	<p>Thank you for your comments and overall support for the draft recommended plan. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>

281.	Gould B. Hagler II	<p>The lowering of the Savannah River Pool would be tragic to our economy and enjoyment of our river. Any solution to maintain the pool at its current (albeit fluctuating) levels would be better than lowering for the sake of the fish passage.</p> <p>Certainly some kind of solution must exist which allows the fish to pass and allows for flood control and boat passage as well.</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>
282.	Peter Delorme	<p>Your recent test of the lowered river level at Augusta GA shows how disastrously wrong is your proposed solution. I prefer that the lock be restored, but you should seriously reconsider what is being proposed by local elected officials.</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure. Rehabilitating the New Savannah Bluff Lock and Dam is more costly than other alternatives, fails to allow endangered and threatened species to pass the location and it</p>

			no longer serves the purpose of its construction – commercial navigation between Augusta and Savannah
283.	Brad Holdren, Augusta Rowing Club	<p>My name is Brad Holdren and I am a resident of North Augusta, SC so I have concerns about the water intake and the overall depth of the pool level of the Savannah River in the Augusta Area.</p> <p>I am also the head rowing coach at the Augusta Rowing Club so I have interests on both sides of the river pool.</p> <p>The comments I need to make might be easily dismissed by you the Corps of Engineers. After all you have a long history of ignoring people and pushing ahead with your plans. This is a problem inherent in all engineers, not just you, but it is a problem that must be recognized.</p> <p>Your "Plan A" for removal of the Lock and Dam and replacement with a rock weir is NOT based on good judgement.</p> <p>You are picking and choosing which parts of the law need to be followed "to the letter" and which can be left to your "interpretation" the same way right wing republicans pick and choose which parts of the bible matter and which do not. Your methodology is inherently flawed and every step of your process needs to be re-examined by clear thinking people.</p> <p>Problem 1. Maintaining the depth of the pool. Your math doesn't work. You cannot protect from both flooding and drought with a one size fits all approach. You KNOW you cannot do this. Stop trying. There MUST be a way to adjust pool depth built into your plan. Furthermore, if you're using the same mathematics that have given you the "estimated expenses" you've been throwing around, then I find ALL of your math to be suspect</p>	<p>Thank you for your comment. For this project we have followed USACE guidance and have tried to be as transparent and communicative as possible. The draft report and process to arrive at the recommended plan have undergone numerous internal reviews, public outreach sessions, communication with stakeholders, and an Independent External Peer Review by national experts with no affiliation with USACE.</p> <p>New Savannah Bluff Lock and Dam does not provide flood control for either the areas upstream or downstream of the structure. The recommended plan does not induce any additional flooding beyond what is seen today with the lock and dam in place.</p> <p>The cost estimate for the recommended plan is detailed in Appendix B to the main report. The cost estimate has undergone numerous reviews and certifications and is our best estimate for the cost of the structure based on the level of design available at this point in the project.</p> <p>The construction method and contractor have not yet been determined, but will follow USACE best practices.</p> <p>With regards to your comment on sturgeon, endangered sturgeon have been detected below the Lock and Dam during the spawning season. Vine et al. (2019) is the most recently published paper reporting both shortnose and Atlantic sturgeon exhibiting likely spawning behavior below the Lock and Dam. In addition, data collected from fish implanted with acoustic tags suggest spawning is occurring in two locations between the NSBLD and approximately Sylvania, GA.</p>

and recommend a return to Mr. Macs' 10th grade math course. The way you simply double or quadruple numbers in order to make one plan look better or worse. It's based on nonsense. If you cannot tell the truth in costs, how can we expect you to tell the truth on pool depth?

Problem 2. Construction. This project will either go to the lowest bidder, or to whomever you all have in your pocket. In either case, what guarantees do we have the the project will be completed properly? We all know that in both cases the company chosen will go bankrupt for some nonsensical reason or another and fail to complete the project leaving the pool depth maybe much more than 2' lower than the LAW REQUIRES.

Problem 3. No scientific studies... Where is your study showing how many fish are currently in the river? Where is your information on how far they come up the river now? How can you even tell if your fish passage works when you don't know how many fish are already here?

Problem 4. The short nose sturgeon don't climb and everyone finally knows this thanks to the input of some actual scientists... it's the reason that the Atlantic sturgeon has not been mentioned until only very recently in your jargon. This rock weir will NOT PASS any short nose sturgeon and you already know it, so why do you continue with this plan?

Problem 5. Who made the recommendation to congress that the fish need to travel further upstream as part of SHEP??? What studies have they done? What qualifications do they have?
Considering that your local expert "The Savannah Riverkeeper" is not qualified to do anything more than share her opinion, I would be interested in researching which

		<p>studies you've used to guide you through this process. The riverkeeper is not qualified to do anything beyond talk. She is a lobbyist and you know it. This is the reason you've paid her to lobby on your behalf.</p> <p>Problem 6. Your credibility - You've lied to us. You've done it boldly and blatantly. When you lie to the people so often, it's difficult for us to believe anything you have to put forward.</p>	
284.	Jessica Deliaagle	<p>I just wanted to let you know that I am IN FAVOR of a rock weir replacement at the lock and dam on the Savannah River in Augusta, GA. I feel that the the fish, wildlife, and water quality strongly outweighs the aesthetics and other selfish complaints I hear coming from the property owners along the river as well as the government officials located in Augusta, GA and North Augusta, SC.</p> <p>It should not be the Corps responsibility to keep the river a certain level for the city or property owners. The river is a god-given structure. Just as the waters rise during floods they should be able to recede on their own and as nature intends. I feel that when property owners purchased their land on the Savannah River they should have expected that a river rises and falls with the weather and not expect a river to be kept at a certain level for their recreational purposes.</p> <p>As a citizen who lives and works in Augusta, GA I also feel that the yearly maintenance costs to retain the dam with a fish passage (I think I saw it was \$950,000) is not a burden the city should want to take on. I feel that the yearly maintenance cost difference between a dam and the rock weir could be put to better use like in education or law enforcement enhancements.</p>	Thank you for your comments and your support for the draft recommended plan.

285.	Richard Pope, Appling, Georgia	I would like to voice my support for replacement of the lock and damn with the rock weir option, the costs to repair the existing structure along with up keep are just too high. The rock weir would also provide the possibility of creating a recreation whitewater course.	Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure. Rehabilitating the New Savannah Bluff Lock and Dam is more costly than other alternatives, fails to allow endangered and threatened species to pass the location and it no longer serves the purpose of its construction – commercial navigation between Augusta and Savannah
286.	General public	Save downtown Augusta and the pool effect. Don't destroy our riverfront	Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under

			existing conditions just by varying degrees as a result of the creation of the fish passage structure.
287.	Kathy Hughes Williams, Evans, Georgia	<p>I am a citizen of Columbia County, GA. Please know that maintaining the Savannah River pool at its current level is critical to the economic welfare of my community of Evans and all the communities of the CSRA. I request that you assure my taxpayer dollars are utilized accordingly.</p> <p>I request a positive response from you regarding this critical issue.</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>
288.	Dr. Van Haywood, Augusta, Georgia	<p>It is important to the growth of this major city in the state of Georgia to not lose the wonderful riverfront we have by removing the lock and dam which would lower the water level. As I understand it, the fish have not been to the area above the dam since 1937, so this seems a risky choice in hopes they would return. More importantly, the city of Augusta is making major developments on the river front, as is the city of North Augusta, SC. This development also includes the army Cyber Center, so many parties would be affected.</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage</p>

			structure. Rehabilitating the New Savannah Bluff Lock and Dam is more costly than other alternatives, fails to allow endangered and threatened species to pass the location and it no longer serves the purpose of its construction – commercial navigation between Augusta and Savannah
289.	Bill Mundy	It would be disastrous to lower the level of the water in the Savannah River at Augusta Georgia. Along the shore banks have been placed many homes and businesses and lowering of the water level would cause the bank to sink into the water and disturbing the foundation of those buildings. Repair the Lock and Dam to maintain the proper water level in the river.	Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure. Rehabilitating the New Savannah Bluff Lock and Dam is more costly than other alternatives, fails to allow endangered and threatened species to pass the location and it no longer serves the purpose of its construction – commercial navigation between Augusta and Savannah
290.	Philip Kennedy	I am very concerned and the possible drop in water level along the River front of Augusta GA with the removal of the lock and dam below Augusta. I would also like to see the fish being able to migrate upstream for spawning. How get we get good spawning and keep the water level up?	Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock

			and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure. Rehabilitating the New Savannah Bluff Lock and Dam is more costly than other alternatives, fails to allow endangered and threatened species to pass the location and it no longer serves the purpose of its construction – commercial navigation between Augusta and Savannah
291.	Al Yarbrough, Martinez, Georgia	I live in Columbia County , Georgia but the Savannah River has a large impact on the quality of the life of my wife and I. We attend events on the River frequently. If the Rock Wier is constructed leaving the water level two feet lower it will lead to the end of many events that depend on the water level. In addition it will be unsightly. I request that another look be taken at the options that would keep the water at its present level. I realize that much of the rationale has to do with the cost of repair and maintenance of the Lock and Dam. In addition there is a concern about the passage of fish necessary for their reproduction. Rather than to rush into something that we will all regret in years to come, please study other alternatives that could accomplish your goals in an economical way. We need to keep the River level where it currently is for the economic health and quality of life of all citizens in the CSRA.	Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.
292.	Robert Banks, Evans Georgia	Please repair the Savannah River Lock & Dam and build a fish passage for the Sturgeon. The destruction of the lock & dam would be catastrophic for us, as we live directly on the river, and for the entire CSRA. Please be cognizant of the effect of your decision on our area. Thank you in advance for your understanding.	Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and

			<p>water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure. Rehabilitating the New Savannah Bluff Lock and Dam is more costly than other alternatives, fails to allow endangered and threatened species to pass the location and it no longer serves the purpose of its construction – commercial navigation between Augusta and Savannah</p>
293.	Susan Llyod	<p>I have lived in Augusta, Georgia for over 40 years and have watched with interest the suggested changes to the New Savannah Bluff Lock and Dam. I am very opposed to the proposed plan by the Army Corp of Engineers! It is essential to the livelihoods and future of our communities that the pool of the Savannah River be preserved. Please work to develop new plans that consider community interests. Thank you.</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>
294.	Max Gorenssek, Aiken, South Carolina	<p>I am writing to provide my input to the US Army Corps of Engineers' plans for the future of the New Savannah Bluff Lock and Dam as a resident of Aiken County in South Carolina and a</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of</p>

		<p>frequent visitor to the Savannah River. The recent simulation of what the river level would be like at the Augusta and North Augusta riverbanks should the current dam be replaced with a rock weir confirmed for me that the rock weir is not a viable alternative. I am also suspicious of the study which found that repairing the dam and adding a fish passage would cost \$380 million over the 100-year life of the project, more than twice what was previously estimated. As a licensed professional engineer, I am aware that the assumptions on which such a study is based heavily influence the outcome and can be manipulated to achieve any result.</p> <p>I would like to see the current river level at Augusta maintained and a fish passage added to comply with the Water Infrastructure Improvements for the Nation Act of 2016. If that is most readily achieved by repairing the current dam, then that is what the Corps should do.</p>	<p>the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure. Rehabilitating the New Savannah Bluff Lock and Dam is more costly than other alternatives, fails to allow endangered and threatened species to pass the location and it no longer serves the purpose of its construction – commercial navigation between Augusta and Savannah</p>
295.	Dr. J. Reilly Hammond, Aiken, South Carolina	<p>I am sure that the voice of reason has already spoken and that while engineers made these proposals, other engineers of generations long gone also are the ones who made the current situation. The river has been a deep part of my culture for the last sixty years. All the more Augusta GA, is now embracing the river and a local minor league baseball team makes its home by the river in North Augusta, SC. As it has been for eons, the river is life to community.</p> <p>Plans may seem good on paper, models or even ethical considerations for fish. However to gut the pathos of a community who calls itself "CSRA" Central Savannah River Area, for paper ideas would be a shame.</p> <p>Respectfully,</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>

296. Frank Carl

I have a number of comments and some questions about the proposed changes to the Savannah Bluff Lock and Dam. I will start with my comments which will lead to some of the questions I have.

Failed Demonstration:
My first comment concerns the attempt the Corps made to demonstrate the appearance of the pool when the depth of the pool is lowered by two feet. It was apparent to me after the attempt by the Corps about 20 years ago to demonstrate the effect of removal of the dam on the flow regime that the public does not understand either the difficulty of engineering a precise demonstration or the hydrology of the system or the changes that will occur over a relatively short period of time after the level of the water is lowered. In both cases (20 years ago and recently) the demonstrations understandably went well beyond what the actual lowering of the river would have been, 20 years ago well below the 3600 cfs required by the EPA and most recently well below the two feet of lowering that would accompany the Corps' preferred plan. It is difficult to precisely control the pool level with all the variables that must be considered, so the overshoot of the desired lowerings is understandable. But of course, the public interpreted the lowest level reached as the level that would dominate after the changes. In addition, the public looked at the mudflats and the exposed aquatic weeds and did not have enough imagination to see either more lawn, more tree canopy or more wetland. It was just exposed aquatic weeds and mudflats.

The conclusion of my first comment is that I think that you overestimated the intelligence of the public when you offered them a view of the results of the new pool retention structure. You may have also overestimated your ability to mirror the conditions through the manipulation of flows. So, I recommend that if this kind of

Thank you for your comments. USACE completed an after-action review of the February 2019 simulation, which will be included in the final main report as Attachment 4 to the Engineering Appendix of the Main Report. Discussion of model uncertainty and sensitivity analysis is presented, as well as unique conditions that occurred during the simulation. Perhaps most importantly, the flashboards at Steven's Creek Dam that normally reregulate releases from JST are discussed. The flashboards were being replaced at the time of the simulation, and during periods when JST wasn't generating hydropower, releases and flows downstream dropped close to zero. This scenario was not clearly communicated prior to the simulation, nor was it documented in the Draft Report or Engineering Appendix. Replacement of the flashboards occurs infrequently (once every 25+ years) and conditions seen when the flashboards are not reregulating flows should not be considered representative of the with-project condition. The flashboards being down during the simulation was very unfortunate timing since the attempt was to demonstrate normal with-project conditions for the public.

We do not anticipate any major issues with sediment accumulation; sedimentation is discussed in Attachment 3 to the Engineering Appendix.

Operational changes from the JST dam would keep pool elevations safe for hosting the Head of the South Regatta and other special events outside of periods of drought and flooding

situation ever comes up again that you create artists' renderings of what the pool would look like under the new conditions rather than trying to create the actual physical conditions.

Effects of Dams:

My second comment is based on the premise that while most people understand why dams are built and what problems are solved by building dams, it is also true that most people do not understand the problems that dams cause. Nor do they fully comprehend how the functions of the impoundments change over time.

The New Savannah Bluff Lock and Dam is an example of both problems. It was built in the 1930s to facilitate commercial barge traffic and as an infrastructure project to provide jobs to help pull us out of the Great Depression. Politicians at the time did not anticipate that the impoundment created would facilitate municipal and industrial outtakes, recreation and the creation of valuable lakefront property. It is these later uses of the impoundment that are used as reasons for saving the impoundment today. Unfortunately, the proponents of neither the original uses nor the later uses recognize the problems that damming a river cause.

The obvious problem is the limitation that the dam creates for the anadromous (sturgeon, stripers, shad) and catadromous (eels) and potamodromous (robust redhorse) fish species. These species of fish migrate up and down the river during their life cycle depending on different riverine or marine environments during their different stages of life.

These life cycle patterns have developed over millions of years of evolution and the survival of each of the species depends on the continuity of the riverine environments on which they are dependent. Dams completely disrupt that environment. As the dominant species on the planet, humans are going to have to adopt policies that at least allow the existence of other species, if not

promote the existence of other species. If we do not recognize the interdependence of life on the planet, we will have a problem surviving ourselves. The reaction of some of the opponents of the Rock Weir that they do not care about those damn fish is really quite short sighted. Operable fish passages around (or through or over) dams are essential to the survival of many species of fish including some that are important to the fishing industry that helps feed our human population. For example, what happened to the shad industry that used to exist on the Savannah River? Dams also affect navigation on rivers. While the New Savannah Bluff Dam was actually built to facilitate a specific kind of navigation, it has inhibited other kinds of navigation. Since the commercial navigation that it was built for no longer exists the dam currently is an impediment to navigation. After the construction of the dam, the navigation of smaller boats (fishing boats, skiing boats, some pleasure boats, canoes, kayaks) has been inhibited by the requirement to call at least a day ahead of time to gain access to the lock and the \$35 fee for use of the lock. But the operation of the lock has since been discontinued so that no navigation past the dam is now available. Portage is the only option. The New Savannah Bluff Dam also has other physical effects on the river. Because of the increased depth of water and the decreased current caused by the dam, the dissolved oxygen on average is lower in the impounded water than it is either upstream or downstream of the impoundment. Higher concentrations of dissolved oxygen are better for the fish and other aquatic animal species. Also because of the change in depths and the decreased current caused by the dam, the biological niches in the impoundment are quite different from those in the free-flowing river. Even though it has been over 80 years since the dam was built, biological

equilibrium has not yet been reached. A rock weir similar to the shoals upstream of the dam would contribute to the establishment of biological equilibrium above and below the dam. Another problem common to dams is the lack of flushing effect on the accumulation of sediment. Given the number of dams upstream from the New Savannah Bluff Dam, sedimentation in the pool should be slower than it might be if there were a greater distance of undammed river upstream of the dam, especially in a quickly developing area like that of Columbia County. If a rock weir is built, the accumulated sediment near the dam will have to be dredged rather than flushed like it is now. Unfortunately, the most significant sedimentation occurs in the upper reaches of the impoundment, where the current first slows down and allows the sediment to drop out. This accounts for the sedimentation that makes the river shallow in places in downtown Augusta and in River North in North Augusta. Combined with a nutrient load in the water from fertilizers the shallow waters allow aquatic plants to take root helping to stabilize the accumulated sediment against the tendency of the current to move it along the river bottom.

Recreation:

My third comment is generated from my position as a former chairman of the Augusta Port Authority. The Augusta Port Authority has been working on the conversion of the Augusta riverfront from an industrial area to a recreational area. We would like to promote the recreational benefits of the rock weir and the potential whitewater course associated with that structure. We would also like to retain and enhance the recreational aspects of the Lock and Dam Park. It appears that the Obermeyer gates proposed for use by the Riverkeeper may provide the flexibility both to raise the average water levels in the pool while, at the same time, not increasing nuisance

flooding and to retain the recreational aspects of the Lock and Dam Park by eliminating the need for an artificial flood plain.

Recreational activities that are important to Augusta and dependent on the pool are general boating promoted by the marina and the public boat ramps, the regattas hosted by the Augusta Rowing Club, Paddlefest hosted by the Riverkeeper, the second largest Half Ironman in the world promoted by the Augusta Sports Council, the Southern Nationals drag boat races sponsored by the local Southern Nationals Committee hoping to bring a similar race back to Augusta, and a myriad of minor events like Dragon Boat Races, other swimming competitions, and wake boarding. These activities are important attractions to Augusta and to the Augusta economy. We need to do what we can to promote these activities.

Questions:

My fourth comment is a series of questions that I am still not clear about. For example, who pays for what? And this seems to be the crux of the problem in that the public does not understand the relative expenses and who will pay for them. As I understand the financial situation, the Corps will pay about \$83 million for whatever is the final decision of the coordinated organizations. It is my understanding that any costs over that basic cost will have to be borne by local and/or state sources. Is this correct?

A related question is the source of the funding that you have been authorized to contribute. Does some or all of the money come from the Georgia Ports Authority?

Given that with the lowered depth of the pool at the upper end (downtown Augusta), the training wall will become a navigational hazard, will the USACE remove that training wall as part of this process? If not, will the USACE facilitate permitting to allow local sources to at least cut the posts

		<p>supporting that wall to remove the navigational hazard? Given that sediment accumulates in the upper reaches of an impoundment over time, would the Corps be amenable to facilitate the approval of permits to dredge areas that have significant accumulation of sediments? The areas in question would include Waters Edge, especially the upper half. That part of the river suffers from the influent from Hawks Gulley, a swift current that carries the water swiftly into the river leaving garbage and sediment behind as the current from the Gulley hits the lesser current (but greater quantity of the water) in the river. A second area would be the on the Georgia side of the river from the 10th Street Dock to about 7th Street. This patch of sediment protrudes well into the river but I do not know why, although there is a storm drain from the third level of the canal that reaches the river near the upper edge of the sediment deposit. And finally, the area of the river between the training wall and the South Carolina side of the river from about 7th Street in Augusta to the Boathouse. This area of the river is encouraged by the training wall to trap sediment. Removing the training wall will help move this sediment, but dredging (after removing the training wall) will be quicker. Than you for your consideration of my comments and answering my questions,</p>	
297.	Sally Stoker, Aiken, South Carolina	<p>This is to let you know that I adamantly oppose your current proposal for the Savannah River Basin. Your proposal would permanently keep the Savannah River at a dangerous level for the inhabitants of both South Carolina and Georgia. It should be obvious to you that this plan is detrimental to everyone in the region or you would not have shortened your example of the lower level of the river.</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock</p>

1		<p>I urge you to repair the current lock and dam instead of the project you propose.</p>	<p>and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure. Rehabilitating the New Savannah Bluff Lock and Dam is more costly than other alternatives, fails to allow endangered and threatened species to pass the location and it no longer serves the purpose of its construction – commercial navigation between Augusta and Savannah</p>
298.	<p>Susan Wood, Aiken, South Carolina</p>	<p>As a long term resident of Aiken (25 years) I am absolutely opposed to the currently proposed Core of Engineering plan for the dam modification on the Savannah River. In fact, I am appalled that such a plan would have been considered.</p> <p>The Savannah River and the Canal are important regional assets. They are beautiful and are enjoyed by many people. They also provide habitats for birds, mammals and fish and the plants and insects which further support the ecosystem. These waterways should be preserved, not destroyed. We often walk or bicycle along the canal. We bring visitors for canal tours and thoroughly enjoy the beauty and recreational attractions of this area. These resources are an economic benefit for the region. They are a reason people make the decision to move here. They add to the quality of life.</p> <p>Please develop a plan for the dams, the river and the canal which allow these beautiful places to be preserved.</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>
299.	<p>Jane Page Thompson, Aiken, South Carolina</p>	<p>I am vehemently opposed to the lowered pool level on the Savannah River through the CSRA.</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of</p>

		<p>The economic impact would devastate local development projects and jeopardize our school bonds. The property values along the River are based on the River being flowing water not your proposed mud flat level.</p> <p>We have several wildlife preserves along the Savannah like the Silver Bluff Audubon Center and the Phinizy Swamp Preserve; to jeopardize the endangered wildlife in those preserves for the resilient fish down River is not logical. Simply trading one potential animal loss for another is not proper planning.</p> <p>Savannah's port project should require habitat protection down river rather than risking our habitats up river by lowered the pool level.</p> <p>Please follow the recommendations of Rep. Rick Allen (GA) and Rep. Joe Wilson (SC)- these gentlemen have been hearing from property owners impacted by the Lock and Dam issue.</p>	<p>the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>
300.	Raleigh and Beth Daniel, Graniteville, South Carolina	<p>I am opposed to the Corps' proposal to permanently lower the Savannah River by destroying the New Savannah River Lock and Dam. The construction of a new lock and dam system would ensure that the water level required for both cities would remain at adequate pool levels.</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure. Rehabilitating the New Savannah</p>

			Bluff Lock and Dam is more costly than other alternatives, fails to allow endangered and threatened species to pass the location and it no longer serves the purpose of its construction – commercial navigation between Augusta and Savannah
301.	Thomas Portney, North Augusta, South Carolina	Please do not implement your current lock and dam plan for the Savannah River in Augusta.	Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.
302.	John T. Key Beech Island Timber and Construction, Inc.	It is in my opinion that the proposed idea from the Corp of Engineers to mothballing the existing lock & dam is Absurd. Not only will it have a Devastating effect on Our Beautiful Savannah river, as I have been enjoying for over 52 years, it will also effect our Economy in both S.C. & Georgia. The Corp of Engineers has been kicking this Issue on this Structure for way too long. The monies that have been wasted over the years concerning this Issue is Appalling. You need to repair the existing dam	Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower

			<p>the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure. Rehabilitating the New Savannah Bluff Lock and Dam is more costly than other alternatives, fails to allow endangered and threatened species to pass the location and it no longer serves the purpose of its construction – commercial navigation between Augusta and Savannah</p>
303.	Keith Stone	<p>Dear Corps of Engineers, Please refurbish our Lock and Dam to provide the current level of water in Augusta Ga. The Locks can be opened and closed as needed to allow fish passage up river. thanks</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure. Rehabilitating the New Savannah Bluff Lock and Dam is more costly than other alternatives, fails to allow endangered and threatened species to pass the location and it no longer serves the purpose of its construction – commercial navigation between Augusta and Savannah</p>
304.	Beth Royster	<p>I'm writing this email to voice my concern over the proposed change to remove the dam and replace it with a rock weir, I support repairing it and maintaining the pool, (of the river)</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource</p>

			<p>agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure. Rehabilitating the New Savannah Bluff Lock and Dam is more costly than other alternatives, fails to allow endangered and threatened species to pass the location and it no longer serves the purpose of its construction – commercial navigation between Augusta and Savannah</p>
305.	Dr. Janice Bell	<p>Please just go ahead and repair the Savannah Bluff Lock and Dam. Let human lives and their livelihood BE THE FIRST THING YOU CONSIDER over worrying about fish spawning up stream .</p> <p>This is very critical to human people and cities on both sides of the river - the fish are already taken care of by the Savannah project down stream. right?</p> <p>Please pray God will guide you in this very life important decision.</p> <p>Most deeply concerned,</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure. Rehabilitating the New Savannah Bluff Lock and Dam is more costly than other alternatives, fails to allow endangered and threatened species to pass the location and it no longer serves the purpose of its construction – commercial navigation between Augusta and Savannah</p>

<p>306.</p>	<p>Moses Todd Augusta, GA</p>	<p>Environmental impact comment</p> <p>I support the alt. 1-1 that repair, or replace the new Savannah Bluff Lock and Dam infrastructure with a Lock and Dam, to maintain the Upstream pool. To assure sufficient water supply, for Augusta Georgia, and Fort Gordon Georgia Upstream with a fish ladder to get the shortnose sturgeon Upstream pass the new Savannah Bluff lock Dam to the Augusta Shoals. It's my understanding that the sturgeon only need access Upstream of the new Savannah Bluff Lock and Dam 6 weeks of the year in the spring, strongly recommend that the US Army Corps of Engineers use a fish tanker to transport shortnose sturgeon until the fish ladder is in place!</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>
<p>307.</p>	<p>Ray Wilson</p>	<p>Good Afternoon,</p> <p>I oppose any plan that lowers the pool of water in the Savannah River near Augusta and North Augusta. I saw the river when the water level was lowered by the Corps earlier this year and it looked terrible. We need to preserve the river pool while keeping a fish passage, recreational opportunities and preserving property values. I support repairing the Lock and Dam and putting a fish passage on the Georgia side.</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure. Rehabilitating the New Savannah Bluff Lock and Dam is more costly than other alternatives, fails to allow endangered and threatened species to pass the location and it</p>

			no longer serves the purpose of its construction – commercial navigation between Augusta and Savannah
308.	Bob Trescott	<p>We need an alternative that:</p> <ol style="list-style-type: none"> 1.Maintains the customary pool 2.Accommodates migratory fish and other natural resources 3.Controls High and Low water at the Pool 4.Allows navigation 5.Allows removal of silt and debris 6.Supports economic, tourism, and waterfront development 7.Addresses vegetative clogging of waterways 8.Protects canal 9.Addresses withdrawasl and discharges 	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>
309.	William P Martin, III North Augusta, SC	<p>Dear Sir:</p> <p>The effects of the draw down by the Savannah District Army Corps of Engineers were enabled citizens to see the full effect of the Corps of Engineers plan. The cities and citizens of Augusta, GA and North Augusta, SC having been working for years to build numerous housing, businesses, recreational, and government facilities on the riverfront that would be crippled by the Corps of Engineers planned project.</p> <p>The language of the 2016 Water Infrastructure Improvements for the Nation Act states: "to maintain the pool for navigation, water supply, and recreational activities, as in existence on the date of enactment of this Act." On Sept. 15, 2016, Georgia Sens. Johnny Isakson and David Perdue jointly introduced draft language as an</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a</p>

		<p>amendment to the pending WIIN Act. It seems crystal clear to me that this law would certainly require the Corps to maintain the water level at this recorded height in their Draft Recommended Plan. According to information from the U.S. Geological Survey, the water level of the Savannah River at the 5th Street Bridge varied between 113.5 and 114.5 feet.</p> <p>I would echo the recent letter sent to you by Senators Isakson, Perdue, Graham, and Scott, and Representatives Wilson and Allen. This letter embodies my concerns with the current planned project.</p> <p>I would respectfully request that the Savannah District Army Corps of Engineers reconsider their decision and provide another alternative that maintains the pool at current levels and also provides a solution that allows the endangered species of fish access to spawning grounds.</p>	<p>result of the creation of the fish passage structure.</p>
310.	<p>Randy Stover North Augusta, SC</p>	<p>I would like to express my concern over the proposed changes to the New Savannah Bluff Lock and Dam.</p> <p>Often decisions being made from another city or behind a desk can be easily justified, however, when those changes are in your own back yard they become much more personal.</p> <p>Thousands of people along the Savannah River will be affected by the proposed changes or removal of the dam. Even though a simulation was conducted, it was abruptly ended when unwanted damage was noticed and the simulation was cut short and the water level was returned to normal. What The Savannah River means to the people that live along the river can not be summed up in a recommendation based off of purely financial perspective. We live, recreate, eat, enjoy our lives along the Savannah and modifying or</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>

		<p>changing what we love will directly affect our quality of life.</p> <p>I encourage you to reconsider the proposed changes and how it affects the hundreds of thousands of people that call the Savannah River home.</p> <p>Thank you in advance,</p>	
311.	Brian McKinstry	<p>In regards to the planning for fish passage relating to SHEP @ Augusta, Ga. My preferred option is 1-1. I believe that the dam needs to stay & be functional. One option not proposed would be to remove the lock and use that added space for fish passage. The gates can hold or release water as needed to allow migration of fish species. Thanks for the opportunity to comment.</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>
312.	Mrs. C/ Beaufort	<p>While keeping the lock and dam will not affect me as a waterfront homeowner or a businessman, I am a taxpayer who would like to see our corp of engineers care about the people they serve. I have heard no citizen advocating for the lock and dam to be destroyed. So why does that not matter to the corps of engineers? The Augusta Community wants the lock and dam to stay!</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get</p>

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313.	Bill Jeffords	<p>I walked my neighborhood, RiverNorth during the most recent draw down of true Savannah River. I noticed the pool was significantly reduced which included the wetlands (swamp) around the river. Permanently lowering the river will eliminate the habitat for many wild animals.</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>
314.	Jim Newman North Augusta, SC	<p>what is the drought plan for both the river and the upstream lakes?</p> <p>what effect will the rock weir have on the current wetlands/swamps?</p> <p>what about public and private boat docks and ramps that will be useless with the drawdown caused by the rock weir? how will they be fixed or compensated?</p> <p>what will happen to the sporting events that happen on the</p>	<p>The drought plan is detailed in <i>Savannah River Basin Drought Contingency Plan</i> and will not be impacted by the fish passage project.</p> <p>The wetland impacts for the draft recommended plan can be found in Section 3.6.4 of the draft report.</p> <p>Operational changes from the JST dam would keep pool elevations safe for hosting the Head of the South Regatta and other special events outside of periods of drought and flooding. Based on the simulation, the recreational navigation channel would be at least 5 feet in depth throughout the length of the NSBLD pool.</p>

		<p>river(rowing regatta,ironman 70.3,boat races,fireworks,fishing,and recreational boating)?</p> <p>Why cant we leave the flood gates and put rocks for spawning on the backside of them?</p> <p>do we really know if the fish will make it up the river?</p>	<p>According to Safe Water Sports and the International Waterskiing and Waterboard Federation, the recommended minimum water depths for water skiing, waterboarding, and jet skiing is 5 feet (1.5m). These water sports are not expected to be negatively impacted because water depths would be safe</p> <p>Any dock constructed in Section 10 navigable waters requires a permit. The permit states that "The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure ... the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work...without expense to the United States. No claim shall be made against the United States on account of such removal or alteration."</p> <p>The gates at New Savannah Bluff Lock and Dam are not flood gates, and the structure does not serve a flood control function. The rock-ramp structure would be ineffective and likely unstable if placed upstream or downstream of gates left in place. The goal of the fish passage structure is to provide a way for fish species to return to their historic spawning ground near the Augusta Shoals. The recommended plan is our best opportunity to do this while balancing concerns for water supply, recreation, and navigation.</p> <p>With regards to your comment on sturgeon, endangered sturgeon have been detected below the Lock and Dam during the spawning season. Vine et al. (2019) is the most recently published paper reporting both shortnose and Atlantic sturgeon exhibiting likely spawning behavior below the Lock and Dam. In addition, data collected from fish implanted with acoustic tags suggest spawning is occurring in two locations between the NSBLD and approximately Sylvania, GA.</p>
315.	Gary Claxton North Augusta, SC	<p>sirs just a few comments about lock and dam situation and maintaining our pool of water just had masters tournament the many many comments about our beautiful savannah river as viewed from</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while</p>

		<p>augusta riverwalk and north augusta greenway from tourists all over world there is millions of dollars being invested on banks of savannah river by cities of north augusta and augusta i have lived here 58 years in north augusta and the growth is phenomenal on the river with minor league ballpark new motel luxury apartments restaurants city parks and several miles of riverfront homes and many more businesses planned What the people of the entire area want is our pool of water maintained at current level we have had for 80 years. We have nothing against the fish reaching historic spawning grounds but it can be done without lowering pool and the law says the pool must be maintained I have seen river lowered twice and it ugly and damaging to property and very dangerous for boaters with jetties and other objects in water being just under water Has the army corps gone into macon columbia greenville columbus and many other towns in south carolina and georgia where millions of dollars has been invested and lowered there river level. No no that has not happened anywhere in georgia and south carolina and if it did they be just as mad as we are We are a united front and will fight this. Lets discuss this matter rationally and reach the correct solution maintaining our pool Thanks for reading</p>	<p>preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>
316.	Ann Young North Augusta, SC	<p>To whom it may concern,</p> <p>I am writing to let you know that I am appalled to think that you would consider reducing the level of the Savannah River near our home in North Augusta to a laughable level. Our community just made a large investment in a riverside ballpark.</p> <p>I implore you to imagine yourself owning a home on the river here before making your conclusions.</p> <p>Sincerely,</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and</p>

			<p>comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>
317.	<p>Stephen P Donohue North Augusta, SC</p>	<p>I live on the Savannah River, in North Augusta, SC. The test of the river, lowered to the level expected 20% of the time, was frightful. It is unacceptable to spend millions to expand the Savannah River Harbor, to add to the national economy and create jobs and profits, on the backs of the residents of the Central Savannah River Area (CSRA).</p> <p>It was clear to me, that someone put the fix in on the 2016 WIIN Act, to kill two birds with one stone. Disable the NSBLD while "protecting sturgeon" and leave the CSRA with a creek.</p> <p>Comment #1:</p> <p>Why did the USACE pick an area 187 miles away from the Savannah harbor to accommodate the sturgeon? What alternatives, closer to the "impact area", to wit: the Savannah Harbor, where reviewed? Logically, the less distance sturgeon have to travel to a spawning area, the less risk of loss to the adult fish and the juvenile fish trekking back to the ocean.</p> <p>Comment #2</p> <p>What will the USACE do if you build it, tear down the NSBLD, and the sturgeon don't come? In short, what is plan B when this plan doesn't work?</p> <p>Comment #3</p> <p>Why don't you build a 3% gradient to the wall, make a higher wall, and leave a deeper pool?</p>	<p>Comment 1: Sturgeon preferentially spawn well upstream, at or near the fall line of rivers, over hard substrate consisting of rock, pebbles, gravel, cobble, limestone, or boulders (Gilbert, 1989; Smith and Clugston, 1997). Hard substrate is required so highly-adhesive sturgeon eggs have a surface to adhere to during their initial development, and young fry can use the interstitial spaces between rocks, pebbles, cobble, etc., to hide from predators during downstream movement and maturation (Gilbert, 1989; Smith and Clugston, 1997). Freshwater is important because exposure to even low levels of salinity can kill sturgeon during their first few weeks of life; thus, their downstream movement is limited until they can endure brackish waters (Bain et al., 2000). For example, shortnose sturgeon tend to spawn 200-300 km upriver, preventing the youngest life stages from salt exposure too early in their development (Parker and Kynard, 2005; Kynard, 1997). Providing access to the Augusta Shoals also increases the physical distance between potential spawning grounds and downstream exposure to salt water. As the commenter notes, salinity can be deadly to underdeveloped sturgeon. Opening access to the Augusta Shoals provides approximately 20 additional river miles to allow young sturgeon to undergo the physiological developments required before exposure to salt water.</p> <p>Comment 2: We will implement a Monitoring and Adaptive Management Plan to ensure the fish passage structure is meeting certain criteria for fish passage. The plan will include detailed triggers for passage modification if those criteria are not being met.</p> <p>Comment 3: The 2% gradient is the maximum slope prescribed for this type of structure, in order to pass the species of interest, as prescribed in the <i>Federal Interagency Nature-like Fishway Passage Design Guidelines for Atlantic Coast Diadromous Fishes</i>. A steeper</p>

	<p>Comment #4</p> <p>Why don't you build a longer 2% gradient leading to a higher level, and leave the pool deeper? Extending the gradient another 100 feet would permit the level of the river to be maintain two feet higher.</p> <p>Comment #5</p> <p>What sacrifices are the Savannah area importers, exporters, and citizens making to accommodate the sturgeon?</p> <p>Comment #6</p> <p>Why isn't a surcharge levied on all ships using the expanded harbor to fund a better solution to the sturgeon issue, and leave the pool in the CSRA at its current depth?</p> <p>Comment #7</p> <p>After long, heavy rainstorms, the Savannah River is loaded with huge tree trunks and other detritus floating down stream. These logs are 2 to 3 feet in diameter and as long as a telephone pole. I just removed one from under my dock today (3/8/2019). How will the USACE handle that debris which will not pass through a shallow passage?</p> <p>Comment #8</p> <p>Why can't a deeper pool be dredged closer to Savannah which would provide fresh water without a weir for spawning?</p> <p>Comment #9</p> <p>Why can't a hatchery be build near the Savannah River harbor that would be a more reliable source of future generations of sturgeon?</p> <p>Comment #10</p>	<p>slope would reduce the efficiency of the structure to pass fish. Several alternatives considered had a higher weir crest elevation than that in the recommended plan, but would likely induce additional flooding in overbank areas during high-flow events. The impacts of the flooding are the primary reason one of these alternatives was not recommended.</p> <p>Comment 4: Several alternatives considered had a higher weir crest elevation than that in the recommended plan, but would likely induce additional flooding in overbank areas during high-flow events. The impacts of the flooding are the primary reason one of these alternatives was not recommended.</p> <p>Comment 5: An economic analysis of business impacts was not within the scope of this PAAR/SEA.</p> <p>Comment 6: This type of business decision is not within the scope of this report.</p> <p>Comment 7: Debris is captured in the reservoirs upstream and at the lock and dam. Debris will continue to be transported by the natural flow and flows or removed during maintenance of the structure.</p> <p>Comment 8: Please see response to Comment 322, part 1</p> <p>Comment 9: Stocking fish or having a hatchery built in the Savannah River near the harbor would not solve the issue of the New Savannah Bluff Lock and Dam creating a barrier for sturgeon as well as other fish species traveling within the Savannah River. Migratory fish (like sturgeon) need to move between habitats to be successful. Different life stages (larva, juveniles, and adults) require different habitats in order to grow and reproduce. For sturgeon to successfully complete their life cycle, they need access not only to the shoals, but also the entire river. The adults need the full river to complete their spawning migrations, while the young need the river for growth and development.</p> <p>Comment 10: Water releases from the upstream dam will ensure that during drought conditions that there will be enough water flowing over the rock weir to ensure safe fish passage.</p> <p>Comment 11, 12, and 13: Thank you for your comments. The USACE Savannah District's</p>
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318.	Dorothy Koonce North Augusta, SC	<p>Please rebuild the dam. Do not let us lose the beauty and recreational facilities that it gives to both Georgia and South Carolina. It is such an asset to the CSRA. The rowing club, the marathon, fishing, boating and racing.</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get</p>

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319.	<p>Diana Davis North Augusta, SC</p>	<p>Sir - Please continue to oppose the design changes for the Augusta area for the Bluffs that the Army Corps of Engineers wish to institute- thank you!</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>
320.	<p>Larry W Sprowls</p>	<p>It appears that the Corps is trying to circumvent the law by not preserving the pool level, just do the right thing and quit trying to screw the people of the Augusta area. Fix the problem and make things right.</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock</p>

			and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.
321.	Thomas Smith	<p>To whom it may concern; do not lower our river. I have enjoyed many activities on the river over the 50 years I have lived here. I am certain that allowing Savannah River depth to be lowered at any point will have an unnecessary negative impact on myself and my fellow citizens and visitors to North Augusta.</p> <p>Going forward as stated will prove over time to be another failed act by the Corps.</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>
322.	Robert Parrot North Augusta, SC	<p>Re: Comments on the Savannah Harbor Expansion Project (SHEP), Modification to Fish Passage Feature at the New Savannah Bluff Lock and Dam (NSBLD) dated May 26, 2017</p> <p>Dear Sirs or Mesdames:</p> <p>As a member of the Central Savannah River Area (CSRA), I appreciate the opportunity to submit these comments on the U.S. Army Corps of Engineers' review of fish passage alternatives associated with the New Savannah Bluff Lock & Dam (Lock and Dam) under the WIIN Act.</p>	<p>Thank you for your comments.</p>

		<p>For all of the reasons outlined in the May 26, 2017, comments submitted by the Augusta Metro Chamber of Commerce, which comments I am incorporating by reference as my own, I endorse the Augusta Chamber's letter to ensure and safeguard our community's future dependency on the Savannah River pool created by the New Savannah Bluff Lock and Dam and preserve our riverfront.</p> <p>My contact information is included below and I look forward to working with all of the stakeholders in ensuring a protective solution for both the CSRA and the Savannah Harbor Expansion Project.</p> <p>Sincerely</p>	
323.	Johnny Shaw	<p>Don't waste all of that money to replace the old lock & dam. Who cares about 2 old fish that no one has every heard about! Keep the water Level about the same, but more importantly keep Lake Thurman's water level at full pool, 330 ft. Spend the 300 million to have Savannah recycle part of it's water!</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>
324.	Robbie Parrott Augusta GA	<p>To whom it may concern,</p> <p>I am a lifelong resident of the CSRA. I currently live in Augusta GA. The Savannah River has been a big part of my life. I am writing this letter to let</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while</p>

		<p>it be known that I am against putting in a rock weir. We must maintain our pool of water and the only way to do it to repair the current lock and dam. We will not be able to control flooding in the future without a lock and dam. The Army corp must listen to the citizens of the CSRA. We live here and we use and enjoy our beautiful Savannah River.</p>	<p>preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure. Rehabilitating the New Savannah Bluff Lock and Dam is more costly than other alternatives, fails to allow endangered and threatened species to pass the location and it no longer serves the purpose of its construction – commercial navigation between Augusta and Savannah</p>
325.	<p>Lee G. Robertson Augusta, GA</p>	<p>Dear Sirs and/or Mesdames:</p> <p>I support the "No Action" Alternative or Alternative 1-1.</p> <p>They are the alternatives which come the closest to preserving the full pool at Augusta and North Augusta, continue to provide reasonable flood control, and give passage to the fish as accepted mitigation for the loss of habitat caused by the deepening of the Savannah Harbor.</p> <p>I do not believe the Corps has followed its own policies regarding public notice for this initiative. In particular, the published notice on their own website for the March 6 "workshop" stated that the presentation would be held at 5:00. The Corps began the presentation at 4:15 and the entire public session was completed by 4:45. People who planned to come after work to learn of the Corps' defined options were surprised to arrive and find that the</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>

		<p>information presentation was completely over.</p> <p>Moreover, this public hearing was billed as a "Workshop." But there was no chance for working together for a solution that is best for all as I, and numerous other participants, had hoped. Information stations were spread across the room, where Corps appointed "experts" could answer questions. But there was no opportunity to hear and integrate ideas into a solution to benefit all.</p> <p>In addition, the public was asked to comment on the alternatives presented at that time. Those included Alternative 1-1. Suddenly, in the middle of the comment period, that alternative was removed, leaving the public to wonder, "What is it we are supposed to be commenting on?" The explanation of a new financial analysis for Alternative 1.1, which removes it from consideration at this time, looks extremely suspicious – one can prove anything with numbers.</p> <p>Please reconsider and choose an alternative that benefits all and does not damage the CSRA in favor of the Savannah Harbor.</p> <p>Respectfully submitted,</p>	
326.	JW Peacock	<p>I feel that it will be a great mistake to do away with the lock & dam because of the environmental effect it will have on the property owners along the Savannah River. Many have spent thousands and even millions of dollars on homes and other facilities along the river and to destroy their investments would be a disgrace to the entire area. I feel that money can be found to do many of the projects which have no real value to taxpayers and that money can be found to do repairs on the old lock & dam. Please support and vote for repairing the old Locks in order to keep the river level where it is so homeowner and investors along the river will not be</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get</p>

		<p>punished by foolish endeavors such as building a rock area to replace the lock & dam.</p>	<p>sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure. Rehabilitating the New Savannah Bluff Lock and Dam is more costly than other alternatives, fails to allow endangered and threatened species to pass the location and it no longer serves the purpose of its construction – commercial navigation between Augusta and Savannah</p>
327.	<p>David N. O'Neal, AIA Augusta, GA</p>	<p>As a lifelong resident of Aiken County and a longtime owner of a professional Architectural Firm in downtown Augusta I support maintaining the current river level in Augusta.</p> <p>If the Corps decides to modify the river level then I think they should assist Augusta in dredging the river for proper recreational use and safety. The dredging should be maintained periodically. This could be accomplished by contracting with private dredging companies who would be paid by the amount of material delivered to a designated area. This soil could be utilized for agricultural applications.</p> <p>Respectfully Submitted,</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>
328.	<p>Ben Reyes Augusta GA</p>	<p>Having been witness to the Savannah river drop a few weeks ago I can unequivocally state that I am against the removal of the Lock and Dam in Augusta. Repair the Dam and keep our river where it is.</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock</p>

			<p>and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure. Rehabilitating the New Savannah Bluff Lock and Dam is more costly than other alternatives, fails to allow endangered and threatened species to pass the location and it no longer serves the purpose of its construction – commercial navigation between Augusta and Savannah</p>
329.	<p>Steve Arnold North Augusta, SC</p>	<p>I do not live on the Savannah River, but I live in South Carolina and work in Georgia. I am on the river on a regular basis, both working and recreationally, so i do have a big interest in what happens to the river.</p> <p>I will cut to the chase - repair the Lock and Dam. The entire CSRA has come to rely on the river being at its current levels for numerous reasons.</p> <p>We have a Half-Ironman race annually. It is the 2nd biggest moneymaker for the area after the Masters, and has been ever since it started 11 years ago. It is also the 2nd largest half-ironman race in the world. The first part of the race is the swim portion. If the river is lowered, the channel would probably still be big enough for the swimmers, but not for the support craft that is necessary for the safety of the swimmers. Get rid of the Lock and Dam and Ironman will go away. This would be a huge loss because every year, spots are added to the race, and it still fills up. It is a hugely popular race due to the city, the volunteers, and the river.</p> <p>The Augusta Southern Nationals, when it is here, is the 3rd largest moneymaker for the area annually. Currently the race is not being held due to the lack of a governing body</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>

for the race, but if the river is lowered the race will be gone for good.

The Head of the South Regatta race is another annual event held on the river. It has gotten popular enough they are having to limit the number of participants, who come here from around the United States and Canada. Lowering the river will impede the safety of that race, and it too will go away.

Numerous homeowners have property on that river. If the river is lowered, the value of their property will plummet. They cannot sell because they will be taking a loss. If they stay their property goes "underwater" and they will be paying more than what it is worth because they have already purchased the land. It will be like the housing crisis a few years back. These same property owners will have docks and ramps that will be sitting on dry land, and boats they will have no use for because there will be land around their docks. Unless the Corps plans to reimburse them for their losses you will cause every property owner on the river financial hardship. These properties were purchased and homes were built because of the river always being here. It is not like they planned landscaping around a Christmas tree, which is around only a month. They purchased and built because the river is supposed to stay the way it is.

There are several businesses that rely on river water for their operations. Their intakes will be affected or unusable if the drawdown occurs. Are you going to pay for whatever construction and repairs they have to make to ensure they can have river water for their operations?

There are public boat ramps on both sides of the river. They will be unusable to all but the smallest boats. They will have to be extended to

make both the ramps and the river accessible. Is the Corps going to foot the bill to make these ramps usable again?

I am a member of the Richmond County Dive Team. Part of our job is to search the river for drowning victims. If this plan goes thru there will be an increase in accidents and deaths due to obstructions being closer to the surface and people not knowing about them. Are you going to accept responsibility for any deaths, damages, and injuries that will happen if the river is lowered?

If this drawdown goes thru there will be damages to property on both sides of the river, as shown by the wall at Goodale Landing. Are you going to foot the bill for these damages that will occur?

There are business that will suffer in the CSRA if the drawdown occurs. The Neptune Dive and Ski shop sells scuba gear, much of which is used in the river. If the drawdown occurs, a lot of their business will be lost due to a loss of places to dive in the river. Any business around here that sells boats will suffer because of the popularity of the river. The Fifth Street Marina will suffer due to the lowering of the river. The Cyber businesses in Georgia and the Ball Stadium in South Carolina were built because of the river, not because they would be on the bank of a mud flat.

We have a Riverwalk along the Georgia shore. Who will want to use a Riverwalk if it is on a mud flat?

The river being lowered will result in a lot of mud flats on each side of the river. That will result in many more mosquitoes along the river, which will spread disease on a very large level. Are you going to cover the medical bills that will result from this?

		<p>On other levels, I, along with many other people are curious as to why the estimates to repair the locks have skyrocketed, but the options the Corps prefer are not going up in cost at all? Are the Corps going to ever let people know how they came up with these cost estimates?</p> <p>This fish the Corps are so concerned about is supposed to be endangered. How long ago was that determined? Has anyone checked lately to see how many are around today? It may not be endangered any more, so there would be no need to get rid of the dam.</p> <p>It would help if the people involved in the decision making process actually used the river and would be affected, rather the having the people making the decision lived in other areas of the state. The people deciding this have no interest in the river and apparently could care less how the CSRA would suffer.</p> <p>I am going to be very blunt - the Corps of Engineers needs to get their collective head out of their collective ass and listen to common sense and reasoning. We have several hospitals in the area, along with a medical college. I am sure they have forceps that can assist you in this endeavor. The Corps are the only ones that want this drawdown. Please do not make hundreds of thousands of people in two different states suffer due to the decision of a very select few people in the Corps.</p> <p>Thank you for taking time to read this, although I suspect once the first two paragraphs are read the letter will be set aside and the remainder will be unread.</p>	
330.	Robert R. Nesbit, Jr., MD, FACS	Your proposal to remove the lock and dam and thus lower the river level in Augusta is totally wrong and unacceptable.	Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of

		<p>Your website notes efforts to preserve the waterfronts on Tybee, etc. – but you plan destroys the waterfront in Augusta.</p> <p>Your trial lowering of the river level in Augusta proves my point.</p> <p>The idea of ruining Augusta's waterfront to improve the Savannah Harbor is not right.</p> <p>Go back to the Congress and ask for the money to do the right thing and they will give it to you.</p>	<p>the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure. Rehabilitating the New Savannah Bluff Lock and Dam is more costly than other alternatives, fails to allow endangered and threatened species to pass the location and it no longer serves the purpose of its construction – commercial navigation between Augusta and Savannah</p>
331.	Brian McKinstry	<p>In regards to the planning for fish passage relating to SHEP @ Augusta, Ga. My preferred option is 1-1. I believe that the dam needs to stay & be functional. One option not proposed would be to remove the lock and use that added space for fish passage. The gates can hold or release water as needed to allow migration of fish species. Thanks for the opportunity to comment.</p>	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>

332.	David Montgomery Moore, Esq. Earth & Water Law Group	See Exhibit 14	Please see responses to comment 258 for responses.
333.	James Smith, North Augusta, South Carolina	See Exhibit 15	<p>Thank you for your comments. The USACE Savannah District's must follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality, according to Implementation Guidance, of the upstream pool of the New Savannah Bluff Lock and Dam for the purpose of recreational navigation and water supply.</p> <p>Based on the simulation, the recreational navigation channel would be at least 5 feet in depth throughout the length of the NSBLD pool. According to Safe Water Sports and the International Waterskiing and Waterboard Federation, the recommended minimum water depths for water skiing, waterboarding, and jet skiing is 5 feet (1.5m). These water sports are not expected to be negatively impacted because water depths would be safe.</p> <p>Operational changes would keep pool elevations safe for hosting the Head of the South Regatta.</p> <p>Any dock constructed in Section 10 navigable waters requires a permit. The permit states that "The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure ... the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work...without expense to the United States. No claim shall be made against the United States on account of such removal or alteration."</p>
334.	Aiken County Legislative Delegation	See Exhibit 16	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District</p>

			<p>must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>
335.	GADNR Wildlife Resources Division	See Exhibit 17	<p>Thank you for the comments and your support of the draft recommended plan and the requirements to meet the SHEP Biological Opinion from NMFS with some caveats about time of year of when construction would occur to minimize impacts to spawning robust redhorse.</p> <p>We agree the downstream gravel bar is of great importance. USACE has conducted additional hydraulic modeling to consider potential impacts to the downstream gravel bar under different flow conditions. The preliminary results of that hydraulic modeling suggests movement of the gravel bar will be minimal. The findings of this analysis will be presented in Attachment 3 to the Engineering Appendix in the Final Report.</p> <p>This supports findings of Jackson and Long (2011), which noted no significant change in the location of the gravel bar under flows as high as 30,000 cfs. The full-width, step-down arrangement of the rock ramp will also act to dissipate water velocities. This should further reduce the likelihood that the rock ramp will significantly affect the location of the downstream gravel bar. Additionally, limited habitat characterization was conducted near the Augusta Shoals by Dial Cordy and Associates in 2010. They reported habitat types that could support spawning at 77% (44 of 57) sites sampled</p>
336.	Augusta Canal Authority	See Exhibit 18	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool</p>

of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.

337.	The Nature Conservatory	See Exhibit 19	Thank you for your comments and general support for the draft recommended plan. The PDT will ensure that as the project's design is refined, that we will follow the guidelines as discussed in your comments. These guidelines were those that the PDT was planning on using anyway in the detailed design phase.
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338.	Augusta Convention and Visitors Bureau	See Exhibit 20	Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.
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339.	Jon Craig, Augusta, Georgia	If a rock weir is to be built, why can it not be built to a level that would maintain the Augusta pool at, or nearer, 114' elevation? If the answer includes "nuisance flooding", could explain, or show, where and how this "nuisance flooding" occurs. The attached pictures were taken in my backyard. As you can see by the pictures, I would go from a river front property to a river view property with the addition of approx. 50 yards of silt. This changes the entire profile, and value, of my property. Please reconsider the lowered pool, this decision effects a lot of human lives as well as the sturgeons. See Exhibit 21 for attached images.	The rock weir could be built to maintain the Augusta pool at the 114 foot elevation however it would cause induced nuisance flooding and additional real-estate easement would be needed as a result. The time it would take to acquire those additional real-estate easements would prohibit us from starting construction of the fish passage structure by January 2021 and therefore would cause us not to meet the requirements of our Biological Opinion from NOAA. Inundation maps for Alternative 2-6a are presented in Attachment 2 to the Engineering Appendix, and provide an example of the extent and magnitude of induced flooding for the 2-year return interval flow (around 33,000cfs). Inundation for alternatives that would maintain a higher normal pool near elevation 114 would impact even more parcels than those presented in Attachment 2.
340.	Official comments from Rep. Joe Wilson, signed jointly by Rep. Wilson and Rep. Allen	See Exhibit 22	Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.
341.	Dale Reddick	See Exhibit 23	Thank you for your comments and suggestions. Unfortunately, the adapted version of Alternative 2-3 was not evaluated and discussed in the draft report and was not reviewed by the public and resource agencies. As a result, this alterative would not be allowed to move forward as the preferred alternative unless our non-federal sponsors request the USACE Savannah

			District ask us to evaluate it for potential consideration.
342.	Senator Tom Young, South Carolina	See Exhibit 24	Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.
343.	Representative William Hixon	See Exhibit 25	Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alterative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a

			<p>result of the creation of the fish passage structure.</p> <p>With regards to your specific comments referring to Sturgeon: Bahr and Peterson (2017) does not support the conclusion that "...there is no evidence Shortnose Sturgeon are endangered." Based on field sampling from 2013-2015, Bahr and Peterson (2017) reports the Savannah River likely has the second largest shortnose sturgeon population in Georgia. The mean annual population estimates suggest Age-1 might be increasing, Age-2+ appears to be stable, but adult numbers may be declining (1865 to 940 adults from 2013-2015). The broad 95% confidence intervals on these estimates indicate substantial uncertainty and a lack of a statistically conclusive trend. Unfortunately, historical population data are lacking from which to gauge species recovery. At present, the largest and best-studied populations of this endangered species are found in the Hudson (56,708 adults; Bain et al. 2007), the Delaware (12,047 adults; ERC 2006), and the Saint John (>18,000 adults). These populations are substantially larger than the small, reproductively isolated population in the Savannah River, which continues to be heavily impacted by impoundments, pollution, and dredging (Pearlstone et al. 1989, Inglis et al. 2014).</p>
344.	SCE&G	See Exhibit 26	<p>Thank you for your comments regarding operations at Urquhart Station and your concern with the proposed alternative, 2-6d. During the simulation normal operations were suspended, and the gates were opened to hit the target pool elevation to simulate pool conditions for the recommended plan. The target pool level for the simulation was elevation 111 ft NGVD29 as measured and observed at the USGS gage located just above the NSBLD (02196999). This is 1.5 feet below the normal minimum operating range at the NSBLD. The conditions seen during the simulation were not entirely representative of conditions we would expect to see under the recommended plan. Prior to the simulation, releases from Thurmond Dam were relatively high due to sustained rainfall during the preceding months. These high flows (and resulting higher pools levels) prior to the simulation made the impacts of the simulated 5,000cfs appear more dramatic by comparison. Furthermore, the flashboards at Steven's Creek</p>

			<p>Dam were down for repairs during the simulation, so releases from Thurmond Dam were translated directly downstream to the pool in Augusta. This created large fluctuations in the pool, both peaks and troughs, which would not be observed during normal operations with both the in-channel weir and the Steven's Creek Dam flashboards operational. The lack of re-regulation by Steven's Creek Dam caused the river flow (and resulting pool) to drop below extreme drought conditions and there were still no observed impacts to water users in the pool. Overall, the simulation validated our expectations and the hydraulic analysis performed by CDM that water intakes would not be adversely impacted under the recommended plan.</p>
345.	Augusta Sports Council	See Exhibit 27	<p>Thank you for your comments. The USACE Savannah District's focus is to follow the legislation requirements of the 2016 Water Infrastructure Improvements for the Nation Act as well as meet the mitigation requirements of the Savannah Harbor Expansion project while preserving the functionality of the upstream pool of the New Savannah Bluff Lock and Dam for the purposes of recreational navigation and water supply. The USACE Savannah District must work with the state and federal resource agencies to recommend a plan with the highest probability to get fish species, in particular the shortnose and Atlantic sturgeon above the lock and dam to meet our mitigation requirements of the Savannah Harbor Expansion project and comply with the endangered species act by selecting the alternative with best chance to get sturgeon past the lock and dam to additional spawning habitat. Any of the alternatives being evaluated, including 1-1 and the NAA, will lower the water levels from what is out there under existing conditions just by varying degrees as a result of the creation of the fish passage structure.</p>
346.	Mr. Joe Sills, Augusta, Georgia	Please enter these my comments regarding proposed changes to New Savannah Lock and Dam. I attended the public meeting held at North Augusta this past winter. Managers and engineers presented a thorough set of facts regarding several proposals to achieve the objective at hand and they presented the reasoning and judgment about the	<p>Thank you for your comments and your support for the draft recommended plan.</p>

recommended proposal. I find the facts accurate and the judgment to be reasonable and desirable. I hope the Corps will construct the Corps-recommended proposal. There are many in our area (including high-level politicians) who reject this proposal and merely wish to keep the status quo. The explanations from Corps managers why said status quo is not advised have been cogent and well-studied, including minimization of local flooding and the cost/benefit analysis. Riverfront property owners did not like the appearance of their front yards when the Savannah River was drawn down earlier this spring. However, if they would think a little, they would realize they will be gaining new real estate which can be enhanced. I'm sure federal, state and local governments will provide permits for property owners to extend their boat docks and dredge or backfill to create attractive front yards again. A small number of Augusta and North Augusta property owners should not be guaranteed a certain elevation of the river in front of their properties at the expense of citizens of the entire Central Savannah River Area. Maintaining the higher level of the pool in downtown Augusta will bring exorbitant costs to all taxpayers for only a perceived aesthetic benefit to riverfront property owners. The current lock and dam is dilapidated and an eyesore. The navigation function is no longer needed. The level control function can be achieved by the proposed rock weir. Please tear down this dam.

Savannah District U.S. Army Corps of Engineers
Planning Division, ATTN: Ms. Robin Armetta (PM-P)
Planning Division, ATTN: Ms. Julie Morgan (PM-P)
100 West Oglethorpe Avenue
Savannah, Georgia 31401-36046

Re: Guy Quinn for the Draft Integrated Post Authorization Analysis Report (PAAR) and Supplemental Environmental Assessment (SEA), Fish Passage at New Savannah Bluff Lock and Dam (NSBLD), and Draft Finding of No Significant Impact (FONSI) to evaluate proposed changes to the Fish Passage feature of the Savannah Harbor Expansion Project (SHEP).

SUMMARY AND INTRODUCTION

From what I can gather, local communities have absolutely no interest in causing heartburn for Savannah or the State. Our eyes are wide open to the fact we stand to benefit from the SHEP more than most because of our proximity to Savannah.

Local communities have informed the USACE they will agree to their “Alternative 1-1” (Alt. 1-1) because it results in the highest pool levels without flooding. They have apparently conceded that the language of WIIN 2016, though at first promising on its face, will not wear the white hat for us. The law requires the Corps to “maintain the pool ... as in existence on the date of enactment of this Act.”

None of the alternatives under consideration will regulate the frequent fluctuations caused by power generation at Thurmond Dam. None allow us to retain use of our lock for navigation into the lower river, Savannah and the Atlantic Ocean. All of them promise much higher flows velocities. None of them keep the water level at the height we have enjoyed for over 80 years. As a result, all alternatives under consideration are less area for safe recreation and navigation; and they result in a significantly downsized area for these activities.

All of the options leave the training walls on the floor of the river more exposed and more hazardous. They all make a number of docks unusable and potentially leave us with less water volume for withdrawals and discharges now and into the future. All of the options threaten current investment-backed expectations and discourage future investment. Drought will magnify the each of these impacts.

Given the current constraints, local communities recognized sacrifices may be required and made their preference for Alt. 1-1 known because it is the alternative that holds water levels highest and as such it will have the least impact on our community. Put differently, it gets closest to “maintaining the pool as in existence.” After analyzing a multitude of options over the last couple years, the Corps tells us Alt. 1-1 “scored” itself into a three way tie late in the fourth quarter of their analysis. Their recommended “Alternative 2-6d” (Alt. 2-6d) only made it into the late tie because the “scoring” pays insufficient attention to the health, safety and welfare of our local communities.

For example, a legitimate scoring system would reflect the reality that every alternative being considered will stock our drastically down-sized pool with two species of endangered fish and then ask it to support the needs—for withdrawals, discharges, recreation, navigation, development and special events—of the 20% up-sized population Georgia EPD projects for Augusta by 2050. Savannah USACE is aware of this projected increase and it is aware that the river provides for nearly 90% of Augusta’s water needs. Alternatives that minimize these impacts should have been credited for doing so in the Corps’ “scoring.”

Also, if this USACE plan comes to fruition the people and businesses who have settled here will suddenly find themselves farther away from a different body of water that is only an uglier, smaller and more hazardous shell of the one they staked their futures on. This uglier, smaller and more distant shell of a river will also be far less likely to attract future investment. Had any of these realities factored into the “scoring,” it is likely the USACE- recommended alternative would not have made into the late tie with our Alt. 1-1.

The assessment never mentions the drastic reduction in the area available for recreation or the dangers associated with skiing, wakeboarding and tubing in the two feet of water they assure us will be available. Nor does the danger associated with cramming all this activity into smaller areas factor into their assessment or their “scoring.”

The scoring also failed to credit alternatives that minimize “hazards.” The report indicates the training walls on the floor of the river will be more “hazardous” with their plan but these hazards played no role in the scoring. “Possible delays” for fish were scored but definite hazards for humans weren’t. Again, if the safety and “hazards” of the various alternatives factored at all in the scoring, it seems likely the locally preferred alternative would have avoided the late tie with their recommended plan and this situation would already be behind us.

Local Communities have been informed their “locally preferred plan” has been “eliminated” even before the close of the comment period. This is an obvious contravention of the NEPA. It has been eliminated because Alt. 1-1 does not pass sturgeon “as well as or better than the recommended plan.” Apparently the dam gates could attract fish and “possibly delay” their migration through the fish passage. As a result, in the “matrix,” the Corps’ recommended plan scored a “1” and Alt. 1-1 posted the next best score: “0.”

This increment of “possible delay” between scores of “1” and “0” is all that separates us from a resolution that satisfies local communities and gets Savannah what it needs without additional controversy or delay. I take issue with the supposed importance of this increment on a variety of levels.

The fact is our current understanding of fish passages is not at a level to credibly claim that the fine hairs of these increments of “possible delay” are being accurately split. This project tasks the USACE with building something that has never been built before: a fishway that is effective for Atlantic and Shortnose Sturgeon. At the recent public meeting here in Augusta, NOAA Fisheries showcased a facility in the Cape Fear River in North Carolina on a poster.

But despite its “poster-child” status, the Corps recently informed us no Shortnose Sturgeon have been “observed” above that facility in the five years since its construction. Only three Atlantic Sturgeon have been observed and they may have passed through the navigation lock there. The North Carolina folks are hoping to put together around one million dollars just to make it pass bass effectively—never mind 800 pound sturgeon.

Nevertheless, the Cape Fear facility is to date the only example of an “effective” fishway the USACE and NOAA Fisheries can point to. This example clearly does not inspire confidence in “the science” that underlies the Corps’ attempt to scuttle the offered compromise and their demand to further drain the pool of water this City has relied on for 80 years. And even if the course efforts to build a successful fish passage are effective, all of this effort and money is being spent to get migratory fish back 15 river miles of the 300 they historically enjoyed. Put differently, this whole monumental effort only has the potential to restore 5% of their habitat.

Nor do the preceding twenty years of indecisiveness at our Lock and Dam inspire any confidence in the science responsible for these “1’s” and “0’s.” During the five years leading up to WIIN 2016, the “2012 Bypass” was the agencies’ recommended plan. For reasons that are impossible to understand or

explain, the USACE is using this plan as the “No Action Alternative” for the ongoing analysis here. As such, this imaginary concept was scored in the recent matrix. The USACE determined it, like our Alt. 1-1, could “possibly delay” migration; it received the same “0” score as Alt. 1-1.

It is unclear whether the agencies understood or recognized that their 2012 Bypass could result in “possible delay” during the five years they spent pushing that plan. They apparently dodged a bullet. If so, they dodged two other bullets as well when recommended plans from the prior decade were not carried forward. And after every dodged bullet—the present situation included—we are assured the new recommended plan is the best of all possible plans. It is not hard to imagine a parallel universe where future agency officials in the year 2025 will breathe sighs of relief that the current plan was never carried forward.

Ideas and plans for these fish passages are constantly shifting; and there has never been a successful working model to support or inform these shifts. The body of knowledge for accomplishing this potentially impossible task is highly limited. In this experimental and largely aspirational context, any reported increment of “possible delay” that separates a “0” from a “1” is an unworthy basis for the Corps’ current demand for further concessions from our community.

At any rate, it is hard to comprehend that this one unconvincing variable threatens the current opportunity to get Savannah and our State what it needs to fulfill the environmental obligations of our State’s largest-ever infrastructure investment without delay.

Local communities have apparently expressed that they are prepared to look past the fact that the process of analyzing alternatives has demonstrated an unacceptable and disrespectful lack of regard for their health, safety and welfare. They are not pounding the table to demand something out of left field. They are proposing to move forward with an alternative that was one of the USACE’s top three choices. The viability of this reasonable compromise should not hinge on perceived increments of “delay” that are speculative in their design and arbitrary in their effect; they are unworthy of their current “kingmaker” status. This compromise should not be allowed to slip through our collective fingers right now because of the experimental and aspirational “1’s” and “0’s” in the Corps’ “matrix.”

Training Wall

WIIN 2016 requires that the Corps “maintain the pool” for some combination of “navigation, water supply, and recreational activities, as in existence on the date of enactment of this Act.” The three words “as in existence” are obviously open to a certain amount of interpretation. However, those three words should obviously be read to prohibit introducing new hazards “into existence” in the pool. Despite this fact, the USACE-recommended plan does just that.

THE PAAR/EA contains the following paragraph:

“Water depths over the training wall would be lower than the existing level for all of the alternatives that require demolition of the structure, except Alternatives 2-6a and 2-8.”

But of course the sentence is erroneous because every option under consideration will result in “water depths over the training wall would be lower than the existing level.” This is because every option under consideration lowers the pool elevation; and as such every option under consideration “would create potential hazards to recreational watercraft.”

The report also indicates that “while not exposed above the water, these areas would not have the needed clearance for boaters.” This is also erroneous because the training walls were in fact exposed during the drawdown; and they will be exposed more often during drought. This is one of many

examples of (1) the wide gap between reality and what the USACE modeling predicted; and (2) the need for more extensive study in the context of an Environmental Impact Statement.

Despite this fact, the training walls did not even make it into the recreation or navigation components of the analysis. Rather, the training walls are in the “Cultural Resources” section. They were on the “Cultural Resources” poster at the Mariott meeting on March 6th as well. The Report and the Poster indicate buoys and signs will be placed on the training walls but the purpose of these signs is unclear.

At first it appears they may be for protecting people (“USACE would place buoys and post signs to warn boaters of the potential hazards in order to avoid direct impacts to the resource”). But later in the Report it sounds like the signs may be more concerned about protecting “the resource” (“additional cultural investigations such as archival research or diver Investigations” won’t be necessary because “impacts would be mitigated through avoidance”).

The EA/PAAR should be amended to remove the appearance of a disregard for safety inherent in this language that makes it unclear whether USACE is mentioning the training walls at all because of the people or “the resource.” The EA/PAAR should be further amended to reflect other factors listed above, including the inclusion of the training walls in the recreation and navigation portion of the analysis. Additionally, USACE should make whatever other adjustment that are necessary to pursue the legislation’s directive to maintain the pool “as in existence” by not making it more hazardous.

Additionally, the PAAR/EA indicates that with Alt 1-1 “training wall and associated navigation features would not be exposed by lower water levels nor would the features pose hazards to any recreational watercraft users.” Then, the PAAR/EA indicates that with Alt 2-6d, “lower water elevations that would result [from Alt 2-6d] ...would create potential hazards to recreational watercraft.” We are told Alternatives 2-3, 2-6b, and 2-6c were “were eliminated from being selected as the recommended plan” because they were rated “-1” for Recreation. We are told Recreation was rated based on two factors: “boat docks and special events.”

Again, this discussion of training wall “hazards” didn’t even make it into the “Recreation” or “Navigation” analysis. For recreation, the PAAR/EA only considers special events and two foot depths at docks. For navigation, USACE only considers whether a three foot channel would still exist somewhere in the pool. The EA/PAAR should be amended and the analysis reworked to include the training walls in the recreation and navigation scoring/rankings.

If the scoring were amended in this way Alt. 1-1 would have been the recommended Plan (with no need for Locally Preferred Plan status) because USACE-recommended Alt. 2-6d would undoubtedly be assigned a “-1” (rather than a “0”) for recreation and navigation and therefore it would be “eliminated from being the recommended plan” like “Alternatives 2-3, 2-6b, and 2-6c.”

Aesthetics

The PAAR/EA discussion of aesthetics discusses the river below the NSBLD, the NSBLD and the NSBLD park. However, the aesthetics within the area or downtown Augusta are not addressed. The aesthetic values in the pool will be decreased with some of the alternatives discussed in the document. The recent draw down showed the negative aesthetic effects of the recommended alternative (2-6d). The EA/PAAR should be amended to account for the aesthetic impacts to the pool as observed during the draw down.

Recreation

WIIN 2016 requires that the Corps “maintain the pool” for some combination of “navigation, water supply, and recreational activities, as in existence on the date of enactment of this Act.” Again, these three words “as in existence” are obviously open to a certain amount of interpretation. However, those three words should obviously be read to prohibit introducing new hazards “into existence” in the pool. But again, the training wall—and the “hazard” it entails did not even make it into the recreation portion of the analysis.

“As in existence” should also be read to prohibit bisecting the pool with the hazardous training wall such that boating in the pool will occur in two separate areas that cannot access each other under a broad cross-section (but not particularly-defined) of flow of conditions. Despite this fact, the USACE has apparently elected to do just that. The USACE provided the following image to me. It shows the pool at 5,000 cfs.. Red and pink areas lack sufficient depths for watersports. The yellow arrow indicates the start of the training wall that bisects the pool.



According to the PAAR/EA, USACE would “post signs to warn boaters of the potential hazards in order to avoid direct impacts to the resource.” Again, the USACE’s modeling erroneously indicated the training walls would not “be exposed” at 5,000 cfs but the draw down showed otherwise. And again none of this factored into the USACE rankings/scorings for recreation or navigation.

These facts aside, the WIIN Act’s directive to maintain the pool “as an existence” should in all cases be read to prohibit the “bisecting” effect of the training wall described here and it’s severe restrictions on recreation and navigation.

The EA/PAAR should be amended to include the bisecting effect of the training wall and its limiting and hazardous effect on recreation and navigation. The rankings/scoring in the report should likewise be amended to reflect this reality.

Further, the EA/PAAR Appendix G indicates its recreation analysis is informed by assumption that “the most common boats typically seen navigating the NSBLD pool are power boats including roundabouts, pontoons, bass boats, and ski boats. Most of those water craft can operate with 2 feet or more of water depth.” I’ve prepared the table below to illustrate the reasoning in Appendix G.

USACE Definition:
“Adverse Impacts”

- Most boats currently using the pool are x.*
- Most x only need 2 foot depths (because with less than 2 feet, x have trouble “accessing the docks with the engine fully submerged.”
- Therefore, “docks with less than 2 feet of water depth in the action alternatives, but with equal to or greater than 2 feet of water depth in the NAA, would be considered adversely impacted.”

*x = “Power boats including roundabouts, pontoons, bass boats, and ski boats.”

As a result, in the recreation portion of the analysis only two foot depths are considered. This approach is flawed because it leaves out consideration of the boats that are not included among the population of boats under consideration. Effectively, this analysis only assesses the needs of "most of... the most common boats." The WIIN Act requires maintaining the pool for some combination of recreation and navigation "as an existence" on the date of the law's enactment. Failure to specifically identify which cross-section of boats whose needs are being assessed, and the open admission that an unquantified cross-section is being excluded from the assessment made clear that the cars analysis does not fulfill the requirements of the WIIN Act. The EA/PAAR analysis should at any rate be amended to describe with particularity which cross-section of boats have been given consideration in their analysis.

The EA/PAAR's analysis of recreation and navigation is also flawed in that it fails to give consideration to the carrying capacity of the pool. Once all the recreation navigation "in existence" in the pool is crammed into a smaller area that is bisected by a "hazardous" training wall, accidents and injuries will result.

Additionally, the PAAR /EA given no consideration at all to the injuries that will be suffered when folks on wakeboards, skis, jet skis and tubes are crammed into that small area. The two or three-foot area that is provided for "most of... the most common boats" will in no way be sufficient for the operation of wakeboards, skis, jet skis and tubes in only two or three feet of water. Anticipated increased flow velocity in the pool (resulting from the combination of constant flow rates and diminished channel size) will exacerbate these risks. Increased flow variability in the pool (resulting from the small amount of reregulation historically performed by the lock and dam) will have a similar effect.

Under the very best of possible scenarios the geographical extent of recreation and navigation in the pool will be severely restricted as a result of these factors. Drought will further diminish the recreational navigational quality of the pool. Any potential for boat strikes to endanger sturgeon that may inhabit the pool would also be a cause for concern for NOAA fisheries when they weigh in on future decisions for withdrawals and discharges in the pool.

The EA/PAAR should be amended to address these factors and amend its rankings/scoring to the extent necessary to produce a plan in line with the WIIN Act's requirement to maintain the pool "as in existence" for recreation and navigation. Again, it is likely that when the scoring's, rankings are

revisited the recommended plan will score lower than the locally preferred plan due to the inclusion of "hazardous" and severe restrictions on recreation navigation that were not addressed in the PAAR/EA.

Fish Passage Authorization

The PAAR/EA reports that "All alternatives evaluated fall into two broad categories, which are prescribed in the 2016 WIIN Act: 1) Repair of the Lock and Dam (NSBLD) lock wall and modification of the NSBLD structure to facilitate fish passage 2) Removal of the NSBLD structure with construction of fish passage structure" According to this reading of the law, both WIIN options "prescribe" a fish passage. However, it is unclear from the plain language of the legislation how this reading is possible. Put differently, WIIN Option 2 doesn't appear to authorize construction of a fish passage at all.

According to the WIIN legislation, Option 1 requires repair of the lock wall and "modification of the structure such that the structure is able ... to allow safe fish passage." Option 2, however, says nothing about a fish passage. It requires only "construction ... of a structure" and "removal of the New Savannah Bluff Lock and Dam on completion of construction."

Based on the plain language of the law, WIIN 2016 doesn't authorize construction of a fish passage absent choosing the option 1 ("repair of the lock wall" and "modification of the structure") and refusing Option 2 ("construction ... of a structure" and "removal of the New Savannah Bluff Lock and Dam on completion of construction").

The EA/PAAR should be amended to remove that portion of the rankings, scoring us they give credit to alternatives under option two (including the recommended plan) for fish passage effectiveness.

No Action Alternative

According to the EA/ PAAR, "The NAA typically represents the most likely future without project condition. As described previously (Sections 1.0 and 1.2.2), USACE is retaining the 2012 SHEP Plan ... as the NAA ... because it was the authorized plan on the date of enactment of the 2016 WIIN Act." Selecting a plan for the No Action Alternative that only existed on paper—and even then existed in a separate geographical location—is clearly inappropriate.

The no action alternative is intended to compare studied alternatives to the existing one for the purpose of comparing the alternatives by comparison to the results if "no action" were taken. Selection of this alternative skews the analysis in a variety of ways. The end result is an analysis that produces results that are misleading.

See the below table for illustration of this point. The table shows (1) the NAA water levels are lower than existing; and (2) "adverse impacts" described throughout the Report do not adequately capture the actual impact of the compare alternatives.

Adverse Impacts at Docks with 3,600 cfs Flows

Alternative	# Docks with depths less than 2 feet	# Docks with "Adverse Impacts"	Comment
EXISTING	8		Even under existing (current) conditions, 8 docks have less than two feet of water under them.
NAA	14		The NAA is worse than existing conditions by 6 docks.
1-1	23	9	1-1 is worse than NAA by 9 docks. The difference between 1-1 and NAA (9) is similar to the difference between NAA and existing (6).
2-6d	29	15	2-6d is worse than existing by 23 docks 2-6d is worse than NAA by 15 docks 2-6d is worse than 1-1 by 6 docks

Information is from PAAR/EA Appendix G:

[https://www.sas.usace.army.mil/Portals/61/docs/Planning/PlansandReports2019/FishPassage/Appendix G Recreation.pdf?ver=2019-02-15-191948-610](https://www.sas.usace.army.mil/Portals/61/docs/Planning/PlansandReports2019/FishPassage/Appendix%20G%20Recreation.pdf?ver=2019-02-15-191948-610)

The EA/PAAR should be amended to include the existing structure as the no action alternative in the scoring, ratings should be adjusted to adequately reflect the requirements of the WIIN Act to maintain the pool for some combination of recreation, navigation and water supply "as in existence" on the date of the law's enactment.

Biological Opinion

The Biological Opinion is a requirement of the Endangered Species Act. Its purpose is to set out parameters that must be followed when undertaking a project that will affect endangered species. The SHEP Biological Opinion was [originally issued by NOAA Fisheries in 2011](#). It required construction of the fish "bypass" to begin "concurrently" with inner harbor dredging.

The 2011 Biological Opinion was [amended after WIIN 2016 enactment](#). This new Opinion indicated it would be appropriate to effectively remove the "concurrency" requirement. This was justified in large part by the fact that the "in river" fish passage required in WIIN 2016 was superior to the "bypass" envisioned when the original Biological Opinion was written.

The new time line for fish passage construction requires that inner harbor dredging and fish passage construction should end around the same time. Given the projected construction durations for the inner harbor dredging and the fish passage, January 2021 was the date given for beginning fish passage construction. From the amended Biological Opinion.

According to USACE, many options for holding the pool level higher in Augusta have been "eliminated" because they would require too much time for purchasing properties and easements for flooding reasons. For example, the [Report issued recently in Augusta](#) (pages 100 and 101) indicates that "ALT. 2-6a" was eliminated.

But the dredging is behind schedule. USACE [hasn't started inner harbor](#) dredging yet and they don't expect to start until around October 2019. Additionally, there is some chatter that the "bubblers" in the harbor aren't working as hoped. The [2013 Settlement](#) between USACE, Georgia Ports Authority, South Carolina agencies and conservation groups requires proof that the bubblers are working before inner harbor dredging can begin.

As a result, there is a very real possibility that inner harbor dredging could be further delayed beyond October 2019. The [recent Proviso](#) in the South Carolina State House could also potentially have the effect of delaying inner harbor dredging because South Carolina [DHEC must agree](#) with any determination that the bubblers are working before inner harbor dredging can begin.

NOAA Fisheries has determined the species won't be jeopardized as long as the inner harbor dredging and fish passage construction end around the same time. Given the fact inner harbor dredging has been substantially delayed, it seems reasonable to expect that the time period for assessing options for the fish passage in Augusta should be extended.

Extension of the construction start date beyond January 2021 would allow more time to "learn lessons" from the Cape Fear fishway that [could soon be altered](#) to improve its ability to pass bass. Additionally, the extra time could allow for purchasing flood-related parcels or easements that correspond with plans to hold the Lock and Dam pool higher. In general, the extension would provide more time to reach an agreement on a plan that satisfies both requirements of the WIIN 2016 legislation: build a fish passage and maintain the pool "as in existence on the date of enactment of this Act."

The January 2021 construction start date is at this point an arbitrary and unreasonable constraint. Any demands by USACE or NOAA Fisheries to continue adhering to this constraint—in light of the substantial benefits that would come with an extension of the construction start deadline—would constitute indefensible exercises of the authority and discretion of these agencies.

This EA/PAAR has been unnecessarily rushed in the agencies should immediately announce the more time will be taken to supplement and otherwise inform the analysis to achieve the many benefits to our local communities described above.

The USACE's recent suggestion that Alt 2-6a is now a possibility (after previously being "eliminated from being recommended" because it would take too long to acquire necessary flowage easements) is proof that there is flexibility in this timeline. Any attempt by USACE and NOAA Fisheries to alter their definition of the construction start date as described in the Biological Opinion will be the subject focus in the future.

SRBCMP and Ecosystem Flows

"Ecosystem Flow Prescriptions," the Savannah River Basin Management Plan, Drought Contingency Plans and other related initiatives have prescribed flows through the Savannah River for years. This multi-decade and multi-million dollar effort is still ongoing. Environmental assessment is in fact still currently open for the latest round of drought contingency planning. Flows in the Savannah River are dictated by the needs of people and the environment throughout the basin from North Carolina to the Harbor. Prescribing these flows is a highly complex process.

For example, consider the recent revision to the Savannah River Basin Drought Contingency Plan. During the planning process Savannah Corps held a public meeting in North Augusta. Lake Thurmond folks were irate because drought releases from Thurmond would be higher under the plan than they

would like.¹ This has the effect of dropping Clarks Hill pool levels. The lower releases were required because a couple years earlier, Duke Energy renegotiated water levels at their hydroelectric lakes in upstate South Carolina.

As a result of the new higher water levels at Duke, Lake Thurmond releases had to be protected to keep Savannah Harbor salinity in check. You can't drive from the Duke lakes to Savannah in less than five hours. Nevertheless, constraints at the Duke lakes (hydroelectric) affected constraints at Thurmond (flow releases) to address constraints at Savannah Harbor (salinity).

Really, "prescribing flows" just means deciding the level of outflows from Thurmond Dam. Higher outflows mean a lower pool level for Clarks Hill stakeholders. The handful of Reports and Environmental Assessments that have been produced for these efforts over the years have paid almost zero to recreation, navigation, economics or aesthetics in the NSBLD pool. For example, see the Draft EA for the Drought Contingency Plan that is currently underway.

Historically, stakeholders in the NSBLD pool have apparently seen no reason to make their voices heard; they have been perfectly satisfied with the pool. The silence is certain to change with these plans to drop the pool elevation. Homes, businesses and industries in Augusta and Augusta are going to want more of Lake Thurmond's water in the future. This result is obvious and foreseeable.

However, despite the millions of dollars and decades of work for this important work, and despite the complex balancing that is required to satisfy the needs of the whole basin, this EA/PAAR fails to consider it at all. The Cumulative Impacts Analysis in the 2012 SHEP EIS—relied on heavily in the 2019 Supplemental EA released recently—notes often the effects of water flow on all the analyzed resources/ issues: wetlands, fisheries, dissolved oxygen, groundwater, endangered species and Tybee and nearshore area.

Flows are critically important; the 2012 SHEP EIS Cumulative Impacts Analysis and the 2019 NSBLD PAAR/EA saw it necessary to mention "flow" at a rate of around 1.4 times per page in their combined 240 pages. But at no time did either document mention the multi-decade and multi-million dollar SRBCS and allied projects designed to prescribe flows throughout the basin. The failure of the Cumulative Impacts Analyses—in the 2012 SHEP EIS and 2019 NSBLD EA—to account for this project's output renders hollow the EA/PAAR's conclusion that "any changes to NSBLD or construction of any fish-passage structure will not impact the flow levels at Augusta or releases from Thurmond Dam."

Current prescribed flows are setting parameters for this fish passage project; and this project will change future flows in important and complex ways. The failure of this PAAR/EA (and the 2012 SHEP EIS it's built on) to address this critical, complex and highly impactful factor is inappropriate. This highly important factor should be addressed in the cumulative impacts section of your analysis per the requirements of the National Environmental Policy Act.

Additionally, flows in the Savannah River are almost literally the lifeblood of many communities in this basin. The Corps of Engineers recognize this and has seen fit spent decades and millions of dollars prescribing these flows. However, the continued use of environmental assessments for projects and studies that affect these flows represents an inappropriate segmentation under the National Environmental Policy Act.

The fact that there are three environmental assessments ongoing right now covering about 20 River miles seems a clear indication that inappropriate segmentation is underway. The USACE should prepare an Environmental Impact Statement that cures the segmentation issue and addresses the

¹ See this video of the North Augusta Public Meeting at 31:30: <https://www.youtube.com/watch?v=0cMIKX416a4>
(Also see minute 37; the Corps Spokesman tells a Chronicle reporter the NSBLD rock weir will lower water levels.)

deficiencies in both the 2012 SHEP EIS and the current PAAR/EA that result from failure to adequately address the foreseeable cumulative effects of all these flow-affecting projects.

At any rate, the cumulative effects of this project and the inappropriate segmentation it represents dictate that an a finding of No Significant Impact for this project is inappropriate and an Environmental Impact Statement should be prepared—once and for all—to set out a scientifically-defensible framework for adjusting the Thurmond outflows that 200 miles of river depend on.

This Environmental Impact Statement should also be prepared to address (1) the latent deficiencies in the 2012 SHEP EIS that were settled but still problematic—particularly if a full river rock weir plan is carried forward—; (2) Groundwater effects that will result from lowering the Savannah River and correspondingly the levels of creeks and streams that flow into it; and (3) effects related to increased velocities in the pool, including increased sediment transport and decreased safety and economic values at the pool; and (4) the possibility that

Authorizations

The PAAR/EA reports that “with the cessation of commercial navigation, the lock and dam also ceased to deliver on its Congressionally-authorized purpose” and “as a result, funding for the project dwindled.” The USACE has been insistent that the NSBLD “hasn't served its federal purpose since 1979.” But, according to the Corps of Engineers the facility has more than one federally authorized purpose. A document entitled “Authorizing and Operating Purposes of Corps of Engineers Reservoirs” was prepared by the Secretary of the Army in 1992 following the directive of Congress to investigate and report to Congress the “authorized and operating purposes” of all USACE “reservoirs.” <http://www.hec.usace.army.mil/publications/projectreports/pr-19.pdf>

This Corps Report was cited as recently as the a 2016 GAO Report.

<https://www.gao.gov/assets/680/678670.pdf> According to the document, the NSBLD was authorized (at time of the passage of WIIN) by three separate pieces of legislation for three separate functions: commercial navigation (Rivers and Harbors Act of 1930 and 1935), reregulation (Rivers and Harbors Act of 1950), and recreation (Flood Control Act of 1944).

With regard to recreation, I've been informed recently that DNS feels he was in fact authorized for recreation. On the Balancing the Basin website I was provided with the following USACE response:

You are correct about the FCA authorizing recreation - and its inclusion of NSBL&D. The lock and dam park itself demonstrates your point.

https://disqus.com/home/discussion/balancingthebasin/why_augustas_river_level_shouldnt_determine_thurmond_discharge/#comment-4348317307

The PAAR/EA notes the Act authorizes some facilities for recreation, but it does not say explicitly NSBLD was authorized for this purpose. Rather than explicitly acknowledging the facility was authorized for recreation, it names recreation as an “incidental” use twice. The Corps should acknowledge these findings and amend the EA/PAAR to indicate the NSBLD was authorized for a variety of purposes.

Further, the 1992 document prepared by the Corps of Engineers at the behest of Congress indicates that are other authorizations as well. That document also predates “ecological restoration” authorizations.

Section 206 of the 1996 Water Resources Development Act provides for ecosystem restoration at existing projects. In January of that year the NSBLD lock was shut down due to safety issues. In the

following year, 1997, Savannah Corps used \$1mil from that year's Energy and Water Development Appropriations Act for repair of the lock from. Augusta contributed \$500,000 toward the full \$1.5mil lock repair price and in October of 1997 the lease at the facility (between Augusta and Savannah Corps) was amended to include instructions for providing fish passage under the direction of the Fish and Wildlife Service.

The PAAR/EA mentions passing "some migratory anadromous fish" near a discussion about incidental uses, but it's not clear Savannah Corps intends to name it as an incidental use. Regardless, based on the facts listed here it appears ecosystem restoration was a congressionally authorized purpose at NSBLD.

Lock Shut Down

The EA/PAAR indicates "the lock was closed permanently for operation in May 2014 due to concerns about the structural integrity of the lock wall." However, the lock was not shut down when the lock and dam was inspected in 2013. The lock was not shut down when the lock and dam was inspected for nine days in March of 2014. And it seems unlikely that "structural" and "safety" issues popped up between March and May 15, 2014, when the lock was shut down.

Rather, it seems likely that were other motivations for shutting down a lock. After the 2013 inspection the lock and dam was issued the "safest" rating the Corps gives (DSAC 4). Then a nine day inspection was initiated at the site in March of 2014. During the inspection, President Obama released a controversial budget with very little money for Savannah. Every member of the Georgia delegation joined in an angry letter to the president and angry words at committee hearings would follow. During hearings the administration explained that more money would be allocated to Savannah when the project's "environmental" and "mitigation" issues were resolved. The NSBLD's days were numbered.

Within two weeks of these tense Committee Hearings, on May 15, 2014, the stars aligned. Within a 12 hour period the lock was shut down indefinitely due to "safety issues" and the legislation carrying \$700 million for SHEP—after being stalled in conference for around six months-- came out and went to the president for signing in less than two weeks. The shutdown put the facility on the fast track to the deauthorization that environmental interests had been seeking for decades.

The USACE should amend the EA/PAAR to reflect the reality that the lock was not to shut down solely for "structural" and "safety" reasons. I've included a footnoted timeline below.

- Oct 23, 2013: House Passes Savannah Harbor dredging legislation (SHEP).
- October 31, 2013: Senate Passes SHEP.
- November 14, 2013: SHEP goes to House/ Senate Conference.
- December, 2013: Lock and Dam is inspected. Safety Classification (DSAC) level is "safest" given by Corps. ²
- January 17, 2014: Consolidated Appropriations Act provides money for Deauthorization Study as requested by Corps and required by Settlement. ³
- March 3, 2014: Corps begins a nine day inspection at Lock and Dam.
- March 4, 2014: President Obama releases budget with very little money for SHEP. ^{4 5}
- Mar 6, 2014: All 16 members of the Georgia congressional delegation send a letter to Obama Administration firmly requesting more money for SHEP. ⁶
- Apr 29, 2014: In hearings, Corps (Washington) tells House Subcommittee on Water Resources and Environment that, due to "environmental" and "mitigation" issues, more authorizations from

² https://www.publications.usace.army.mil/Portals/76/Publications/EngineerRegulations/er_1110-2-1156.pdf

³ <https://www.sas.usace.army.mil/Portals/61/docs/Planning/Reviewplans/FINAL%20NSBLD%20Review%20Plan%20-%20PCX%20Endorsed.pdf>

⁴ Budget with minimal funding released during inspection so that political pressure could be applied at just the right time.

⁵

⁶ <https://www.isakson.senate.gov/public/index.cfm/2014/3/georgia-delegation-urges-obama-administration-to-support-savannah-harbor-expansion-project>

Congress will be needed before SHEP will receive construction funds.

May 15, 2014: Corps discovers "Structural issues" at the Lock and Dam and it is closed indefinitely.⁷

May 15, 2014: SHEP Conference Report filed and sent to President Obama for signing and passage.⁸

June 10, 2014: President Obama signs SHEP legislation into law.⁹

Aug 18, 2014: Corps issues Review Plan for Deauthorization Study of the Lock and Dam.¹⁰

Feb 27, 2015: Legislation deauthorizing the Lock and Dam and authorizing fish passage introduced in Senate.

"Collapse is Inevitable"

The USACE has been telling us for years the lock and dam could fall down any minute with quotes like this one:

"Yet, the lock and dam are in such disrepair that our engineers say its collapse is inevitable. This is why the WIIN Act legislation is good news for the Cities of Augusta and North Augusta: it solves the problem of pending failure of the lock and dam and provides federal protection for the pool."

<http://balancingthebasin.armylive.dodlive.mil/2017/05/05/misconceptions-on-fish-passage-corrected/#more-2624>

Perhaps USACE has been telling us this to make the loss of the structure more palatable for our communities. The narrative goes like this: if we weren't building this fish passage, the lock and dam could collapse at any moment, and area homes and businesses and industry would lose the pool. Many people throughout the region are actually apathetic about the current situation because they have listened to the USACE; they believe the current plans will at least save the pool that would be lost when the structure inevitably collapses.

For example, during a recent radio show, popular commentator Austin Rhodes seemed indifferent about the lock and dam situation. Rhodes said the lock and dam is "failing" and it's in "bad bad shape" and his general tone was that at least the fish passage would avoid an imminent collapse of the structure. The Savannah Riverkeeper agreed and assured the audience the fish passage is a good thing because the structure was going to "fall in the river" and this legislation fixes it and "protects the pool for the very first time." <https://wgac.com/shows/austin-rhodes/>

However, the EA/PAAR indicates that is not the case. We are told in the Report the USACE is "not expecting an imminent collapse." The USACE has been ambiguous and misleading about this Dam Safety issue for years. Collapse at the lock and dam would be unsafe for folks at the lock and dam. It would also be unsafe for anyone immediately downstream or in the pool on boats, jet skis and the like.

Additionally, a large cross-section of our community has become apathetic to the issue at hand under the belief that the structure needs to be removed any way to avoid it "imminent collapse." The USACE should extend the comment period for this EA/PAAR and take the opportunity to inform the public in unambiguous terms that this facility is in no danger of "imminent collapse." Such an extension would make this public involvement process far less misleading and far more transparent and ethical.

Regardless, if NSBLD were in fact "falling in," that is the responsibility of the USACE. 2000 Legislation required the rehabilitation of the Lock and Dam at full federal expense. It also required the USACE to

⁷ 2014 WRRDA Conference Report filed and set for President signing into law on the same day LD is shut down.

⁸ <http://balancingthebasin.armylive.dodlive.mil/2014/07/30/nsbldupdate/#more-1641>

⁹ President Obama signing remarks: 2014 WRRDA will "put Americans to work modernizing our water infrastructure and restoring some of our most vital ecosystems."

¹⁰ <https://www.sas.usace.army.mil/Portals/61/docs/Planning/Reviewplans/FINAL%20NSBLD%20Review%20Plan%20-%20PCX%20Endorsed.pdf>

maintain the project in the meantime. <https://www.congress.gov/106/plaws/publ541/PLAW-106publ541.pdf>

So after the 2000 legislation, local communities have watched and waited for nearly 20 years as the NSBLD languished while the USACE, the GPA and their adversaries settled on the best way to ignore the 2000 law and hand the facility over to GPA and the Savannah Harbor. To the extent the NSBLD is actually in disrepair or “falling in,” that is the responsibility of the parties who have refused to repair the facility in accordance with the law while holding the site out as payment for harbor deepening.

Choosing to ignore the 2000 law that benefitted Augusta while pursuing the 2016 one that will benefit Savannah to our detriment has been unfair to Augustans. This tradeoff has shown a callous disregard for the rights and welfare of Augustans. The EA/PAAR should be amended to reflect the reality that any disrepair at the facility is the responsibility of the USACE and that the necessary repairs wouldn't be forthcoming as long as Savannah needed it for mitigation.

Table - Plain Meaning of the WIIN Act.

I have included a Table describing the pool “as in existence” on the date of the enactment of WIIN. The EA/PAAR, and the process underway in general, should be amended to reflect each these factors.

DEC. 16,
2016

WATER INFRASTRUCTURE IMPROVEMENTS FOR THE NATION ACT

"... maintain the pool for navigation, water supply, and recreational activities, **as in existence** on the date of enactment of this Act ..."

NAVIGATION
+ RECREATION

1	We should still have the same access to the Lower Savannah River and the Atlantic Ocean.	ATLANTIC ACCESS
2	The pool should be regulated (to smooth out large, sudden flows from Thurmond and elsewhere) to the same extent.	VARIABILITY
3	The pool level should stay safely above the trainings wall and other obstacles to the same extent.	TRAINING WALL SAFETY
4	The pool should stay deep enough for boating during drought to the same extent.	DROUGHT
5	The pool should stay deep enough for a variety of different boating activities to the same extent.	DEPTHS
6	The pool should provide for widespread recreation and boating to the same extent. For example, the training walls should not bisect the pool and prohibit movement between the two sides.	GEOGRAPHICAL EXTENT
7	Flow velocities in the pool should not be increased. Increased flow velocities make the pool less safe and increase sediment transport.	FLOW VELOCITIES
8	Access to the pool (from docks, ramps, etc.) should not be affected.	ACCESS
9	The aesthetic quality of the pool should not be altered.	AESTHETICS
10	Recreation in the edge areas of the river should be available to the same extent	EDGE AREAS
11	While maintaining the pool for navigation as described in numbers 1 through 9 above, the pool should provide flood protection to the same extent.	FLOOD CONTROL INCIDENTAL TO RECREATION AND NAVIGATION

WATER SUPPLY

12	The pool should provide for withdrawals (now and in the future) to the same extent.	WITHDRAWALS
13	The pool should provide for discharges (now and in the future) to the same extent during drought and otherwise.	DISCHARGES
14	The pool should be able to easily pass sediment and debris to the same extent during drought and otherwise.	SEDIMENTATION AND DEBRIS
15	While maintaining the pool for water supply as described in numbers 10 through 13 above, the pool should provide flood protection to the same extent.	FLOOD CONTROL INCIDENTAL TO WATER SUPPLY

April 8, 2019

U.S. Army Corps of Engineers, Planning Division
Attn: Ms. Robin Armetta (PM-P)
100 West Oglethorpe Avenue
Savannah, Georgia 31401-3640

Re: Comments on Savannah Harbor Expansion Project Documents
USACE Public Notice dated February 14, 2019

Dear Ms. Armetta:

Attached please find comments on referred project and associated documents. These comments are submitted in response to USACE Public Notice dated February 14, 2019.

Thank you

Sincerely

A handwritten signature in blue ink, appearing to read 'Hameed Malik', with a stylized flourish at the end.

Hameed Malik, Ph.D., P.E.
Geotechnical and Water Resource Engineer
4102 Shady Oaks Drive
Martinez, GA 30907
Email: malikh@bellsouth.net

Attachment: Comments Memo

Memo

RE: USACE PUBLIC NOTICE, DATED FEBRUARY 14, 2019

Comments on the proposed Savannah Harbor Expansion Project (SHEP) Fish Passage at New Savannah Bluff Lock and Dam

To	USACE; Ms. Robin Armetta (PM-P) and Ms. Julie Morgan (PM-P)
From	Hameed Malik, Ph.D., P.E.. Geotechnical and Water Resource Engineer / Director Engineering, Augusta, GA
Date	April 8, 2019
Subject	Comments on Savannah Harbor Expansion Project documents

Introduction

The focus of this memo is to provide comments on the proposed Savannah Harbor Expansion Project (SHEP) Fish Passage at New Savannah Bluff Lock and Dam. The primary document reviewed was the *“Savannah Harbor Expansion Project, Georgia and South Carolina: Fish Passage at New Savannah Bluff Lock and Dam Integrated Post Authorization Analysis Report and Supplemental Environmental Assessment”* from February 2019. The comments below were created from the information presented in this document in addition to primary literature and supporting documents regarding the investigated species and similar projects. Both general and specific comments are provided.

General Comments

The document relies on many assumptions that are not supported by scientific data. References are unsubstantiated in supporting documents and often rely on personal communication. No data is available for the current spawning success for shortnose or Atlantic sturgeon downstream of the dam. Additionally, limited data is available for shortnose and Atlantic sturgeon concerning fish passage technologies.

Specific Comments- Categorized By Major Topics

Flow and design

Section 3.7, pages 100 and 101: The SHEP document expressed concern regarding the sturgeon’s ability to use the fish passage next to the existing dam. It was speculated that the fish could get confused during periods of high water flow. In addition, it is stated that the No Action Alternative (NAA) fish passage would be successful but would cause delays due to the dam, whereas the alternative 2-6d passage would result in successful passage with no delays. There is little evidence stated to substantiate these claims so the level of success has yet to be quantified. For Atlantic sturgeon, there is limited experience with a large pool-and-weir style of fish passage and no

evidence for a steepass, denil or nature-like design (ASMFC 2010). Additionally, for shortnose sturgeon little evidence is available. A pool-and-weir fish passage exists at Cabot Station on the Connecticut River but no shortnose sturgeon have been documented using it (ASMFC 2010).

Section 2.2.2, page 18: The SHEP document fails to explain the percentage of the time the flow of the Savannah River is greater than average, and what “high” flow actually means. It states that “average” flow between 3,600 cfs and 8,000 cfs occurs 66% of the time.

Section 3.1.1, page 49: Additionally, the document says that flow above 5,000 cfs occurs 77% of the time. These values do not provide information regarding how often the flow is “high” and what high flow actually means. This is problematic since this is a key point in the argument for the selection of alternative 2-6d. Furthermore, there is no explanation regarding why the implementation of a weir would not result in this same confusion and delays. While the water movement is more “natural” with a weir, it will still be necessary for the sturgeon to locate the fish passage, which has been stated as difficult during periods of high water flow.

Section 3.5.1.7, page 67; Section 3.6.6.5, page 87; Section 4.4.1, page 106; Section 4.10, page 112: It is stated that the structure (e.g. the elevation of the passage and the way that it mimics rapids) will attract the sturgeon in the alternative 2-6d plan. The assertion that the rapids style of fish passage will attract the sturgeon and encourage them to cross over to their historic spawning sites seems to disagree with the species life history characteristics. Sturgeon are a primarily benthic species that would not be found navigating rapids. Literature suggests that successful passage of benthic dwelling fish species, specifically sturgeon species, cannot be guaranteed despite some U.S. Army Corps assertion that “*The fish bypass will enable sturgeon and other species to access historical spawning grounds at the Augusta Shoals*” (Robillard 2014). The flow of water that a rapids style passage provides may lead to decrease confusion regarding the location of the fish passage, but it should not be assumed that the passage will be successful. In addition, it appears that the success of the pool-and-weir category of fish passage may depend more on size than anything else (ASMFC 2010).

Section 2.2.6, page 29: Design of the fish passage was based on guidelines from an Interagency Technical Memorandum (Turek et al. 2016). The purpose of this document was to provide a summary of existing fish swimming and leaping performance data for 14 diadromous species of fish in Atlantic coast rivers and streams. Both Atlantic and shortnose sturgeon are part of these 14 species, however, data for shortnose sturgeon was not available at the time it was written. This is problematic because shortnose sturgeon is one of the two species of concern for construction of the fish passage. The shortnose and Atlantic sturgeon are both endangered, so construction of the fish passage needs to incorporate data for both species.

There is insufficient data for species-specific rationales for both shortnose and Atlantic sturgeon in relation to passage guidelines, which is stated throughout the supporting document. For example:

- “Data are lacking for total body span (including pectoral fins) for Atlantic sturgeon, but have been estimated as 27% of TL in lake sturgeon (L. Aadland, Minnesota Department of Natural Resources, pers. comm.)”

- “Data are lacking for total body span (including pectoral fins) for shortnose sturgeon, but have been estimated as 27% of TL in lake sturgeon (L. Aadland, Minnesota Department of Natural Resources, pers. comm.)”
- “While data are lacking for shortnose sturgeon, lake sturgeon are known to use and pass nature-like fishways in groups (L. Aadland, personal communication).”
- “No sprint swimming data are available for adult shortnose sturgeon.”

Considering the purpose of this project is to mitigate impacts to shortnose and Atlantic sturgeon, it is important to have species-specific supporting data for these two species when designing a fish passage. No such data is presented.

Sturgeon Spawning

Overall, vital information regarding the current success of the sturgeon spawning downstream of the dam is missing from the document. This information would be essential for quantifying the expected success of the fish ladders and the population sizes expected to use them. Additionally, restoring the historic spawning site of the Augusta Shoals is essential since the area that they are currently presumed to be using will be impacted by the SHEP project. Presently, there is no quantification of what percent of the population is successfully spawning at this time and how that could increase or decrease with the addition of a ladder. Furthermore, spawning data in the Savannah River for Atlantic and shortnose sturgeon is extremely limited and outdated. Collin and Smith 1997, indicated that the Savannah River supports a reproducing subpopulation of Atlantic sturgeon. Also, in late summer of 1997, a running ripe male was captured at the base of the dam at Augusta (ASSRT 2007). This data, however, is not enough to support evidence of a successfully spawning population of sturgeon or how the population will shift after the addition of the ladder.

Section 3.6.6, page 83: The document states that construction, resulting in increased sedimentation and decreased dissolved oxygen will not be carried out between April and August upstream and between August and April downstream. These time frames were given since it is assumed that sturgeon species spawn in the spring and summer, between April and August. However, additional research about Atlantic and shortnose sturgeons suggest that they oftentimes do not spawn at the same time and Atlantic sturgeon spawning can occur in autumn (NOAA 2019). Furthermore, in general, Atlantic sturgeon spawning is not consistent and is seen to occur at slightly different times in the year depending on the location (ASMFC 2019). Atlantic sturgeon spawning can be triggered by temperature, so if there is a warmer or cooler season, the spawning times can change. Since sturgeon have not specifically been tagged or observed just downstream of the dam where they are assumed to spawn, it is not possible to concretely state when these populations complete their spawning events.

Section 3.6.1, page 70: Following the prior point, the SHEP document states that this watershed is not highly vulnerable to the effects of climate change, but any ecosystem shifts could result in significant alterations. No climate data from the Savannah River is presented to substantiate this claim.

Habitat alteration

Section 2.2.6 page 25: The report does not quantify any spawning habitat for the sturgeon both historically in the Augusta Shoals and downstream of the current dam, but verifies that spawning must be occurring in this area since the juvenile populations were found. Hall et al. 1991 identified two probable spawning sites in the Savannah River, and in addition a probable nursery for juvenile shortnose and Atlantic sturgeon. However, little is still known about the spawning and juvenile populations, and the first extensive investigation into the juvenile Atlantic sturgeon populations in the Savannah estuary were presented in Bahr et al. 2016. Bahr et al. aimed to quantify the recruitment of Atlantic sturgeon in the Savannah River by estimating the annual abundance of juveniles of the species. This study concluded with suggesting that the Savannah River population is likely the second greatest within the South Atlantic population, but was unable to verify a spawning grounds in the region. It presents this as a success since this area experienced severe overfishing of sturgeon in the early 1900's.

Section 4.7 page 111: Based on supporting documents, the general activities of SHEP will likely adversely affect the area where juvenile Atlantic sturgeon were found, and there is still a significant concern regarding how the decrease in water quality could affect spawning and the juvenile populations (NOAA, 2017). While the SHEP project has stated that they will attempt to mitigate issues such as decreased dissolved oxygen using regulatory devices, it will be nearly impossible to quantify if those mitigation measures will be successful given the lack of spawning data available for the region. The SHEP report acknowledged that environmental impacts from the construction should be avoided, however, where avoiding them all together is not possible, measures will be put into place in an attempt to mitigate them. Implementing a device to retain ideal dissolved oxygen concentrations and reduce sedimentation is necessary but does not touch upon the additional issue of temperature and salinity. Jenkins et al. 1993 explored the dissolved oxygen and salinity tolerances of juvenile shortnose sturgeon at a variety of life stages. It was found that the younger the sturgeon, the more sensitive they are to fluctuating or extreme dissolved oxygen and salinity. As they get older, they are more tolerant of a broad range and mortality levels decrease, however, the lock and dam alteration and construction will be focused in an area that is presumed to be the current spawning sites for sturgeon. Thus, this area would be expected to contain the greatest amount of young juvenile sturgeon. Given this, any dredging or construction at all will likely result in at least temporary impacts to not only the spawning populations, but also the juveniles under 2 years old who would still be found upstream in the river.

Costs

The document is not consistent when presenting the costs for the each alternative making it difficult for the reader to actually understand the true costs.

Changing costs are seen with Alternative 2-6d. For example:

- *Executive Summary, page ii*: it is stated that the total final cost of the project will be \$87,152,000, however, this does equate to the other costs listed for the selected alternative 2-6d.
- *Section 3.5.1.7, page 68*: 2-6d is quoted as costing \$90,945,838 initially and then \$45,000 annually
- *Section 3.7, Table 29, page 100*: it is quoted as costing \$3,334,000 annually.

This trend of changing prices was seen for the No Action Alternative (NAA) as well. For example:

- *Section 3.5.1.1, page 61*: it was initially cost at \$63,000,000 with no annual cost
- *Section 3.7, Table 29, page 100*: the annual cost of \$3,286,000 is suggested.
- *Section 1.1.1, page 2; Section 2.2, page 14*: As of 2016, the dam was stated to be in “poor condition and in need of repair” so maintenance or building would be required as soon as possible. These values are important since displaying the financials alone this way do not express the full realities of each alternative. Having some realistic idea of how much the renovations or new dam would cost in the future would aid in solidifying what solution is both the best ecologically and economically. Older dams require more consistent maintenance and are prone to cracks, with a life expectancy of 50 years (Mission 2012). An online post from the US Army Corps of Engineers published on the 18th of March once again state differing values with the NAA option coting a total of \$380,319,000 and alternative plan 2-6d costing \$105,456,000. This inconsistent information makes it difficult to properly assess what is presented for the project. In addition, it appears that the US Army Corps of Engineering cost estimating group has no confidence in its own data yet. Given this, how does the US Army Corps of Engineer expect that general public and impacted local governments will accept presented costs as true value?

Section 1.1.1 page 2: The lock has been non-operational since 2014 due to its age. Dams too have a lifespan implying that the structure will require upkeep, repairs, and rebuilding depending on its condition. Repairing the lock and dam and adding a fish passage only ensures that repairs will again be required in around 50 years. This would be an additional cost that would not be present with the removal of the lock and dam and the addition of a weir and fish ladder. The cost of replacing or fixing the dam in the future when it comes to the end of its lifespan is not mentioned.

Water Supply and Recreation

Section 2.2.13, page 43-44: The New Savannah Bluff Lock and Dam (NSBLD) no longer serves commercial use but the resulting water upstream of the dam serves two municipalities and four industries including: North Augusta, River Golf Club, Augusta, SCE&G (Urquhart Plant), Kimberly Clark, and Potash/Fibrant/Chem Trade/Augusta Sulfate. The document does not state the current impacts to these water users. Water usage ranges from 1 to 217 million gallons per day depending on monthly permits. A separate intake report evaluating impactful changes was prepared but it is not available to the public because it contains industry protected information.

Section 1.4.3, page 10; Section 3.2, page 52: Furthermore, the water supply and recreational activities would be maintained with the addition of the weir and fish ladder, so citizens and municipalities would not be greatly affected in that sense. However, the addition of a weir could result in inconsistent water levels upstream of the weir, which is concerning to some citizens. The surrounding communities have come to rely on the amount of water in a river beyond the dam as opposed to natural fluctuations that a weir would supply. The interactive map created by the USACE displaying how the river would change given all of the alternative scenarios proposed shows that the alteration will be minimal with the implementation of the proposed plan 2-6d. When overlaid with the current profile of the river, the alternative plan 2-6d will likely only marginally increase the shoreline. Since this change would be minimal, benefits to water supply and recreation should not be inhibited by this alteration. Contrary to stated conclusion, drawdown in February 2019 to simulate plan 2-6d post-construction pool level does not support stated conclusion; pool level drop was significantly greater than model projected value. Accordingly inhibiting water supply and recreation most likely.

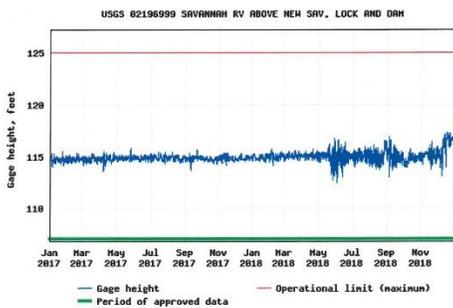
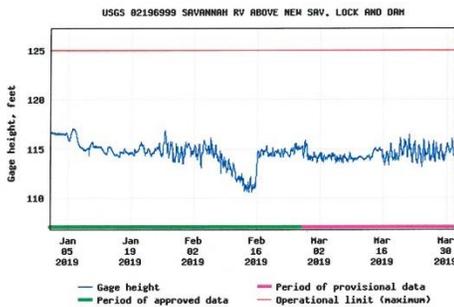
Dissolved oxygen Alteration / Water Quality Standard Compliance

Atlantic sturgeon are sensitive to and driven by temperature and dissolved oxygen changes. In addition, Savannah River is not meeting dissolved oxygen water quality standard. A Category 5R alternative restoration plan was developed in order to bring the Savannah Harbor reach into compliance with the standard. Foundation of the model was based upon existing natural background physicochemical and biological conditions. A significant source of dissolved oxygen generation within the Augusta reach of the Savannah River included aeration of the river water as it cascaded over the dam (NSBL&D). Removal of NSBL&D with Option "2-6d" is resulting in altering existing natural background leading to impact dissolved oxygen dynamic. Any loss or gain of dissolved oxygen within the Savannah River system below Thurmond Dam will impact the 5R process and could jeopardize restoration of dissolved oxygen in the Savannah Harbor. Resulting decrease in water quality could affect spawning and the juvenile populations. Impact of Option "2-6d" on dissolved oxygen is not mentioned.

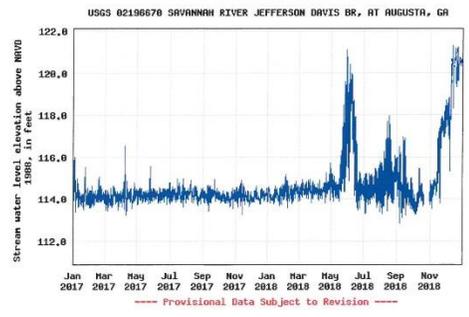
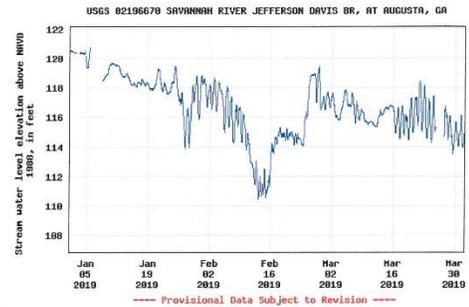
Savannah River Drawdown / Water Level Simulation

USACE water level modeled simulation predicted that implementation of Option “2-6d” yields 1.9ft pool drop around 5th Street Bridge location (Augusta Downtown). USACE proposed the drawdown to show the impact on the river’s pool of the corps removing the 80-year-old lock and dam and replacing it with a rock weir and fish passage (Option 2-6d). USACE tested the model in real time on February 13, 2019. The observed change in pool level was far greater than the 1.9 feet predicted. USGS gage located at downtown Augusta location (gage 02196670) registered around three (3) feet drop in pool level on drawdown day. There is significant difference between model predicted pool level and pool level registered at Augusta downtown gage. This noted discrepancy raises serious concern about validity of USACE model results. With three (3) ft drop in pool, impact of real pool level drop on local economy and quality is significantly higher than predicted by the USACE. It demonstrate that impact of Option 2-6d is beyond acceptable pool level.

Richmond County, Georgia
 Hydrologic Unit Code 03060106
 Latitude 33°22'23", Longitude 81°56'32" NAD27
 Drainage area 7,508 square miles
 Gage datum 96.58 feet above NGVD29



Richmond County, Georgia
 Hydrologic Unit Code 03060106
 Latitude 33°28'36", Longitude 81°57'26" NAD27
 Gage datum 100.00 feet above NAVD88



Groundwater Ecosystem / Exposed Sediments

Impact of groundwater drawdown on ecosystem functioning in vicinity of the water table is critical. Groundwater ecosystem may be vulnerable to environmental change and disturbance due to the relatively stable physicochemical conditions (Humphreys WF 2006). Microorganisms are strongly adapted to such stable conditions and any environmental changes might lead to changes in biological community structure (Stein et al 2010). Impact of Option “2-6d” on groundwater ecosystem is not mentioned.

In addition, pool drawdown showed the extent of new sediment that would be exposed as a result of pool elevation changes. Those sediments will be exposed to new wave lapping and rainfall/runoff erosion processes. It is unclear whether those newly exposed sediments contain legacy pollutants and what the fate and transport of those pollutants may be. There is possibility that toxic components could be mobilized as a result of erosional forces, this could have a significant impact on drinking water supply for the Max Hicks drinking water plant (intake below Augusta Marina), on aquatic biota, recreational activities, and on sporting activities such as the Ironman triathlon. Impact of sediment exposure under Option “2-6d” is not mentioned.

Pool Level Drop and Infrastructure Instability

February 2019 drawdown resulted seawall near failure. Cracks developed in the soil behind a seawall on a property adjacent to the Savannah River. Whether the seawall was installed properly or not is a matter of discussion, but the incident elucidated an important facet of the river system that could have a major effect as a result of a lower pool elevation. The pool elevation sets the



piezometric head for all surface and regional surficial groundwater systems that drain to the river. Changing pool elevation will have an impact on the regional surficial groundwater table by decreasing piezometric head and lower water levels in the watershed that drains to that pool elevation. This impact could have significant impacts in areas where groundwater drawdown weakens under portions of each city that are supporting significant infrastructure. This again, shows that the series of dams in the Savannah River are the “new normal” for the river and changes that effect widescale systems, such as the regional groundwater system, could have significant economic impacts if not appropriately studied and accounted for. How will this potential impact be addressed if the pool elevation is proposed to be lowered from current normal levels?

Comments Concluding Summary:

In summary, the USACE failed to demonstrate/establish intended “biological benefit” from the chosen mitigation measure, “2-6d” (lowered fixed crest weir with dry floodplain bench-108ft NGVD29). While it is a given that implementation of chosen “Option 2-6d” will destroy billions of dollars of the local (Augusta Metropolitan) economy, devalue real estate and lower quality of life that has been developed with the underlying assumption of maintaining Savannah River’s historic pool level. In addition, if “option 6-2d” is implemented, it is without doubt that the physio-geological forces currently maintaining the mid-channel “gravel bar” will be removed and the imprinted/endangered habitat will no longer be available as a spawning habitat for these endangered species.

- i) What justification do USACE and NOAA have in experimenting an unproven “biological hypothesis” by removing the New Savannah Bluff and Dam at the cost of ruining billions of dollars of local economy, and destroying the matrix and location of downstream “gravel bar”, a spawning habitat for endangered species?
- ii) What recourse does USACE have if removal of the dam will not yield targeted “biological” results?

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April 9, 2019

Ms Robin Armetta (PM-P) / *Ms Julia Morgan (PM-P)*
U.S. Army Corps of Engineers
Savannah District
Planning Division
100 West Oglethorpe Ave.
Savannah, GA 31401

Dear Ms Armetta, *and Ms. Morgan*

Please find attached my comments and questions related to alternatives for the New Savannah Bluff Lock and Dam (NSBL&D) fish passage, I am grateful to the Corps for providing extra time to submit comments beyond the original comment period.

Over the past 15 years, I have had the great fortune of being able to study the Savannah River above, below, and including the reach that would be affected by changes to NSBL&D. As a result, I have included data where I thought it would be reasonable to formulate my questions.

When the decision to cease lock operations due to safety in 2014 were set in place, I began a discussion about a rock arch ramp alternative as a result of seeing a similar scenario in the Cape Fear River. I am in support of a rock ramp design. However, I had not envisioned and do not support that scenario if it causes significant impacts to the protected fish species that the intended changes are to benefit (Atlantic sturgeon, Shortnose sturgeon, or Robust redhorse), and if it causes significant impacts to the local economy and overall water quality. My comments in the document that follows identify some of the pitfalls that need to be navigated in order for any alternative to be accepted. Briefly, my concerns are in the following areas:

- Impacts of lowering of the pool elevation
- Destruction of current, federally protected, spawning habitat below NSBL&D
- Lack of an adaptive management plan to achieve successful spawning behavior after construction
- Lack of an adaptive management plan related to flow changes after construction
- Lack of an adaptive management plan for potential water quality impacts, specifically dissolved oxygen and mobility of legacy components in newly exposed sediments

I am not convinced that fish passage above NSBL&D is sufficient mitigation for destruction of estuary habitat. I realize this is not the Corps' purview and in my comments, I have specifically asked for NOAA-NMFS justification for that cost-benefit analysis. Furthermore, I do not agree that impact to the overall endangered species fisheries in relation to impacts of known and protected spawning habitat, the gravel bars below NSBL&D, has been fully thought through given the homing instincts of these protected species. There must be further actions to mitigate this impact because it is highly likely the current populations of these endangered fish will not seek shoals habitats and will continue to seek impacted gravel bar habitats that they have high site fidelity for. Mitigation of gravel bar impacts could possibly be achieved through enhancement of the gravel bars below NSBL&D once construction is complete and should be part of an overall adaptive management program.

As a result of the drawdown and observations of the immediate sediment exposure and stream bank failure impacts, I am convinced that the pool elevation has to remain at current condition, generally within 115' elevation $\pm 1'$; any other scenario would cause significant economic and water quality impacts.

There is clear avoidance of the 1-1 alternative as a chosen option and there is clear avoidance of 2-6d as a chosen option, I agree with arguments from both sides. To me, option 2-8 (Weir with gated bypass channel) provides all needs for all concerns. This option provides an adjustable structure so pool elevations can be maintained, similar to current conditions, and also provides a full, in-stream rock ramp for fish passage. Realizing this scenario is more costly, it is the option that addresses all of my concerns outlined in the document that follows and all concerns for all parties that have voiced opinions on this project thus far; my recommended alternative is 2-8 with addition of the adaptive management components outlined herein.

Thank you for the opportunity to submit my comments on this important project. Please feel free to contact me if the need arises.

Sincerely,



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Comments to USACE on New Savannah Bluff Lock and Dam

Impact of dam alterations on Savannah River fisheries

Currently, NSBL&D provides appropriate hydrologic forces to maintain an approximately 50' scour pool on the downstream side of the dam. This scenario provides unique physical and geological forcing necessary to maintain a mid-stream gravel bar located approximately 600 ft downstream of the dam and scour pool. This geological and physical forcing has been in place for over 90 years, since the dam was constructed, and is considered the contemporary "new normal" for biological species in the Savannah River with life spans of 90 years or less. It is expected that all alternatives for fish bypass/NSBL&D modification will alter the necessary erosive flows and sustaining dynamics currently maintaining this gravel bar, resulting in alteration of this important spawning habitat (USACE, 2018): the extent of impact is not known.

Experts that have studied Savannah River fisheries have concluded that several endangered species rely on the gravel bars below NSBL&D for suitable spawning habitat. Grabowski and Isely (2006) showed that the endangered (Georgia listed) robust redhorse relied on the only two known gravel bars below NSBL&D for spawning and showed a high degree of site fidelity for spawning at those two sites. Freeman and Freeman (2001) concluded that the endangered robust redhorse uses gravel bars exclusively with the bar below NSBL&D as a critical habitat. For Atlantic sturgeon, NOAA-NMFS designated the gravel bar below NSBL&D as an endangered habitat critical to support spawning of Atlantic sturgeon in 2017 (NMFS, 2017; USACE, 2019).

Shortnose and Atlantic sturgeons as well as Robust redhorse have keen site fidelity to spawning grounds. Kynard et al (2016) indicated that shortnose sturgeon return "home" to the same reach with 100% site fidelity and spawn annually at the same small sites. Less is known about the Atlantic sturgeon but they are also believed to have high site fidelity in southeastern rivers (Collins, et al., 2000). Robust redhorse are known to have high site fidelity in the Savannah River Basin (Grabowski and Isely, 2006).

In all rivers where Shortnose sturgeon studies have been conducted, it was shown that these fish spawn at one reach, the most upstream reach used during their life history (Kynard, et al., 2016). Kynard et al (2016) also suggested that female shortnose sturgeon that have historically spawned below dams are more genetically hard-wired to home to their historical spawning grounds. Finally, Kynard et al. (2016) suggested that even if river rapids exist, which are believed to be the favored spawning conditions for shortnose sturgeon, this does not mean that they will seek those areas if that individual imprinted at a different reach during the early life stages.

No matter the option chosen for NSBL&D, either rock ramp or bypass, it is without doubt that the physical and geological forces currently maintaining the mid-channel gravel bar will be removed and the imprinted/endangered habitat will no longer be available as spawning habitat for these endangered species. Hypothetically, if these fish do not use the rock ramp, either as a bypass or in-river structure, to move further upstream during spawning migrations to the Savannah river shoals area (the presumed preferred habitat), it could cause a devastating

collapse of the Savannah River populations of Atlantic sturgeon, Shortnose sturgeon, and Robust Redhorse by significantly reducing spawning success at either the gravel bars or shoals reaches.

In 2013, the Cape Fear rock arch ramp was officially unveiled. This structure replaced a similar low head dam structure, like NSBL&D, while leaving in-place a lock system. This would be an excellent opportunity to learn how successful it has been regarding fish passage.

Unfortunately, NCDNR is not permitted to tag the endangered Shortnose or Atlantic sturgeons and have only been tracking migrations of shad, herring, and striped bass. Therefore, there is no data available on passage for the endangered sturgeons. There has been one observation of an Atlantic sturgeon above the rock ramp structure but there is no evidence that it passed the rock structure as opposed to passing as a result of lockage

(https://sero.nmfs.noaa.gov/habitat_conservation/hcd_headlines/cape_fear_ld1_fishway.html

). Furthermore, the rock ramp has been successful in passing shad and herring but not striped bass so engineers, scientists, natural resource managers, and NOAA Fisheries are discussing future adaptive management strategies in an effort to facilitate passage of all species

(https://sero.nmfs.noaa.gov/habitat_conservation/hcd_headlines/cape_fear_ld1_fishway.html

<https://www.coastalreview.org/2017/01/river-advocates-work-to-add-fish-passages/>)

If the primary goal of the NSBL&D alteration is to allow passage of shortnose and Atlantic sturgeons beyond NSBL&D, then **no matter the design alternative chosen, USACE, NOAA-NMFAS, and GPA should take an adaptive management approach and ensure successful passage and spawning behavior of these fish. Sufficient funds should be allocated for monitoring fish migration patterns to either reach remaining shoals above NSBL&D or spawn at any remaining gravel bars that may exist after construction below the dam and sufficient contingency funds should be set aside to make appropriate alterations to the chosen alternative until successful spawning behavior has been proven with reliable, peer reviewed data at either remaining gravel bars or within the shoals.**

Impact of dam alterations on dissolved oxygen concentrations

The Savannah River is not meeting state standards for water quality due to low dissolved oxygen concentrations in the Savannah Harbor. As a result, a Category 5R alternative restoration plan was developed in order to bring the Savannah Harbor reach into compliance with the standard. In order to meet the restoration plan, all sources of biochemical oxygen demanding substances to the river below Thurmond Dam were identified, and a model was developed by GAEPD and SCDHEC with the intent to reduce sources of those substances so the dissolved oxygen standard could be met in the harbor. The foundation of the model was based upon "natural background conditions", meaning that natural biological, physical, and chemical processes that contributed to oxygen generation and oxygen consumption were accounted for in the model before all discharger contributions were considered. A significant source of dissolved oxygen generation within the Augusta reach of the Savannah River included aeration of the river water as it cascaded over the dam. The figure below shows 2 years of 15-minute interval dissolved oxygen data (over 60,000 15-minute observations). These data show that aeration over the dam resulted in an average dissolved oxygen saturation of 107% (at RM 185 site) with both 25% and 75% of the data above 100% saturation and a few excursions to a low of 90% saturation. This can be compared to the shoals reach of the Savannah River (RM202) which had a lower average saturation, a wider 25% and 75% range, and lower DO% excursions below 90%. The proposed rock arch ramp will be more similar to the RM202 dataset because this shallow water habitat will undergo photosynthesis and respiration due to the attached algae on the rocky substrate in addition to aeration. The second figure below shows continuous data from below the shoals in July 2012. The data show that aeration and photosynthesis increased dissolved oxygen saturation to 122% in the afternoon but aeration and respiration at night lowered saturation to nearly 70%. Any loss or gain of dissolved oxygen within the Savannah River system below Thurmond Dam will impact the 5R process and could jeopardize restoration of dissolved oxygen in the Savannah Harbor.

Since dissolved oxygen is so critical, there should be peer reviewed documentation from other rock ramp projects around the country that show dissolved oxygen dynamics will not be impacted by the chosen alternative. Furthermore, that documentation should be in the form of measured data from those projects and not modeled results since this impact is so critical to restoring the river and could impact the viability of each municipal and industrial discharger below Thurmond Dam.

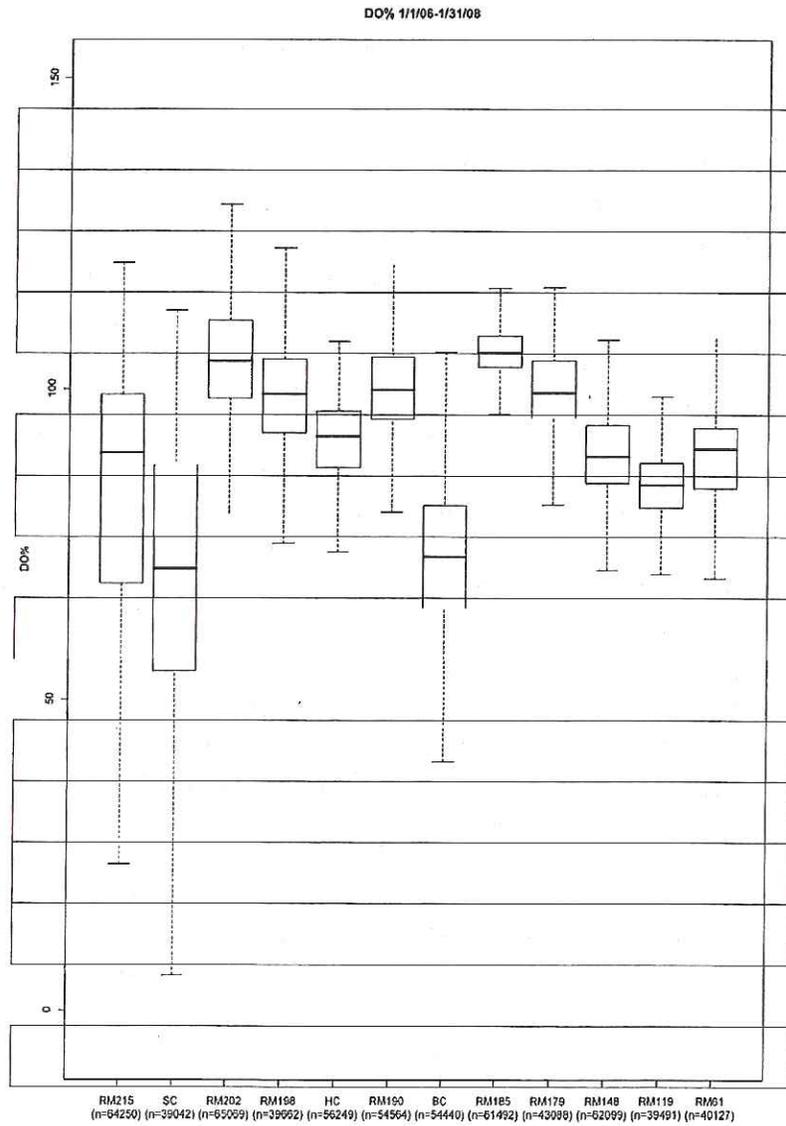
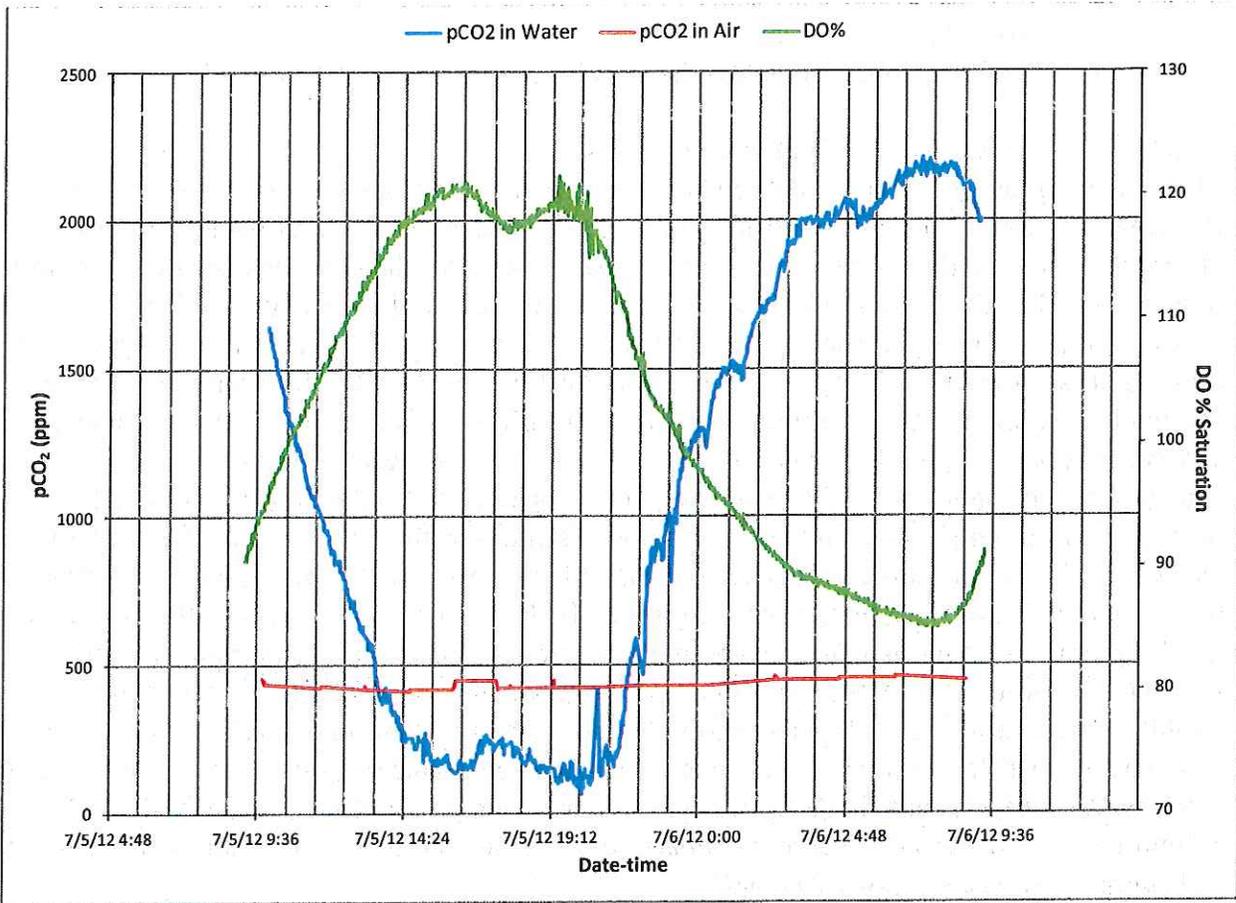


Figure 3-19. Dissolved oxygen percent saturation statistics from all river stations from January 2006 through January 2008.



Scour hole below NSBL&D

What is the fate of the scour hole below the dam for the preferred alternatives?

Effect of drawdown on groundwater elevations

After the drawdown, a crack developed in the soil behind a seawall on a property adjacent to the Savannah River. The failure was likely due to subsidence as a result of the lower pool elevation during the drawdown. Whether the seawall was installed properly or not is a matter of discussion, but the incident elucidated an important facet of the river system that could have a major effect as a result of a lower pool elevation. All surface waters in the Augusta and North Augusta areas flow to the Savannah River, groundwater contributes to that surface water flow. The pool elevation sets the piezometric head for all surface and regional surficial groundwater systems that drain to the river. Since groundwater and surface water flows to the river, changing pool elevation will have an impact on the regional surficial groundwater table by decreasing piezometric head and lower water levels in the watershed that drains to that pool elevation. This impact could have a positive effect in some areas of Augusta and North Augusta that have had historic flooding issues because the Lock and Dam artificially held the piezometric head higher than when the dam was not in place, but could have significant impacts in areas where groundwater drawdown weakens under portions of each city that are supporting significant infrastructure. This again, shows that the series of dams in the Savannah River are the "new normal" for the river and changes that effect widescale systems, such as the regional groundwater system, could have significant economic impacts if not appropriately studied and accounted for. How will this potential impact be addressed if the pool elevation is proposed to be lowered from current normal levels?

Justification of mitigation

I am interested in understanding how NOAA-NMFS justified mitigation of access to spawning habitat above NSBL&D in lieu of destruction of nursery/summer habitat in the estuary. I would like to understand the NOAA-NMFS justification and for them to provide the peer-reviewed statistical cost/benefit analyses to justify this conclusion as well as any peer-reviewed publications that support this justification. This justification should be weighed relative to some of the world's renowned experts on shortnose sturgeon (including a NMFS expert; Kynard et al., 2016) suggesting that even if river rapids exist (believed by many fisheries experts to be the favored spawning conditions for shortnose sturgeon), this does not mean that they will seek those areas if individual fish imprint at a different reach during the early life stages.

Toxicity and stabilization of newly exposed sediments

Pool drawdown showed the extent of new sediment that would be exposed as a result of pool elevation changes.



Those sediments will be exposed to new wave lapping and rainfall/runoff erosion processes. It is unclear whether those newly exposed sediments contain legacy pollutants and what the fate and transport of those pollutants may be. Below is a table of sediment chemistry data taken from samples in 2006-2008 from multiple locations along the Savannah River; RM 202, RM 198, and RM 190 are all within the Lock and Dam pool section. Newly exposed sediment will impact water quality in the form of turbidity and suspended sediments until the newly exposed

sediment is stabilized by vegetation. In addition, any legacy toxic components could be mobilized as a result of erosional forces, this could have a significant impact on drinking water supply for the Max Hicks drinking water plant (intake below Augusta Marina), on aquatic biota, recreational activities, and on sporting activities such as the Ironman triathlon. Is there a plan to determine legacy toxic chemical composition and potential fate and transport of those sediments? Is there a plan to facilitate sediment stabilization of newly exposed sediments with vegetation by seeding/or planting these newly exposed areas?

Average concentrations from sediment samples

	RM 215	SC	RM 202	RM 198	HC	RM 190	BC	RM 185	RM 179	RM 148	RM 119	RM 61	units
% Solids	74.7	69.3	62.5	76.1	75.3	76.8	37.1	77.1	75.0	77.6	77.2	80.3	%
2,4,5-T	ND	28	35	ND	ND	ND	568	ND	ND	ND	ND	ND	ug/kg
2,4,5-TP (Silvex)	ND	17	120	ND	25	ND	ND	ND	22	ND	ND	ND	ug/kg
2,4-D	ND	ND	ND	ND	ND	ND	850	ND	ND	ND	ND	ND	ug/kg
2,4-DB	22	ND	440	89	ND	ND	ND	33	43	ND	ND	ND	ug/kg
4,4'-DDD	ND	ND	ND	ND	ND	ND	18	ND	ND	ND	ND	ND	ug/kg
4,4'-DDE	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.5	ND	ND	ug/kg
4,4'-DDT	ND	ND	ND	ND	ND	ND	25.0	ND	ND	ND	ND	ND	ug/kg
Aldrin	1.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/kg
alpha-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/kg
alpha-Chlordane	ND	ND	1.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/kg
Aroclor 1016	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/kg
Aroclor 1221	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/kg
Aroclor 1232	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/kg
Aroclor 1242	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/kg
Aroclor 1248	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/kg
Aroclor 1254	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/kg
Aroclor 1260	ND	ND	ND	ND	ND	ND	270	ND	ND	ND	ND	ND	ug/kg
Arsenic	1.2	1.0	1.2	0.8	0.8	0.7	3.9	0.5	0.9	0.9	0.8	0.6	mg/kg
beta-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/kg
Cadmium	0.0	0.1	0.0	0.0	ND	0.0	1.1	0.0	ND	0.1	0.1	0.0	mg/kg
Calcium	422.5	390.0	1117.5	262.5	102.0	265.0	2225.0	210.0	302.5	198.0	255.0	220.0	mg/kg
Chromium	9.9	10.5	13.7	7.5	24.3	4.4	32.5	5.4	3.8	3.2	4.4	2.6	mg/kg
Copper	2.3	4.9	8.0	2.3	2.2	1.5	33.2	1.7	1.3	0.9	1.5	0.8	mg/kg
Dalapon	ND	ND	ND	ND	ND	ND	ND	450.0	ND	550.0	ND	ND	ug/kg
delta-BHC	ND	ND	7.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/kg
Dicamba	ND	ND	57.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/kg
Dichloroprop	ND	ND	132	170	ND	20	13000	ND	38	24	20	ND	ug/kg
Dieldrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/kg
Dinoseb	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/kg
Endosulfan I	ND	ND	2.2	ND	ND	ND	1.9	ND	ND	ND	ND	ND	ug/kg
Endosulfan II	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/kg
Endosulfan sulfate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/kg
Endrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/kg
Endrin aldehyde	ND	ND	ND	ND	ND	1.0	ND	ND	1.2	ND	ND	ND	ug/kg
Endrin ketone	ND	ND	ND	ND	ND	2.6	ND	ND	ND	ND	ND	ND	ug/kg
gamma-BHC (Lindane)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/kg
gamma-Chlordane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/kg
Heptachlor	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/kg
Heptachlor epoxide	1.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/kg
Iron	5400	7550	12500	4750	3025	3350	21375	3125	3225	2475	3650	2400	mg/kg
Lead	2.0	3.4	5.4	3.2	3.0	1.6	54.3	1.6	1.5	1.3	1.7	1.4	mg/kg
Magnesium	230.0	477.5	1377.5	425.0	130.0	108.7	1707.5	140.0	115.3	94.0	190.0	94.0	mg/kg
Manganese	1325.0	390.0	1555.0	735.0	73.8	465.0	1065.0	1375.0	1242.5	900.0	925.0	345.0	mg/kg
MCPA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/kg
MCPP	ND	ND	ND	4700.0	ND	ND	160000.0	ND	ND	ND	ND	ND	ug/kg
Mercury	ND	ND	ND	ND	ND	ND	0.5	ND	ND	ND	ND	ND	mg/kg
Methoxychlor	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/kg
Nickel	4.1	3.4	9.7	4.4	3.8	3.8	16.3	1.9	3.0	2.4	2.5	1.2	mg/kg
Potassium	170.0	327.5	1075.0	200.0	88.7	81.0	1177.5	105.3	88.5	73.0	123.5	50.0	mg/kg
Selenium	0.2	ND	0.4	0.3	ND	0.4	0.9	0.9	0.5	ND	ND	0.4	mg/kg
Sodium	50.0	93.0	133.0	89.5	95.0	84.0	623.3	82.7	76.7	88.0	30.5	61.0	mg/kg
TOC	145.0	1130.0	1400.0	1050.0	915.0	535.0	36145.0	450.0	8750.0	490.0	615.0	260.0	mg/kg
Toxaphene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/kg
Zinc	13.2	27.5	55.3	26.7	19.0	24.6	272.8	22.7	18.5	26.7	31.5	25.5	mg/kg

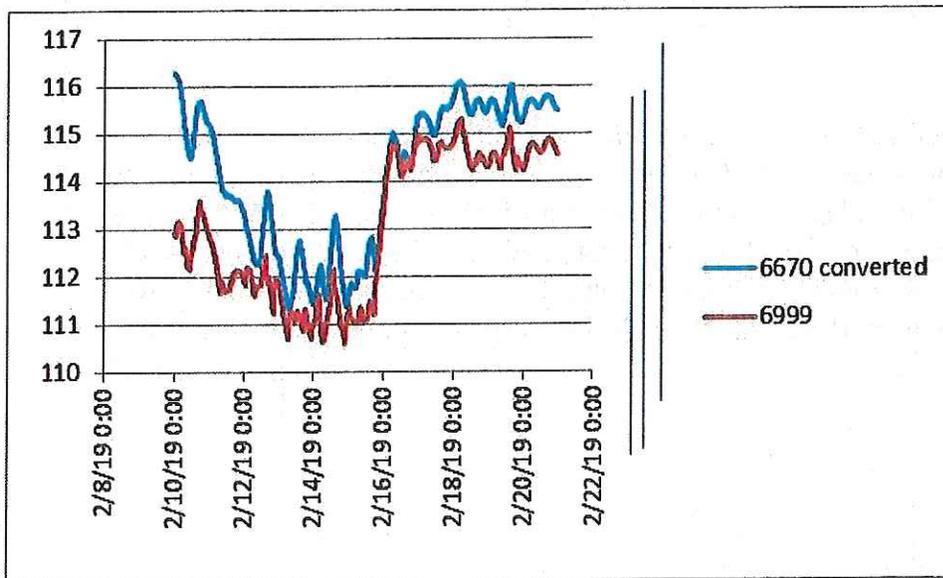
Dynamics of New Savannah Bluff Lock and Dam and pool elevations- unknown impact for all alternatives

The following is a brief analysis of dam and pool elevation dynamics in an effort to determine what may happen with conversion to a single fixed weir.

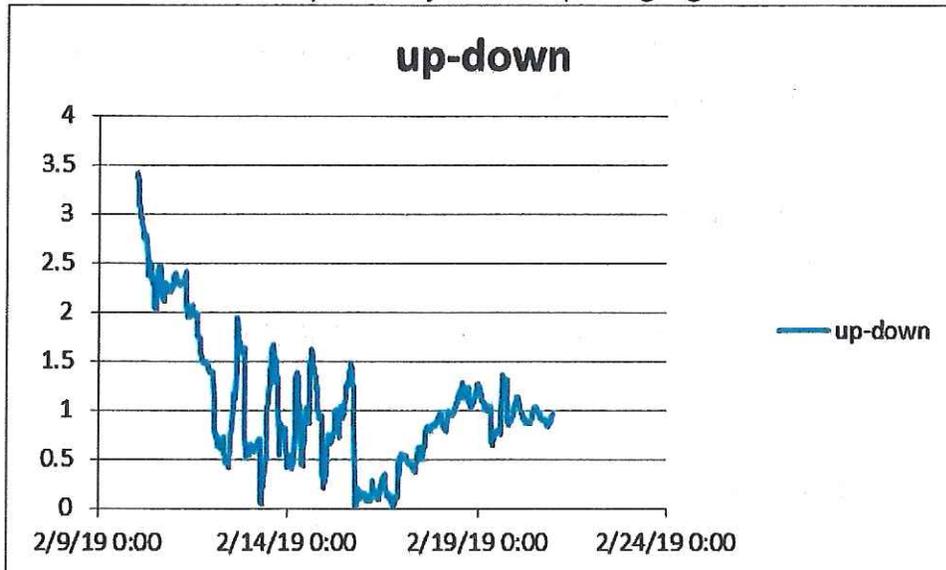
- Gauge 6670 is the Jefferson Memorial bridge
- Gauge 6999 is the upstream pool elevation at Lock and Dam
- Gauge 7000 is the downstream elevation below Lock and Dam

- The 6670 gauge data were converted to NGVD29 datum by the following:
- NAVD88 – NGD29 = -0.78 ft

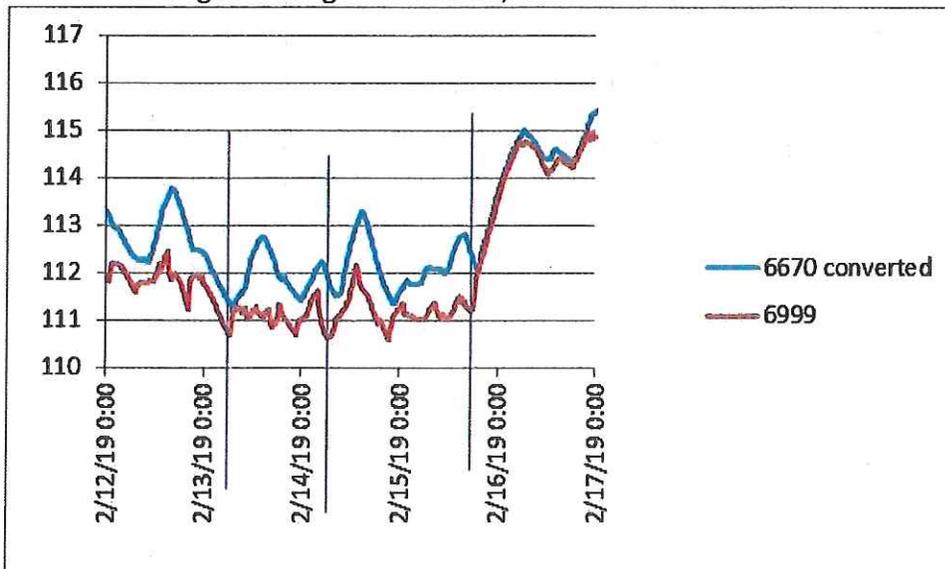
This is raw data w 6670 corrected for the drawdown



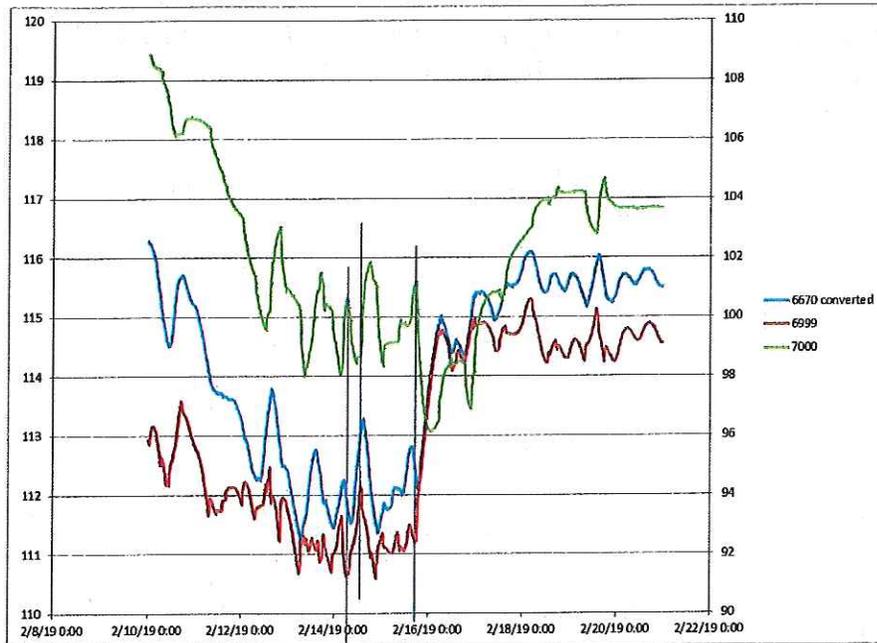
This is delta without any time adjustment: (6670 gauge subtracted from the 6999 gauge)



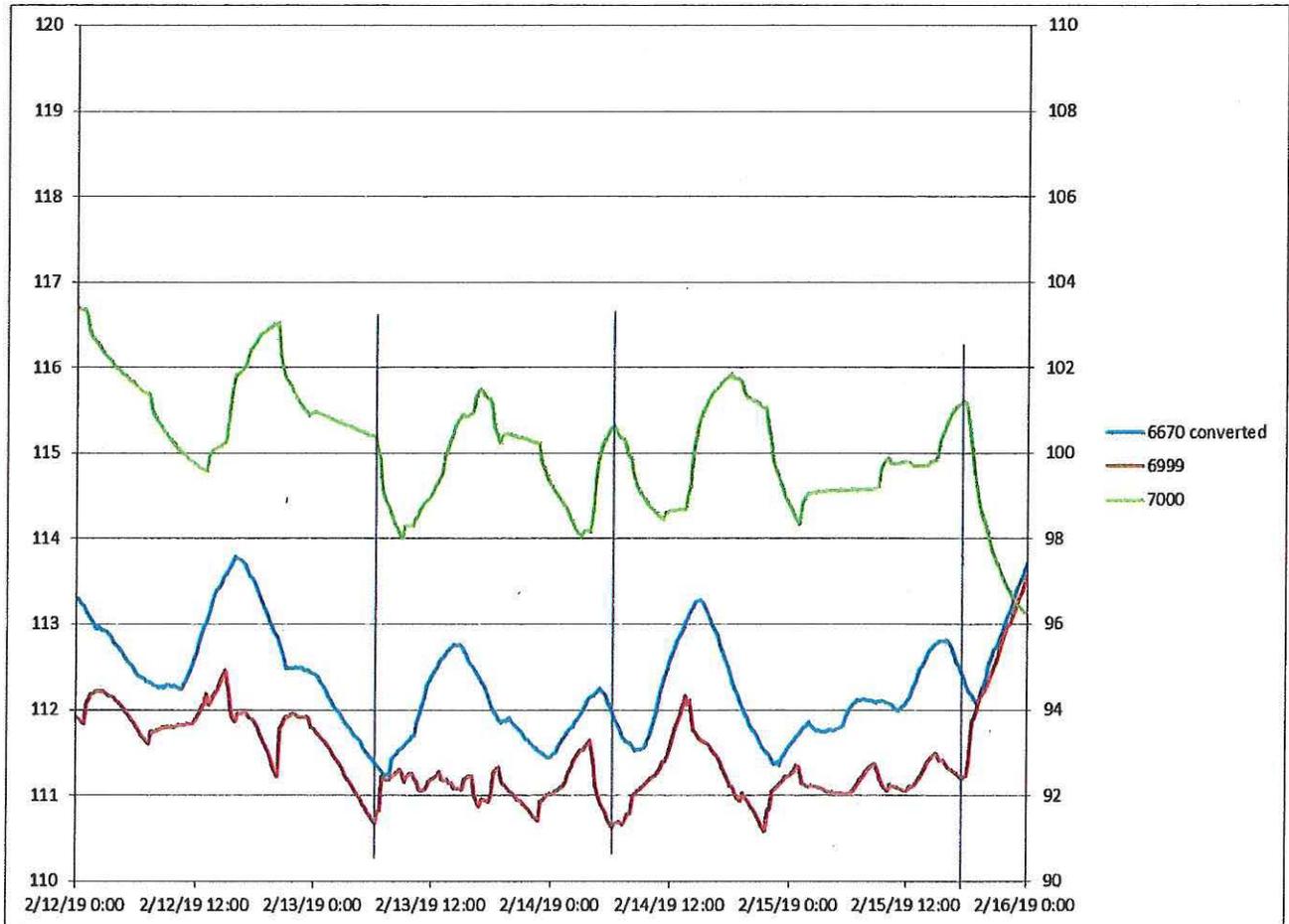
This is a zoomed in section of the data. This shows that there is a lag between the two gauges when a lock adjustment is made. On 2/15/19 around 15:30 the dam was adjusted to fill the pool again. There was a brief lag of about an hour before elevation of the 6670 gauge started increasing; the increases were seen at the same rate and the gauges showed no elevation difference (no delta). This brief lag between an elevation change at 6999 before 6670 is indicative of a gate change at the dam; the two other vertical bars show the same trend.



This shows the 7000 gauge height on the 2nd-y axis and the same event bars. This confirms that the gate adjustments cause water to stay in the pool because the 7000 gauge height decreases as water is stored in the pool and not discharged below the dam.

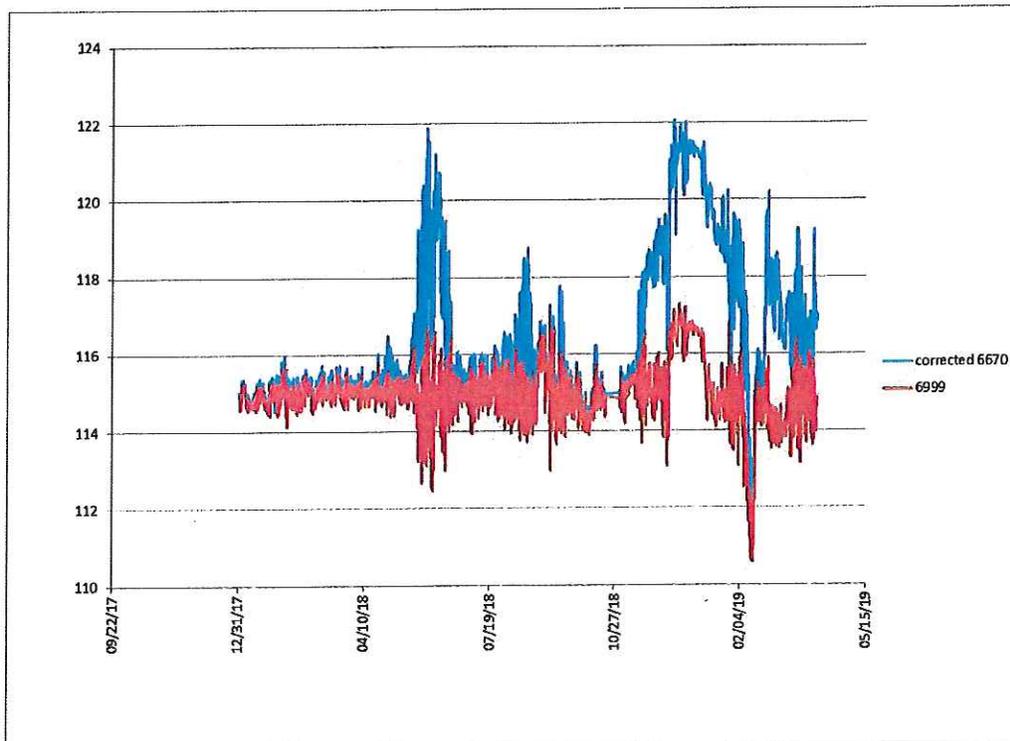


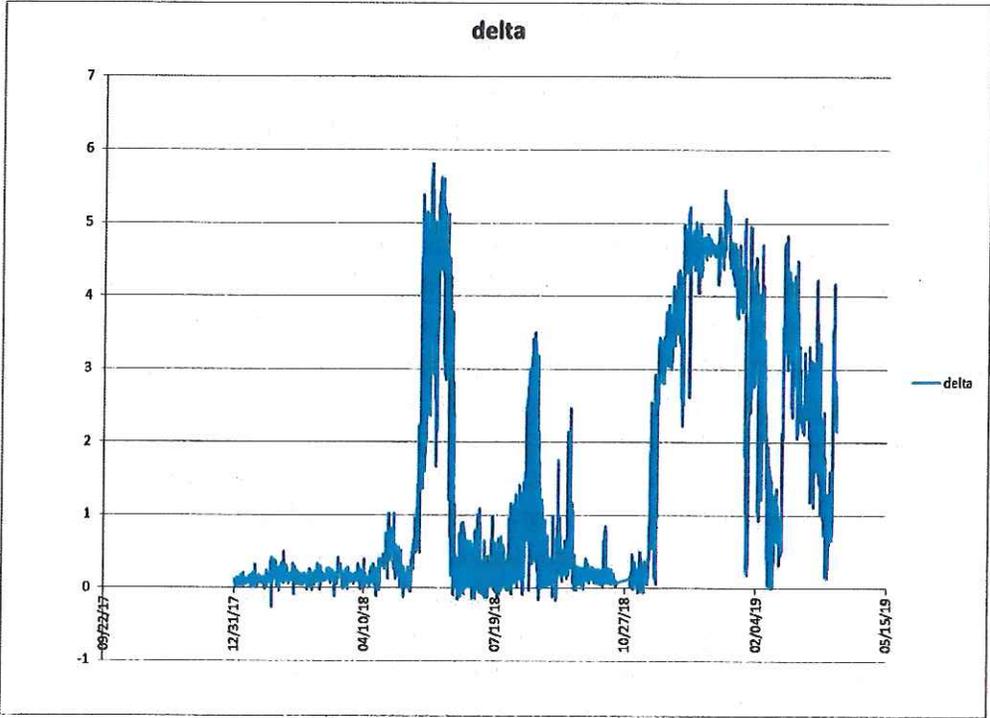
This shows a zoomed in version of the same graph as above and shows better the impact on water elevation at the 7000 gauge when the weir is adjusted. This also shows there are daily flood pulses that peak at the 6670 gauge around 1500-1630 each day. Most of the time the 6999 gauge is affected and the flood pulse is observed at all gauges but not always (see the 2/13/19 event). This pulse is either due to the morning Thurmond Dam release advectively transferred to the 6670 gauge or is an adjustment made by the Stevens Creek Dam and not an adjustment of the Lock and Dam.



So, the delta between the 6670 and 6999 gauges for the dataset between 2/10/19 and 2/20/19 ranges from 0 ft to nearly 3.5 ft with the lower elevation differences occurring when the dam is adjusted to fill the pool. An adjustment of lowering the pool elevation causes both 6670 and 6999 elevations to change nearly identically (rate of change) while 7000 increases as shown on 2/10/19 at 1630.

Taking into account a larger dataset, the difference between 6670 and 6999 can be significant as shown in the charts below, a range of -0.26 ft to 5.81 ft. These data show that during flooding periods the largest differences were a result of being able to pass the water through the dam in an effort to keep the pool elevation steady. It is therefore very difficult to determine what the overall impact will be since all gauge data have the impact of the adjustable weir, this includes any modeling efforts that have gone into making decisions about water elevations in the pool. Furthermore, it is necessary to provide alternatives for adaptive management of volume and timing adjustments for Thurmond Dam and Stevens Creek Dam reservoir release schedules once an alternative is chosen. That is, daily pulses shown in these data may have significantly more impact on pool elevation in the absence of the ability to adjust the low-head dam structure at Lock and Dam. It would be better to be able to run a real-world simulation where the overflow weirs at Lock and Dam are held constant while flows from upstream have natural variability. Not sure if this is possible with the current Lock and Dam configurations but this would help make more informed decisions about the correct alternative to choose and the overall impact of changes to Lock and Dam with a fixed weir scenario.





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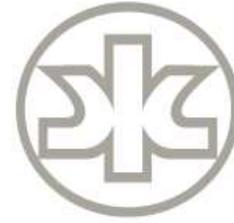
Grabowski, T. B., & Isely, J. J. (2006). Seasonal and diel movements and habitat use of robust redhorses in the lower Savannah River, Georgia and South Carolina. *Transactions of the American Fisheries Society*, 135(5), 1145-1155.

Kynard, B., Bolden, S., Kieffer, M., Collins, M., Brundage, H., Hilton, E. J., ... & Peterson, D. (2016). Life history and status of Shortnose Sturgeon (*Acipenser brevirostrum* LeSueur, 1818). *Journal of Applied Ichthyology*, 32, 208-248.

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USACE (United States Army Corps of Engineers) 2019. Savannah Harbor Expansion Project, Georgia and South Carolina: Fish Passage at new Savannah Bluff Lock and Dam; integrated post authorization analysis report and supplemental environmental assessment. February 2019.



April 9, 2019

US Army Corps of Engineers
Savannah District
100 W. Oglethorpe Avenue
Savannah, GA 31401
ATTN: Ms. Robin Armetta (PM-P)
Via e-mail: CESAS-PD@usace.army.mil

Re: Draft Integrated Post Authorization Analysis Report and Supplemental Environmental Assessment, Fish Passage at New Savannah Bluff Lock and Dam (NSBLD), and Draft Finding of No Significant Impact to evaluate proposed changes to the Fish Passage feature of the Savannah Harbor Expansion Project – Comments of Kimberly-Clark Beech Island Site

Dear Ms. Armetta:

This letter and attachments constitute Kimberly-Clark Corporation's comment on the Corps' Report and recommended project design Alternative 2-6d in relation to impacts on our Beech Island manufacturing facility.

Approximately 1,300 South Carolinians and 700 Georgians work at K-C's Beech Island Manufacturing Site to produce and distribute tissue products and diapers under brand names such as Kleenex®, Cottonelle®, Scott®, Huggies® and Pull-Ups®. Our economic impact on Aiken County and the CSRA is extensive, including K-C's average annual wage of over \$78,000 plus full benefits and over \$101 million spent with other South Carolina businesses in 2017. From an environmental stewardship standpoint, we recycle the majority of our process water, convert methane gas from 3 Rivers Landfill into energy and recycle or repurpose 90% of our manufacturing waste.

Our interest in a timely replacement or modification of the NSBLD stems from the fact that Beech Island cannot manufacture tissue and paper towels without the reliable water supply the dam has historically provided. Failure of the NSBLD would likely cause substantial, if not complete, loss of water supply which would shut down most if not all of our tissue and towel production. Loss of work for a large percentage of our workforce would follow and the loss of sales to customers such as Walmart, Target and Costco would begin to mount at nearly \$5 million per week conservatively. Relocating our intake facility into an undammed river would take time due to contractor availability and permitting requirements and the cost would well into the millions. We appreciate the Corp's commitment to design and execute a project in a timely manner as authorized in the Water Infrastructure Investment Act of 2017.

However, based on observed conditions in the NSBLD pool during the Corps' recent weir simulation, Kimberly-Clark now has concerns about the suitability of Alternative 2-6d to maintain the pool for water supply. For each day of the simulation, Kimberly-Clark engineering personnel collected data and made

observations at our raw water intake structure, river pump house and effluent discharge pipe. After a detailed review of data and observations, Kimberly-Clark has concluded the following:

1. **The USACE river level model for Alt. 2-6d overestimates the pool elevation at K-C's intake structure by 12"-16"**. The lowest elevation observed at K-C's intake during the simulation was 111'-4" (NGVD29) when flows ranged between 5,600-6,800 cfs on the mornings of 2/13/19–2/14/19. While the Corps' 2018 Mitigation Analysis for Impacted Water Users listed Alt. 2-6d a pool elevation at K-C's intake of 111'-4" (NGVD29), that was for the much lower flows of 3600 cfs. Photos of the intake during the simulation and a drawing are attached (#1-2).
2. **The water in the pool from the NSBLD to K-C Beech's intake appears to be relatively flat – rather than stacking to a higher elevation upstream of the dam as the USACE river level model projects.** Per USGS Water Station data collected during the Simulation, the elevation at K-C's water intake averaged a mere 0.20' higher than at the dam when flows were 5,600-5,900 cfs. Based on Corp's documents (HEC-RAS Results 2/26/19, Updated Engineering Appendix), the river model for Alt.2-6d indicated the elevation at K-C's water intake would be 1.3' higher than at the dam at flows of 5,000 cfs. So, during the Simulation the water stacked upstream between those two points was more than a foot lower than the model predicted. Thus, a 109' fixed weir does not appear to be a viable design for reliably impounding a pool with a minimum of 110'-2" elevation at 3,600 cfs.
3. **Kimberly-Clark therefore expects to see cavitation and pumping inefficiency at our raw water intake pumps at low river flow conditions under Alt. 2-6d.** Based on performance specs of our pumps and the design of our intake structure, Beech Island Site technical team believes that our river intake pumps will perform normally down to a pool elevation of 110'-2" (NGVD29). With simulation flows of 5,600-6800 cfs producing an elevation at our intake of as little as 111'-4", we expect lower flows of 3600 cfs will interfere with pumping operations. Mitigating this risk to our water intake system would require approximately \$350,000 for the purchase and installation of new pumps that function more efficiently with lower Net Positive Suction Head (NPSH). Such work would have to be coordinated to coincide with planned facility shutdowns.
4. **Additional impacts of Alt. 2-6d not addressed in the Corp's 2018 Mitigation Analysis for Impacted Water Users, to Kimberly-Clark's effluent discharge pipe, will also require action.** Lower river levels expected with Alt. 2-6d will require modifications to the facility effluent outfall pipe to ensure 100% compliance with Kimberly-Clark's SCDHEC discharge permit. It is anticipated that the pipe and diffuser will need to be extended 30' to 40' further into the river and lowered by an estimated 5 feet to achieve similar submergence and dispersion. While exact modifications will be determined by the river bottom topography and requirements of SCDHEC and USACE, preliminary cost estimates range from \$500,000 to \$900,000. This work must be coordinated to coincide with planned facility shutdowns. Photos of the outfall during the simulation are attached (#3).

Therefore, Kimberly-Clark Beech Island Site urges the USACE staff to focus on a design alternative to Alt. 2-6d that can reliably impound a pool with a minimum of 110'-2" (NGVD29) elevation at 3,600 cfs and comply with the WIIN Act and Savannah Harbor Expansion Project timeline. We also expect that such a project will be funded by the USACE and its current non-federal partners and constructed and operated by the USACE.

Thank you for your consideration of this request and the stake that Kimberly-Clark and our Beech Island employees have in this vital water supply project. If you require further information from us, please contact us anytime.

Sincerely,

A handwritten signature in black ink, appearing to read "Simon Woods".

Simon Woods

CC: Honorable Lindsey Graham, Senator
Honorable Tim Scott, Senator
Honorable Johnny Isakson, Senator
Honorable David Perdue, Senator
Honorable Joe Wilson, Congressman
Honorable Rick Allen, Congressman
Honorable Henry McMaster, Governor
Honorable Brian Kemp, Governor



- [LEFT] KC Intake Structure at a river level of 111.5' (NGVD29), or 3' lower than normal river level. A drop of 16" further is where problems begin for KC intake pumps (110'-2").



- [RIGHT] Top view of debris collected on intake structure bar rack. The lower the water surface, the more likely it is for floating debris to be drawn into KC intake structure tunnel.



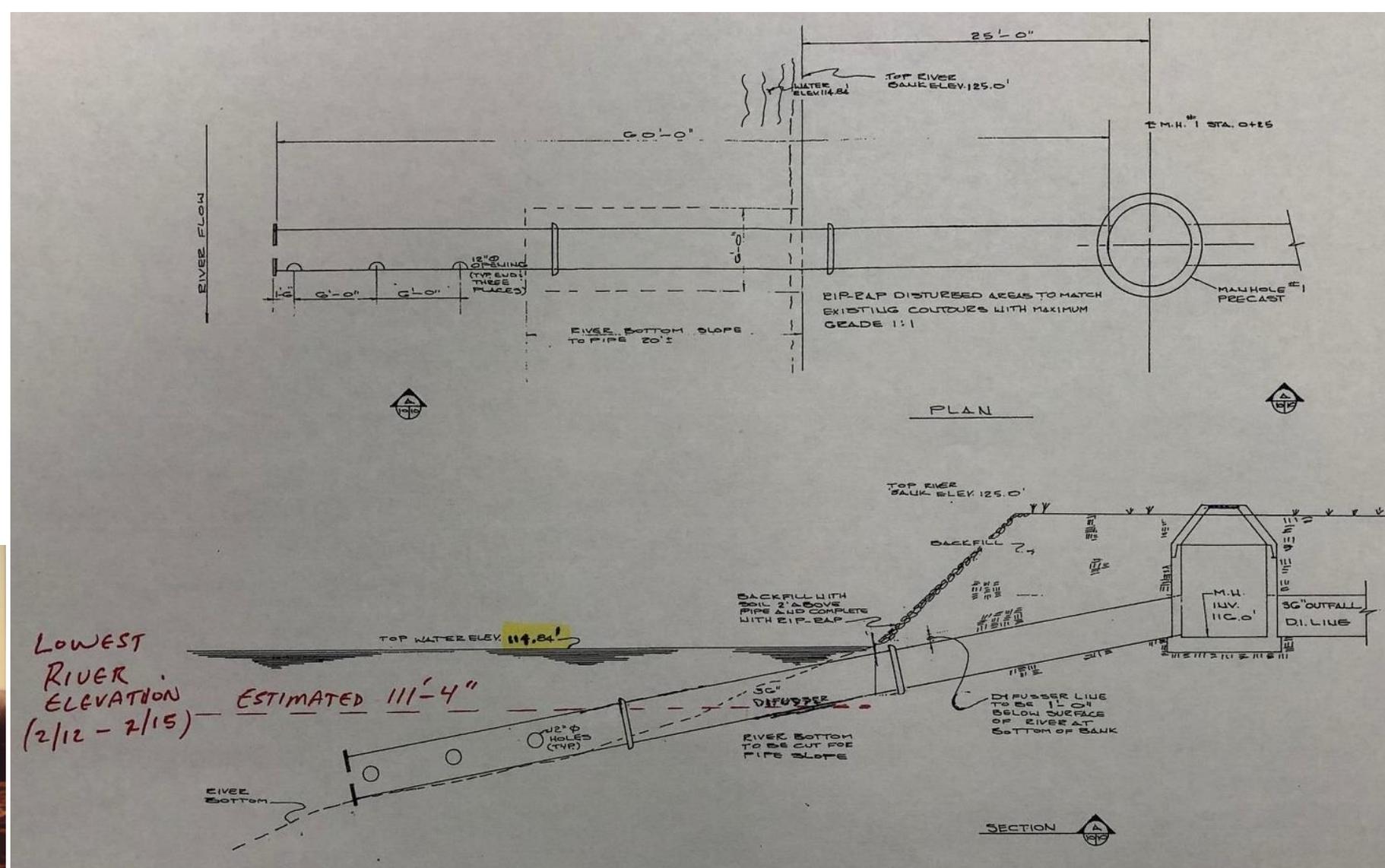
- KC Outfall / Discharge Pipe on 2/14/19. River level at this location was estimated at 111'-4" (NGVD29).



- KC Outfall / Discharge Pipe on 2/12/19.

- Design drawing of effluent discharge pipe sloping into Savannah River. Note the river level of 114.84' shown in elevation view (design assumption for submergence, dispersion).

- Picture of diffuser section during installation. The upper portion of the "ball & socket" connection in the center of the picture was exposed during simulation (see images on previous slide)



Colonel Daniel H. Hibner, PMP
Commander and District Engineer
U.S. Army Corps of Engineers, Savannah District
100 W Oglethorpe Avenue
Savannah, Georgia 31401-3604

April 11, 2019

Re: Savannah Harbor Expansion Project Fish passage at New Savannah Bluff and Dam,
Richmond County, Georgia and Aiken County, South Carolina

Dear Colonel Hibner:

I am opposed to the proposed Savannah Harbor Expansion Project Fish passage at New Savannah Bluff and Lock and Dam, (NSBLD) Richmond County, Georgia and Aiken County, South Carolina, for the reason that there is a meager amount of biologic data available for public analysis and comment, for the Carolinian shortnose and Atlantic sturgeon, as found within the Savannah River.⁽¹⁾

At best, the data that have been presented consist of expert opinion, arguments by analogy from other ecosystems, but not scientific fact. Hence, it is my opinion that replacing the dam with a rock weir fish passage *may* or *may not* help to restore the Savannah River shortnose and Atlantic sturgeon fish populations. In the absence of real scientific data, it is my opinion that should the proposed project go forward, the Corps of Engineers could be found derelict in their duties as outlined by the Endangered Species Act.

Two main points of contention with the proposed plan are as follows.

1. It is claimed that by installing a new rock weir fish passage at or near the site of NSBLD, the population of Shortnose and Atlantic Sturgeon will have access to their historic spawning grounds.⁽²⁾ The Corps has not provided any historic/ biologic data to support this belief but appear to be relying on analogies to data from other river ecosystems.
2. No new data have been presented that identify possible spawning grounds within the Savannah River beyond those possible areas previously identified by Hall *et. al.*⁽³⁾
 - a. Specifically, they described two possible spawning areas within the Savannah River: rkm 179-190 and rkm 275-278. Assuming the abbreviation rkm means "river kilometer", these two areas are located between miles, 111.2-118.0 and 170.8-172.7, respectively, on the Savannah River.⁽³⁾
 - b. For reference purposes, the NSBLD is located at mile 187.4.
 - c. Given the proximity of the dam to the spawning grounds, it is most likely that removal of the dam and the attendant construction of the proposed rock weir will have an impact on at least these two probable spawning areas.
 - d. The Corps is also aware that construction of the rock weir will also have a short-term impact on juvenile sturgeon, as well.⁽⁷⁾

3. From an engineering perspective, the planned creation of a rock weir is, understandably, a complex project and the Corps should be commended for their efforts in designing a structure that *may possibly* enable sturgeon to reach waters above the current NSBLD. However, two arguments against the proposed rock weir need to be presented: specifically, the behavior of American Shad at a rock weir located the Cape Fear River in North Carolina, and the relative success of a “fish lift” located in the Holyoke River in Connecticut.^{(4),(5)}
 - a. From the information thus far provided, the proposed rock weir appears similar to a rock weir structure created at the Lock and Dam #1 site, (LD-1) in the Cape Fear River located in North Carolina. In a presentation describing the results of the LD-1, Raabe, studied 3 types of fish found in that river: American Shad, Striped Bass and Flathead Catfish.⁽⁴⁾
 - b. Using the American Shad as a surrogate for the shortnose sturgeon, examination of Raabe’s shad data suggest the proposed Savannah River rock weir *will also be a barrier* for the shortnose sturgeon in reaching the fresh water areas above the current NSBLD.
 - i. In the slide titled, “Discussion: Rock Arch Rapids,” the authors state, “... [for the] American shad: passage comparable or higher than locking. ...”, but they further state: “...[The] Rate of passage for these fish was of concern (energy, predation, harvest)” In other words, for the shad, the rock weir did not significantly improve the shad’s ability to reach fresh waters above the weir. This conclusion is borne out by their data.
 - ii. Re-examination of the data provided in this publication reveals the following:
 - (1) In Raabe’s slide titled, “American Shad: LD-1 Passage,” a bar chart is presented for a 80-day period ranging from 3/5 to 5/21.
 - (2) Beginning on March 5, 2013 and ending approximately April 24, 2013, the bar chart shows a total of 508 shad counted.
 - (3) In the slide, these shad were then divided into two groups: those available for passage through the rock weir and those who had passed through the rock weir.
 - (4) Overall for the 80 day period, a total of 508 shad were counted as available for passage, yet only 16, or 3.2%, passed through the weir into fresh water.
 - iii. Comparing the bar chart data with a previous slide, titled “LD-1 Passage”, the authors claim that in 2013 approximately 50% of the American Shad passed through the rock weir. This is not supported by the bar chart data.
 - (1) According to the bar chart, there were 10 days in which shad progressed through the rock weir. Only 16 shad were classified as having passed through the weir.
 - (2) According to the bar chart, for these 10 days, total of 111 Shad were available for passage, thus the proportion of shad that passed through the weir was 14.4%, not 50% as claimed in the slide labeled, “LD-1 Passage.”

- (3) In a similar manner, the preliminary data provided for 2014: 16 passed/24, yielding a 67% rate of passage, also may be suspect.⁽⁴⁾
- a. By contrast to the data from the Cape Fear River, the “fish lift” system found at the Holyoke River dam in Connecticut has been significantly more successful for migrating shad to fresh water. A five summary of their Appendix E data is presented in Table 1; although the Holyoke dam data start from 1955, this five year summary is for illustrative purposes.⁽⁶⁾

Table 1. Data from Appendix E, Connecticut River American Shad Management Plan.⁽⁶⁾

Year	2016	2015	2014	2013	2012
No. of Fish Passed	385,930	412,656	370,506	392,967	490,431

- i. The data illustrate, significant greater numbers of shad were lifted into fresh water, relative to the single digit data provided by Raabe.
 - ii. It is also understood that, the shad found within the Connecticut River may be a separate metapopulation than the shad found in the Cape Fear population.
 - iii. It is understood that the Holyoke River fish lift system is part of a program run by a hydroelectric power company, but given the success of moving migrating fish into fresh water at the Holyoke River Dam, why wasn't a similar approach presented as an alternative for replacing the NSBLD?
 - iv. As stated in a recent opinion provided to the Corps, Section 7.3, *Recovery*, “... The NSBLD fish passage will restore access to approximately 20 mi of historically important, high quality spawning access for shortnose sturgeon. Though completion of the fish passage will be delayed by 8 months, we believe this is not likely to appreciably reduce the likelihood that the SA DPS will recover in the wild. While delay in implementation will result in temporary adverse effects to juvenile Atlantic sturgeon, *we believe that the current mandate under the WIIN Act to consider all alternatives* (emphasis mine) for providing passage above NSBLD to sturgeon, *including alternatives previously not considered*, (emphasis mine), will ensure the best opportunity for successful sturgeon passage in the Savannah River. ...”⁽⁷⁾
 - v. It is surprising that with the relative success of the Holyoke River fish lift, why wasn't a possible partnership with a Georgia State department, similar to that in South Carolina at the St. Stephens Dam pursued?⁽⁸⁾
4. In addition to the main points of concern, described earlier, there are two additional issues that require further review. These are: maintaining the Savannah River water height and river flow rates during spawning season, *especially* during drought periods.
- a. Hall *et. al.* provided the following information about these two aspects: “... Maximum depths in the river bends of the two areas ranged from 6-9 m, and current velocities ranged from 52-104 cm/sec at the surface. Bottom velocities taken during spawning season average 82 cm/sec. ...”⁽³⁾

- b. Hall *et. al.* further elaborate in the discussion section that: "... These higher current velocities (average 82 cm/sec near the bottom) appear to be important in spawning selection. Buckley and Kynard (1985) reported mean water velocities on the Connecticut River of 36 to 120 cm/sec during spawning periods. Dadswell (1976) reported shortnose sturgeon in the Saint John River spawned in the main river channel adjacent to deep turbulent sections of the river. ..."⁽³⁾

Evolutionary-wise, the shortnose sturgeon are ancient fish, dating back to perhaps the dinosaur age. Thus far, they have managed to survive man-made changes in their ecology but we do not know how they have adapted. More data about their habitats and life cycles are needed, especially around the NSBLD, in order to make an informed decision.

I am grateful for the opportunity to share with you my reservations concerning the proposed rock weir at the NSBLD.

Very Truly Yours,



Anthony J. Ewell, Ph.D.

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- (1) ["Shortnose Sturgeon." NOAA Fisheries, National Oceanic and Atmospheric Administration, https://www.fisheries.noaa.gov/species/shortnose-sturgeon](https://www.fisheries.noaa.gov/species/shortnose-sturgeon)
- (2) [Pendered, David. "Planned removal of 1937 lock, dam to help fish spawn in Savannah River draws criticism." SaportaReport, February 17, 2019, https://saportareport.com/planned-removal-of-1937-lock-dam-to-help-fish-spawn-in-savannah-river-draws-criticism/](https://saportareport.com/planned-removal-of-1937-lock-dam-to-help-fish-spawn-in-savannah-river-draws-criticism/)
- (3) [Hall, J.W., Smith, T.I.J, and Lamprecht, Scott, D. "Movements and Habitats of Shortnose Sturgeon *Acipenser brevirostrum* in the Savannah River." *Copeia* 1991\(3\): 695-702.](#)
- (4) [Raabe, J., "Evaluation of Fish Passage Following Installation of a Rock Arch Rapids at Lock and Dam #1, Cape Fear River, North Carolina" \(2014\). International Conference on Engineering and Ecohydrology for Fish Passage. 69. https://scholarworks.umass.edu/fishpassage_conference/2014/June9/69](https://scholarworks.umass.edu/fishpassage_conference/2014/June9/69)
- (5) ["Diadromous Fish Passage: A Primer on Technology, Planning, and Design for the Atlantic and Gulf Coasts." U.S. Department of Commerce | National Oceanic and Atmospheric Administration | National Marine Fisheries Service, https://www.greateratlantic.fisheries.noaa.gov/stories/2015/october/fishpassageprimer.pdf](http://www.greateratlantic.fisheries.noaa.gov/stories/2015/october/fishpassageprimer.pdf)
- (6) ["Connecticut River American Shad Management Plan." Connecticut River Atlantic Salmon Commission 103 East Plumtree Road Sunderland, Massachusetts 01375 Approved June 9, 2017, https://www.fws.gov/r5crc/pdf/CRASC_Shad_Plan_6_13_17_FINAL.pdf](https://www.fws.gov/r5crc/pdf/CRASC_Shad_Plan_6_13_17_FINAL.pdf)
- (7) [Berhart, D., for Crabtree, Roy, E. "Ref.: SER-2017-18749, amendment to the Biological Opinion for the Savannah Harbor Expansion Project." Letter, United States Department Of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service, https://www.sas.usace.army.mil/Portals/61/siteimages/SavannahHarbor/SHEPprevamp/2nd%20amendment%20to%20NMFS%20Biological%20Opinion%20SHEP%2010-13-17.pdf](https://www.sas.usace.army.mil/Portals/61/siteimages/SavannahHarbor/SHEPprevamp/2nd%20amendment%20to%20NMFS%20Biological%20Opinion%20SHEP%2010-13-17.pdf)
- (8) [St. Stephen Fish Lift. Sc's Only Fish Lift Offers Underwater View" Life's better Outdoors. South Carolina Department of Natural Resources, http://dnr.sc.gov/fish/fishlift/fishlift.html](http://dnr.sc.gov/fish/fishlift/fishlift.html)

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April 9, 2019

Colonel Daniel Hibner
U.S. Army Corps of Engineers
Savannah District
100 West Oglethorpe Avenue
Savannah, Georgia 31401

Dear Colonel Griffin:

On behalf of the Savannah River Maritime Commission (Commission), enclosed please find a copy of an opinion of the South Carolina Attorney General regarding the U.S. Army Corps of Engineers' proposed project for the New Savannah Bluff Lock and Dam (NSBLD). Per the Attorney General's opinion, the South Carolina Department of Health and Environmental Control has permitting authority and jurisdiction over the proposed project.

Please coordinate with DHEC for the review and processing of the required authorizations from the State of South Carolina for the proposed NSBLD project.

Thank you.

Very truly yours,

WILLOUGHBY & HOEFER, P.A.



Randolph R. Lowell

cc: The Honorable W. Dean Moss, Jr.
The Honorable Alan Wilson
Marshall Taylor, Esquire (DHEC)



ALAN WILSON
ATTORNEY GENERAL

April 8, 2019

Mr. W. Dean Moss, Jr., Chairman
Savannah River Maritime Commission
P.O. Box 7396
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Dear Chairman Moss:

You seek our opinion regarding the new Savannah Bluff Lock and Dam ("NSBLD"). Specifically you provide the following background information as stated in your letter:

I request the opinion of your office regarding the respective jurisdictions of the Savannah River Maritime Commission (SRMC) and the South Carolina Department of Health and Environmental Control (DHEC) for a project proposed by the U.S. Army Corps of Engineers (Corps) at the New Savannah Bluff Lock and Dam (NSBLD). Specifically, based on certain amendments to federal law, I am requesting an opinion as to whether the SRMC's jurisdiction extends to the portion of the Savannah River that includes the NSBLD, which is located approximately 13 miles below Augusta, Georgia and approximately 170 miles above the Savannah River Harbor, and how that jurisdiction, if applicable, intersects with the jurisdiction of DHEC over the proposed NSBLD project. The Corps has proposed substantial modifications and alterations to the NSBLD, which raises questions regarding the permitting and authorization of these modifications and alterations by the State of South Carolina. This, in turn, presents questions regarding review and decisions on the appropriate licenses, permits, certifications, or authorizations for the proposed modifications and alterations of the NSBLD. In sum, I am respectfully requesting an opinion of your office with respect to the following two questions:

1. What is the scope of the State's regulatory authority applicable to the Corps' proposed modifications and alterations of the NSBLD?

2. Assuming the State's regulatory authority is triggered, what are the respective delineations of the exercise of that jurisdiction between the SRMC and DHEC with respect to the Corps' proposed modifications and alterations of the NSBLD?

Background

The NSBLD was constructed on the Savannah River approximately 13 miles below Augusta, Georgia in 1937 as part of the ongoing federal Savannah River below Augusta, Georgia Project (the Project). The Project begins at mile 21.31 of the Savannah River, which is the end of the Savannah Harbor, and continues to mile 202.6 near Augusta. The original purpose of the Project was to assist in commercial navigation of the Savannah River from Savannah Harbor to Augusta via steamship and commercial barge. The Project authorizes maintenance of a channel through the Savannah River that is nine feet deep and 90 feet wide.

The nine-foot authorized depth of the Project would support only the operation of commercial freight barges, but not ocean-going container ships. Modern barges used on inland waterways typically have a minimum draft of nine feet. In contrast, the typical draft for a Panamax ship carrying between 3,001 and 5,100 TEU . . .—a smaller modern oceangoing container ship—is 39.5 feet. These ships also have a beam, or width, of approximately 106 feet. Even the smaller seagoing container vessels that carry around 300 TEU and are used as feeder ships . . . have a minimum draft of approximately 20 feet. These smaller feeder ships also typically have a beam of approximately 75 feet.

In implementation, however, it appears that the Project did not live up to its intended commercial navigational purpose even for barges. In 1970, the Industrial Development Division Staff of the Georgia Institute of Technology generated a report noting that, with respect to the area governed by the Project, the "navigation channel has many sharp curves and, most of the time, depth is unsatisfactory, with the result that barges have to limit their draft to 6 ½ feet." Robert E. Van Geuns, "The Development of Barge Traffic on Georgia's Inland Waterways, 1958'1968, and Some Development Potentials" at 8, Eng'g Experiment Station, Georgia Institute of Technology (Aug. 1970).

Only a few years after this report, around 1978, commercial traffic ceased on the Savannah River around Augusta and the Corps of Engineers has not maintained the Project or the nine-foot channel since 1978. In fact, in 2016, a syngas converter was delivered to the ramp at the NSBLD—not using the lock itself—by commercial barge, marking the first time that freight had been delivered by barge to Augusta since the late 1970s. Mary Carr Mayle, "Barge Delivers First Cargo up Savannah River in 40 Years" www.savannahnow.com (June 11, 2016). Significantly, the Corps of Engineers notes on its website that "Commercial navigation through the lock ceased in 1979" and that "the lock is no longer operated for fish passage or recreational boating."

Thus, the NSBLD has fallen into disrepair over the years due to lack of funding and use. Over the years, various tentative and ultimately unfulfilled steps have been taken with respect to the NSBLD. The Water Resources Development Act of 2000 approved rehabilitation of the NSBLD and the subsequent transfer of the facility to the City of North Augusta/Aiken County, South Carolina. The 2001 Consolidated Appropriations Act added a fish passage to the rehabilitation project, but removed the estimated cost of the rehabilitation from the available appropriations. Consequently, no substantive steps were taken by the Corps to rehabilitate the NSBLD.

As part of the development approval of the Savannah Harbor Expansion Project (SHEP), it was agreed by the Corps and the Georgia Ports Authority that a fish passage would be constructed at the NSBLD. Since its construction in 1937, the NSBLD has prevented fish from migrating to the Augusta Shoals located on the Savannah River near the 1-20 overpass, which serve as spawning grounds for sturgeon, American shad, striped bass, and other fish species. Construction of the fish passage allowing access to the Augusta Shoals would serve to mitigate the consequences to the sturgeon and other fish resulting from the SHEP.

However, before any action was taken to construct the fish passage at the NSBLD, Congress deauthorized the NSBLD as a federal project in the Water Infrastructure Improvements for the Nation Act (2016 WIIN Act), Title I, Water Resources Development Act of 2016, Section 1319. More significantly for purposes of the present analysis, and as recognized by the Corps, Congress also "required modifications to the fish passage as previously authorized as part of SHEP." Savannah Harbor Expansion Project, Georgia and South Carolina' Fish Passage at New Savannah Bluff Lock and Dam, Integrated Post Authorization Analysis Report and Supplemental Environmental Assessment, Executive Summary, i-ii, U.S. Army Corps of Engineers, Savannah District (Feb. 2019) (Draft FONSI).

Specifically, the 2016 legislation gives the Corps the following options with respect to the NSBLD:

(c) PROJECT MODIFICATIONS.—

(I) IN GENERAL.—Notwithstanding any other provision of law, the Project is modified to include, as the Secretary determines to be necessary—

(A)(i) repair of the lock wall of the New Savannah Bluff Lock and Dam and modification of the structure such that the structure is able—

(I) to maintain the pool for navigation, water supply, and recreational activities, as in existence on the date of enactment of this Act; and

(II) to allow safe passage over the structure to historic spawning grounds of shortnose sturgeon, Atlantic sturgeon, and other migratory fish; or

(ii)(I) construction at an appropriate location across the Savannah River of a structure that is able to maintain the pool for water supply and recreational activities, as in existence on the date of enactment of this Act; and

(II) removal of the New Savannah Bluff Lock and Dam on completion of construction of the structure; and

(B) conveyance by the Secretary to Augusta-Richmond County, Georgia, of the park and recreation area adjacent to the New Savannah Bluff Lock and Dam, without consideration.

2016 WIIN Act, Title I, WRDA of 2016, § 1319(c). The 2016 WIIN Act also repeals the requirement of a transfer to North Augusta and Aiken County and, instead, requires conveyance of the modified structure to Augusta-Richmond County, Georgia.

The Corps undertook, as it was required to do, an environmental assessment of the modifications to the NSBLD required by the 2016 WIIN Act. In its Draft FONSI, the Corps proposes a version of the second alternative identified in the legislation, namely construction of "an in-channel fish passage design with a 108.2 (NAVD88, 109.0 NGVD29) foot elevation fixed crest weir with a flood bench." Draft FONSI, ii. The Corps describes the proposed project as follows:

The proposed action consists of a fixed crest weir with a rock ramp sloping upstream from the existing dam location The fish passage structure would be constructed with boulders and stone sized following the same design that was previously-approved for the bypass. The structure would have a 2 percent slope upstream to the weir crest, and a 10 percent slope downstream from the crest to the river bed. The lock and dam would be removed, including the foundation, down to elevation 91.22 feet NAVD88. The weir would have an average crest elevation of 108.2 feet NAVD88 (109.0 NGVD29). A floodplain bench (Figure 2) approximately 275 feet in width would be excavated to elevation 110 feet NAVD88 on the Georgia side of the existing dam location. The bench would ease the passage of flood waters past that point in the river. The bench would be grassed or rock lined to prevent erosion. The floodplain bench would be partially inundated for the 1-yr return interval flow of 16,500 cfs. A new boat ramp will be built just upstream of the existing boat ramp and will require acquisition of 10 acres of commercial forested land.

Public Notice, Savannah District, U.S. Army Corps of Engineers (Feb. 14, 2019) (Public Notice), p.2. The Public Notice also contains a visual rendering of the proposed project:

[Figure 1]

Public Notice, p.3. In other words, the existing lock and dam are being removed, making the Corps' proposed action a substantial alteration of the existing NSBLD.

Despite what objectively appear to be significant and substantial changes and modifications to a structure in navigable waters of the United States and the State of South Carolina, the Corps has proposed to issue an Environmental Assessment determining "that the recommended plan does not constitute a major federal action that would significantly affect the human environment; therefore, preparation of an Environmental Impact Statement is not required." Draft FONSI, iii. No final EA has yet been issued.

Request for an Opinion

My concern with respect to the Corps' proposed action arises because, regardless of the Corps' minimalization of the substantial actions it proposes to undertake, it is likely that the Corps will be required to obtain certain state water and environmental permits from the State of South Carolina because of these changes to the NSBLD. That is, the Corps proposes to remove the lock and dam from the NSBLD and, thus, to substantially alter the existing structure and also construct a new structure within

the Savannah River. These substantial undertakings would appear to implicate the requirement that the Corps obtain from the State a Section 401 Water Quality Certification (401 Certification) and a Construction in Navigable Waters Permit (Navigable Waters Permit). See Clean Water Act, § 401, 33 U.S.C.A. § 1341(a); S.C. Code Ann. Regs. 19-450.1(A); S.C. Code Ann. Regs. 61-101.A.2. But the implication of these permitting requirements in turn raises questions regarding the appropriate state agency to issue the required water and environmental licenses, permits, authorizations, and certifications: the SRMC and/or DHEC. See generally Savannah Riverkeeper v. S.C. Dep't of Health & Env'tl. Control, 400 S.C. 196, 733 S.E.2d 903 (2012) (discussing delineation of authority of SRMC versus DHEC with respect to the Savannah Harbor).

As the chair of one of the agencies of South Carolina charged with oversight of the Savannah River, I want to ensure that the SRMC appropriately exercises its regulatory authority and jurisdiction. But the question thus arises whether jurisdiction over consideration of these permits is committed to the SRMC or DHEC, or both. I am aware that the SRMC has certain jurisdiction over matters pertaining to the Savannah River. Specifically, the SRMC's jurisdiction is statutorily defined as follows:

[A] commission to be known as the Savannah River Maritime Commission is hereby established to represent this State in all matters pertaining to the navigability, depth, dredging, wastewater and sludge disposal, and related collateral issues in regard to the use of the Savannah River as a waterway for ocean-going container or commerce vessels.

S.C. Code Ann. § 54-6-10. In applying this statute, the South Carolina Supreme Court has held that plain language of § 54-6-10 [gives] the Savannah River Maritime Commission the responsibility and exclusive authority to represent South Carolina in all matters pertaining or collaterally related to dredging in the Savannah River for purposes of navigation by ocean-going container or commerce vessels." Savannah Riverkeeper, 400 S.C. at 203, 733 S.E.2d at 906. Thus, with respect to the Savannah Harbor, the SRMC had jurisdiction over questions involving the Construction in Navigable Waters Permit because the "navigability and dredging of the Savannah River for use by ocean-going container and commerce vessels" was at issue. Id.

However, if a matter is not within the SRMC's jurisdiction, it appears DHEC has jurisdiction over the issuance of environmental and water quality permits such as the 401 Certification and a Construction in Navigable Waters Permit. See, e.g., S.C. Code Ann. Regs. 19-450.1(A) ("Unless expressly exempted, a permit issued by the Department of Health and Environmental Control is required for any dredging, filling or construction or alteration activity in, on, or over a navigable water, or in, or on the bed under navigable waters...."; S.C. Code Ann. Regs. 61-101.A.2. ("Any applicant for a Federal license or permit to conduct any activity which during construction or operation may result in any discharge to navigable waters is required by Federal law to first obtain a certification from the Department."); S.C. Code Ann. Regs. 30-2.B ("Except for those exemptions as specified in the 1977 Coastal Zone Management

Mr. W. Dean Moss, Jr.
Page 6
April 8, 2019

Act, as amended, any person wishing to alter a critical area must receive a permit from the Department.").

Because of the significance of these issues and the impact of the Corps' proposed modifications and alterations of the NSBLD and the need for the State to exercise its regulatory and oversight authority appropriately in protecting the State's interests, I am respectfully requesting an opinion regarding the questions identified above.

Law/Analysis

With this extensive background in mind, we address your questions. First, you ask what is "the scope of the State's regulatory authority applicable to the Corps' proposed modifications and alterations of the NSBLD." Under the facts presented, the Corps is required to obtain from the State a Clean Water Act Section 401 Water Quality Certification ("401 Certification") and a Construction in Navigable Waters Permit ("Navigable Waters Permit"). See, e.g., S.C. Code Ann. Regs. 19-450.1(A) ("Unless expressly exempted, a permit ... is required for any dredging, filling or construction or alteration activity in, on, or over a navigable water, or in, or on the bed under navigable waters...."); S.C. Code Ann. Regs. 61-101.A.2. ("Any applicant for a Federal license or permit to conduct any activity which during construction or operation may result in any discharge to navigable waters is required by Federal law to first obtain a certification....").

The Corps' proposed project includes the removal of the existing dam and the construction of a fixed crest weir with a rock ramp. This proposed action will take place in part in South Carolina waters and on South Carolina's riverbed as the project stretches across the entire width of the Savannah River and South Carolina has a sovereign claim to a portion of river. See, e.g., Georgia v. South Carolina, 497 U.S. 376 (1990); see Martin v. Waddell's Lessee, 41 U.S. (16 Pet.) 367 (1842) ("[T]itle to a State's navigable waters and their riverbeds vested in the State as an aspect of sovereignty obtained when separating from the British Crown and becoming a State."). Unquestionably, as set forth in the facts, the Savannah River is a "navigable" waterway. State Water Control Bd. v. Hoffmann, 574 F.2d 191, 193 (4th Cir. 1978) ("The historical use concept includes within the framework of Corps authority under the 1899 Act those bodies of water which are deemed navigable only because they were navigable at some time in the past. Thus, a body of water may be currently unfit for navigation, and not susceptible to navigation through reasonable improvement, but will be brought within the Act's purview because it may have been used by a dozen traders two centuries ago."); see also Loving v. Alexander, 745 F.2d 861 (4th Cir. 1984) (discussing classification of waterbodies as navigable). Once a body of water, river or stream achieves "navigable" status, that status is not destroyed by the construction of a structure that may render the waterbody non-navigable in fact. 33 C.F.R. § 329.4 ("A determination of navigability, once made, ... is not extinguished by later actions or events which impede or destroy navigable capacity."); see also Loving, 745 F.2d 861.

In sum, given the extent and nature of the proposed project, it is beyond question that this proposed construction in South Carolina waters requires a Construction in Navigable Waters Permit under South Carolina law. S.C. Code Ann. Regs. 19-450. Moreover, the Corps'

Mr. W. Dean Moss, Jr.
Page 7
April 8, 2019

proposed project would alter river flow, lower the pool elevation in the fixed crest weir, and include a floodplain bench. Each of these actions independently would trigger the need for a 401 Certification and allow for the imposition of conditions to protect the water quality of the River. See, e.g., PUD No. 1 of Jefferson County v. Washington Dep't of Ecology, 511 U.S. 700 (1994); Sierra Club v. United States Army Corps of Eng'rs, 909 F.3d 635 (4th Cir. 2018); Murphy v. South Carolina Dep't of Health and Env'tl. Control, 396 S.C. 633, 723 S.E.2d 191 (2012).

Having concluded that the State possesses regulatory authority and jurisdiction over the Corps' proposed project for the NSBLD, the next question you pose in your letter is the delineation of the exercise of that jurisdiction between the SRMC and DHEC. See generally Savannah Riverkeeper v. S.C. Dep't of Health & Env'tl. Control, 400 S.C. 196, 733 S.E.2d 903 (2012) (discussing delineation of authority of SRMC versus DHEC with respect to the Savannah Harbor). See also Op. S.C. Att'y Gen., 2010 WL 4391637 (October 25, 2010).

As you state, the jurisdiction of the Savannah River Maritime Commission is established by statute, as follows:

[A] commission to be known as the Savannah River Maritime Commission is hereby established to represent this State in all matters pertaining to the navigability, depth, dredging, waste water and sludge disposal, and related collateral issues in regard to the use of the Savannah River as a waterway for ocean-going container or commerce vessels.

S.C. Code Ann. § 54-6-10. Thus, the “plain language of § 54-6-10 [gives] the Savannah River Maritime Commission the responsibility and exclusive authority to represent South Carolina in all matters pertaining or collaterally related to dredging in the Savannah River for purposes of navigation by ocean going container or commerce vessels.” Savannah Riverkeeper v. S.C. Dep't of Health & Env'tl. Control, 400 S.C. 196, 203, 733 S.E.2d 903, 906 (2012) (emphasis added); Op. S.C. Att'y Gen., *supra*.

A cardinal rule of statutory interpretation is to effectuate the intent of the legislature whenever possible. “What a legislature says in the text of a statute is considered the best evidence of the legislative intent or will” and “courts are bound to give effect to the expressed intent of the legislature.” Media Gen. Communications, Inc. v. S.C. Dept. of Revenue, 388 S.C. 138, 148, 694 S.C. 2d 525, 530 (2010); Wade v. State, 348 S.C. 255, 259, 559 S.E.2d 843, 844 (2002). When determining the effect of words utilized in a statute, a court looks to the plain meaning of the words. City of Rock Hill v. Harris, 391 S.C. 149, 154, 705 S.E.2d 53, 55 (2011). In interpreting ordinances, the rules of statutory construction may be applied. Like statutes, a court will apply the plain language of an act in interpreting an ordinance. Forrester v. Smith & Steele Builders, Inc., 291 S.C. 196, 352 S.E.2d 522 (1987). Moreover, we have consistently concluded that “. . . administrative agencies as creatures of statute possess only those powers expressly conferred or necessarily implied for them to effectively fulfill the duties for which they are charged.” Op. S.C. Att'y Gen., 2005 WL 292232 (January 27, 2005, citing authorities).

Consequently, the question as to whether the Commission's jurisdiction extends to the NSBLD must be resolved by reference to the statutory limitation of the Commission's authority to matters pertaining or collaterally related to "use of the Savannah River as a waterway for ocean-going container or commerce vessels." § 54-6-10. While the SRMC exercised jurisdiction over the Savannah Harbor Expansion Project ("SHEP"), the Corps' proposed project for the NSBLD, while ostensibly tied to mitigation for the SHEP, originates from a 2016 congressional enactment and goes well beyond the mitigation requirements of the SHEP and what was reviewed analyzed therein. Thus, this proposed project is properly viewed as a "stand alone" project subject to independent scrutiny.

Based on the statutory language and the background facts presented, it is our opinion that a court would likely conclude that the SRMC does not possess jurisdiction over the NSBLD because that portion of the Savannah River is not suitable or available for use "as a waterway for ocean-going container or commerce vessels." The maximum legally required depth of the Savannah River between Savannah Harbor and Augusta is nine feet. It appears, however, that this area has not been used or maintained for commercial shipping since the late 1970s. Moreover, a nine-foot depth is woefully inadequate to support "ocean-going container or commerce vessels" as required for the SRMC to have jurisdiction over the area. The draft for Panamax vessels is 39.5 feet, and even smaller feeder ships may require a 20-foot draft. Moreover, due to the sharp curves and oxbows located in various areas of the Savannah River, none of these ocean-going ships could maneuver that far up the Savannah River, thus surpassing the limit of SRMC jurisdiction.

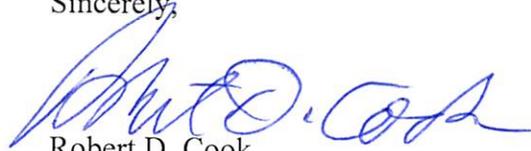
It therefore is the opinion of this Office that a court would likely conclude that the SRMC does not have jurisdiction over the NSBLD because the area of the Savannah River 11 miles below Augusta does not support "ocean-going container or commerce vessels." Cf. Savannah Riverkeeper, 400 S.C. at 203, 733 S.E.2d at 906 (holding that the SRMC had jurisdiction over issues pertaining to the proposed dredging of Savannah Harbor because it was "for purposes of navigation by ocean-going commerce and container vessels"). Moreover, because we conclude that the matter is not within the SRMC's jurisdiction, we find that DHEC possesses jurisdiction over the issuance of the 401 Certification and a Construction in Navigable Waters Permit for the Corps' proposed project for the NSBLD. See Savannah Riverkeeper, 400 S.C. 196, 733 S.E.2d 903; see, e.g., S.C. Code Ann Regs. 19-450.1(A) ("Unless expressly exempted, a permit issued by the Department of Health and Environmental Control is required for any dredging, filling or construction or alteration activity in, on, or over a navigable water, or in, or on the bed under navigable waters...."); S.C. Code Ann. Regs. 61-101.A.2. ("Any applicant for a Federal license or permit to conduct any activity which during construction or operation may result in any discharge to navigable waters is required by Federal law to first obtain a certification from the Department.").

Mr. W. Dean Moss, Jr.
Page 9
April 8, 2019

Conclusion

For the reasons set forth above, it is our opinion that a court would likely conclude that DHEC, rather than the SRMC, possesses responsibility to make determinations of suitability of the Corps' proposed project for the NSBLD under the governing law for a 401 Certification and Navigable Waters Permit for the issuance or denial of such authorizations.

Sincerely,



Robert D. Cook
Solicitor General

**Technical Comments of the Cities of
Augusta, Georgia and North Augusta, South Carolina
on**

***U.S. Army Corps of Engineers Report:
“Savannah Harbor Expansion Project,
Georgia and South Carolina: Fish Passage at New Savannah
Bluff Lock and Dam
Integrated Post Authorization Analysis Report and
Supplemental Environmental Assessment”
and Related Documents***

Submitted by



Augusta, Georgia

and

North Augusta, South Carolina



April 15, 2019

Contents

I.	Introduction.....	1
II.	Water Infrastructure Improvements for the Nation Act (WIIN Act 2016).....	3
III.	Corps of Engineers Guidance document: <i>Memorandum for Commander South Atlantic Division</i> , dated May 25, 2017.	4
IV.	Overall Comment on Erroneous Content and Changing Costs During Comment Period.....	5
V.	Overall Comments on Corps Draft Report	5
A.	Hydrology and Hydraulics Methodology.....	5
B.	Planning Process Comments	7
1.	“No Action” Alternative Selection Flawed.....	7
2.	SHEP 2012 Plan (NAA) Should Be Considered An Actual Real Alternative.....	7
3.	Comparison of Alternatives Flawed.....	7
C.	Navigation	7
D.	Water Level Lowering.....	8
E.	Flooding.....	10
F.	Water Supply Concerns.....	12
G.	Recreation and Economics	13
1.	Recreation, Uses, and Economics not Adequately Considered.....	14
2.	Evaluated Flows and Frequency.....	15
3.	Prediction on Water Surface Elevations and Decreased Depths	16
4.	Impacts to Docks	17
5.	Impacts to Hosting Special Events	17
6.	Impacts to Larger Boats & Commercial Operations	18
7.	Impacts to the NSBLD Park.....	18
8.	Summary - Recreation, Uses, and Economics not Adequately Considered.....	22
9.	River Vision Plan for the Savannah River	22
10.	Integration of the NSBLD Alternatives with Upstream Planning.....	24
11.	Integration of the NSBLD Alternatives with the Proposed NSBLD Park	24
12.	Fishing	24
13.	Criteria for Recreational Value for the Park	25
14.	Integration with the Whitewater Passage and NSBLD Alternatives.....	25
H.	Impacts and Costs for Temporary Works During Construction.....	26
I.	Real Estate	27
J.	Sedimentation.....	27
1.	Siltation of the Pool Over Time	28

2.	Toxicity and stabilization of newly exposed sediments	28
K.	Aquatic Resources	29
1.	Impact of Dam Alterations on Savannah River Fisheries	29
2.	Impact of dam alterations on dissolved oxygen concentrations.....	30
3.	Scour Hole Below NSBLD	33
4.	Effect of Drawdown on Groundwater Elevations	33
5.	Justification of mitigation.....	34
L.	Impacts to Wetlands not Adequately Identified, Evaluated, or Mitigated	34
1.	Wetlands near the NSBLD Site.....	34
2.	Wetlands Upstream of the NSBLD	36
M.	Power Generation – A Lost Opportunity for O & M Revenue?	37
N.	Cultural Resources and Historical Considerations	37
VI.	Specific Comments on Alternative 1-1	39
A.	Reasons to include and select Alternative 1-1.....	39
1.	Advantages, under the WIIN Act 2016 specified purposes:	39
2.	Disadvantages, under the WIIN Act 2016 specified purposes:.....	39
3.	Other Advantages, not directly related to WIIN Act specified purposes:	39
4.	Other Disadvantages, not directly related to WIIN Act specified purposes:	40
B.	Reasons to Question Costs Related to Alternative 1-1.....	40
1.	Widely Changing Costs.....	40
2.	Erroneous Cost Estimates and Assignment of Responsibility Cost Sharing.....	40
VII.	Specific Comments on Alternative 2-6d.....	41
A.	Reasons to Reject Alternative 2-6d.	41
1.	Advantages, under the WIIN Act 2016 specified purposes:	41
2.	Disadvantages, under the WIIN Act 2016 specified purposes:.....	41
3.	Other Advantages, not directly related to WIIN Act specified purposes:	41
4.	Other Disadvantages, not directly related to WIIN Act specified purposes:	41
B.	Reasons to Question Costs Related to Alternative 2-6d.....	42
1.	Erroneous Cost Estimates and Assignment of Responsibility for Cost Sharing.....	42
VIII.	Detailed Comments on Corps Draft Report, Line by Line	42
APPENDIX A	Resolutions of Governing Bodies: Augusta, North Augusta, Aiken County	
APPENDIX B	Letter from Senators and Congressmen to Department of the Army, Corps of Engineers, April 9, 2019.	
APPENDIX C	Report on Hydraulics Methodology, April 15, 2019	

APPENDIX D	Hydraulic Modeling and Discrepancies Observed During Drawdown
APPENDIX E	Savannah River Sediment Chemistry Data
APPENDIX F	River Vision Plan for the Savannah River for the City of Augusta, April 2019.
APPENDIX G	Detailed Comments on Corps Report Line by Line
APPENDIX H	Other Alternatives That Have Been Proposed
APPENDIX I	Transcript of City of Augusta Public Meeting, Lock and Dam Meeting, March 31, 2019
APPENDIX J	Aiken Standard News Article, February 19, 2019
APPENDIX K	Augusta Chronicle News Article, February 16, 2019

TECHNICAL COMMENTS OF THE CITIES OF AUGUSTA, GEORGIA AND NORTH AUGUSTA, SOUTH CAROLINA

On

Savannah Harbor Expansion Project, Georgia and South Carolina: Fish Passage at New Savannah Bluff Lock and Dam

Integrated Post Authorization Analysis Report and Supplemental Environmental Assessment

February 2019

And Related Documents

April 15, 2019

I. Introduction

The Corps of Engineers (Corps) proposes to remove a dam which has been in place and established the water surface elevation upon which Augusta and North Augusta (Cities) have depended on for nearly a century. The removal will reduce water levels in the Savannah River over seventeen miles upstream through the cities of Augusta and North Augusta reducing water levels by as much as three to five feet from existing water surface elevations.

See Figures 1 – 3. The proposed project will directly affect approximately seventeen (17) miles of river habitat and nearly a century of regional planning, economic development, water supply, and recreation in the Augusta-Richmond County and North Augusta area, one of the largest 200 metropolitan statistical areas in the United States. Immediate economic effects will be many millions of dollars and, over the 100-year period identified in the SHEP Draft Report, the economic impact to the Region will be in the billions.

Augusta and North Augusta have a unique and well-developed history dependent upon water related activities, water dependent recreation, water supply including pumps for water supply all of which will be affected by the proposed action. Water resources, including the Savannah River and the affected reach and area of indirect effects, are part of our citizens' quality of life and fundamental infrastructure. The effects of the Corps proposal are significant, permanent, longstanding, and of sufficient public concern and controversy such that the action constitutes a major Federal action significantly affecting the quality of the human environment under Section 102 of NEPA, and



This photo taken Feb. 13, shows the river levels near River North in North Augusta during the Savannah River drawdown.

Figure 1: Water level reductions of as much as three to five feet several miles upstream of the NSBLD during February 8 – 15 (Aiken Standard, "CSRA officials react to Savannah River drawdown," Feb. 19, 2019 (attached as Appendix J))

accordingly is required under NEPA to proceed under a detailed Environmental Impact Statement (“EIS”); 33 C.F.R. Part 230; 40 C.F.R. Part 1508.

Licensed professional engineers have identified errors in water surface elevation modeling (HEC-RAS) which were evident during the February 8-February 15 Corps drawdown of the pool. Corps modeling underestimated pool lowering by several feet in some instances, so that the observed water levels were much lower than predicted. Details regarding the modeling disparity from field evidence, calibration, and potential concerns are outlined in the Technical Comments transmitted herewith, and in the appended Report on Hydraulics Methodology, included in Appendix C. Accordingly, the SHEP Draft Report is demonstrably incorrect from a modeling and impact assessment standpoint and must be revised and reissued (in EIS form as noted above and in Legal Comments).

The Corps has not provided adequate time for public and local governmental consideration of the proposed action and alternatives, and has impermissibly both predetermined the action (Proposal 2-6D) and eliminated alternatives (e.g. Alternative 1-1) prior to public and governmental input. Importantly, the Draft Report was issued for public comment **less than two days after the Corps drawdown**, insufficient time for calibrating the model or assessing the drastically different field observations and conditions from the anticipated modeled effects. The Corps drawdown was commenced February 8 and continuing through February 15, 2019, and the Draft Report was issued the very next day February 16, 2019, rendering it impossible to have accounted for public comments.

During the comment period, the Corps improperly eliminated alternatives, specifically including the alternative which had the least impact on pool level and surface water elevation – Alternative 1-1. According to the Corps’s blog of March 26, 2019, just three weeks prior to the close of the public comment period the Corps eliminated Alternative 1-1.¹ The Corps has not followed NEPA and Corps regulatory procedures including scoping and proposing a Finding of No Significant Impact (“FONSI”) before soliciting public comment as required. These errors and deficiencies in the public notice and comment process require revision to the analysis and re-noticing to ensure Due Process and NEPA and Corps regulatory program compliance.

The Cities identify other concerns in the specific comments and supporting narratives presented below and in the attached companion Legal Comments.



Figure 2: Water level February 15, 2019 (Augusta Chronicle, “Cost Differences in Options for Lock and Dam Questioned,” Augusta Chronicle (Feb. 15, 2019) attached as Appendix K).



Figure 3: Water Level Decrease Augusta Riverwalk, February 15, 2019 (Augusta Chronicle, “Cost Differences in Options for Lock and Dam Questioned,” Augusta Chronicle (Feb. 15, 2019) attached as Appendix K).

¹ “Alt 2-6d is not the only in-channel alternative”, Corps March 26, 2019 (last accessed March 27, 2019, at <https://balancingthebasin.armylive.dodlive.mil/2019/03/26/alt-2-6d-is-not-the-only-in-channel-alternative>).

II. Water Infrastructure Improvements for the Nation Act (WIIN Act 2016)

The Cities of Augusta and North Augusta find that the Act has basic flaws in language that have led the Corps to erroneous interpretation and subsequent errors in methodology in the Draft Report and subsequent amendments.

The following is a summary of principal provisions of the two options in the WIIN Act, (which was amended and passed in the U. S. Senate in a single day without hearings, debate, nor prior knowledge of the leadership of either of the States of Georgia and South Carolina):

- De-authorize the Lock and Dam
- Modify the project according to two options:

EITHER

A(i) *“Repair of the lock wall . . . and modification of the structure . . .*

(I) to maintain the pool for navigability, water supply, and recreational activities as in existence on the date of enactment of this Act and

(II) to allow safe passage . . . of . . . migratory fish.”

OR

A(ii) *“Construction . . . of a structure” [or weir] . . . “that is able to maintain the pool for water supply and recreational activities, as in existence on the date of enactment of this Act.*

(III) Removal of the . . . Lock and Dam.”

Note that the two options have drastically differing purposes. Along with water supply and recreation, the first option includes navigation and fish passage, while the second option excludes navigation and fish passage. A(i) includes three purposes, including navigation. Although the Corps has interpreted navigation as being only within the pool, a plain reading of the WIIN Act reveals that the obvious intent is that the lock should remain in place and should include rehabilitation for navigation up and down the river, not just in the pool. Otherwise, navigation would become merely a subset of recreation. In fact, the “Value Engineering” alternative presented by the Corps in 2015 showed the lock remaining in place for the alternative on which this section of the WIIN Act is based.

A(ii) has only two purposes, which are different from A(i), including water supply and recreational activities only. Moreover, A(ii) contains no mention of authority for a fish passage, nor any requirement that one be constructed under this option.

The Act goes on to authorize the conveyance of the park and recreation area adjacent to the Lock and Dam to Augusta-Richmond County, Georgia, without consideration. Augusta, Georgia would normally expect to receive a functioning park and recreation area in good condition by language such as this; however, it does not appear that any facilities in such serviceable condition are planned under the implementation of this authorization.

III. Corps of Engineers Guidance document: *Memorandum for Commander South Atlantic Division, dated May 25, 2017.*

The Cities find that the Guidance repeats the flawed language of the Act and contains its own basic flaws in implementation instructions that have led the Corps to erroneous interpretations and subsequent errors in their report.

Option 1 repairs the lock wall and retains the lock, which can be and should be rehabilitated for navigation as required by the Act. The Corps staff has erroneously interpreted navigation to be only within the upstream pool. If this were really the legislative intent, then why would navigation not also be an authorized purpose of Alternative 2, which obliterates the lock?

Option 1 is required to pass safely the shortnose and Atlantic sturgeon and other migratory fish, while Option 2 is not required to pass fish at all. Why then do the alternatives proffered under Option 2 include a fish passage at all?

Both the WIIN Act and the Guidance require a structure that is able “to maintain **the** pool for water supply and recreational activities, as in existence on the date of enactment of this Act”. This language is clear that the existing water levels and existing range of level operation must be replicated as major design criteria for the intended project. It clearly does not imply maintaining **a** pool, or keeping just the **functionality** of the pool, or other such stretched interpretations. (emphasis added).

Members of the Georgia Congressional Delegation wrote the Corps of Engineers to “express the intent of Congress” in the WIIN Act, concluding in part, “Clearly these results [of the drawdown] do not reflect the intent of Congress.” (See copy of letter in Appendix B.)²

The Guidance directs the identification of specific adjacent park and recreation area acreage to be conveyed to Augusta. These should be only lands not required for the project, and should not include flood passage lands that would require future maintenance by the City of Augusta for purposes other than parks and recreation.

With respect to cost sharing, it is noted that the Guidance directs, “If Alternative 1 is chosen, the federal share of post-construction costs . . . will be 100 percent; if Alternative 2 is chosen, the federal share will consist of 100 percent of the costs . . . of maintaining the fish passage; and the non-federal share will consist of 100 percent of the costs of operation and maintenance of the structure for any other purpose, including maintenance of the pool for water supply and recreation.”

First, there should be no costs for maintaining the fish passage under Alternative 2, because it is not authorized to have a fish passage nor so directed in the Guidance. Second, the cost sharing directions herein have not been closely followed in the Report and the costs have sometimes erroneously been split on all alternatives whether pursuant to WIIN Act Option 1 or Option 2. The cost comparison presented in the Corps’s blogpost “Comparing the two Fish Passage

² Letter: Senators Graham, Scott, Isakson, and Perdue, and Representatives Wilson and Allen to The Honorable R. D. James and Lieutenant General Todd T. Semonite, April 9, 2019.

alternatives,” is blatantly in error in that the O&M costs for Alternate 1-1 should have been assigned 100% to “Fed Share” not “non Fed Share,”³

IV. Overall Comment on Erroneous Content and Changing Costs During Comment Period

The Cities find the Draft Report riddled with errors and inaccuracies, both in fact and in analyses, so as to bring into question the quality of the information upon which critical decisions are to be made, especially because those decisions bring with them permanent threatening and negative consequences to the communities.

The Corps of Engineers inexplicably removed Alternative 1-1 from their consideration and drastically changed their arbitrary and unsubstantiated cost projections during the middle of the comment period, leaving the Cities and other stakeholders baffled as to what alternatives and what content of the Draft Report is to be commented upon. It is assumed throughout these comments that the Cities’ responses should be on the Draft Report as originally published, including Alternative 1-1. The subjects of the major substantive changes in content that were published in the Corps blog and not presented to the public in the official Public Workshop will also be addressed as those topics appear herein.

V. Overall Comments on Corps Draft Report

A. Hydrology and Hydraulics Methodology

The hydraulic models used in the Analysis Report are all flawed and do not accurately represent the actual water surface profiles on the Savannah River. At least one major problem is the selection of the value for the roughness coefficient “n” in Manning’s equation for open channel flow, resulting in predicted water levels much higher than reality.

The accurate predictions of water levels are of great importance to the design of any water level management structure and are even more paramount when those structures are fixed weirs. In those cases, the designers only get one chance to get it right. They have not gotten it right yet, as proven by the Fixed Weir Pool Simulation conducted by the Corps in February 2019.

Observations on-site during the February 2019 river drawdown show clearly that during modest flows, the pool behind the Lock and Dam has very little fall end-to-end, and thus acts much more like a lake than it does like a river.

These facts demonstrate major flaws that affect all of the hydraulic profile computer models and bring into question the validity of the entire Report and its conclusions, which must be withdrawn, corrected, and reissued for public comment.

An early drawdown to calibrate and validate the HEC RAS hydraulic model should (and could have easily been conducted) have been conducted prior to the development and use of modeling results in the selection of alternatives.

³ <https://balancingthebasin.armylive.dodlive.mil/2019/03/18/how-two-fish-passage-alternatives-compare/>, Draft Report, 4.3 Cost Sharing, p. 105, Implementation Guidance, May 25, 2017, accessed March 28, 2019; this is at variance with the Guidance document and Table 31: of the Draft Report, p. 104.

This critical comment is supported by the observations of the conditions during the drawdown of the river in February 2019. This test was a prime opportunity to test the validity of the computer simulations models using the subject of those models: the Savannah River itself.

On February 15, 2019, the water level drop from Fifth Street (111.23, NVGD 1988) to the Lock and Dam (110.28, NVGD 1988) was 0.95 feet.⁴ This amount is only one-third of the difference of 3.3 feet predicted by the Corps's 8,000 cfs model.⁵ Using the actual drop over the 12.0 mile reach and the corresponding flow rate occurring at the Lock and Dam at the time of 7,270 cfs just downstream from the Lock and Dam, the input values for the model can be tested.⁶

An analysis of these conditions, which is presented in detail in Appendix C, shows that Manning's "n" values probably lie between 0.019 and 0.023.⁷ These values are much different from either the 0.031 or 0.033 estimates used by the Corps.⁸ Their report states the following concerning this subject, "Manning's n values for natural channels are difficult to quantify outside of a laboratory setting and are subject to the professional judgement and experience of the hydraulic engineer." The drawdown furnished the best "laboratory setting" of all, the full-sized physical model of the Savannah River itself. It proved that the water level drop at Fifth Street was at least three times that which the Corps's simulations had predicted.⁹

The Draft Report also covers selection of Manning's "n" values for the weir itself, adapting the figures from the rock weir structure of the Cape Fear River Dam Removal and Fish Passage, which ranged from 0.056 to 0.078, and "ultimately landed on a conservative n-value for the rock ramp of 0.08"¹⁰ (Emphasis added) Their adopted value lies outside the range from which it was derived. In fact, for low flows the higher n-value is not conservative at all. It will predict higher upstream stages than the results from choosing a lower value. This would produce the same type of erroneous elevation difference between predicted and actual that was observed during the February 2019 drawdown.

4 USGS Recording Gages 02196670, 02196999, and 02197000.

5 Corps of Engineers, Analysis Report, Appendix A, Table 8, p. A-41.

6 USGS Recording Gage 02197000. A corresponding flow rate of 5,422 cfs at the Augusta Canal Diversion Dam on the morning of February 15, 2019, supports the approximate flow through the reach. This does not include flows from major creeks between the Canal Dam and the NSBLD; Unfortunately, the steady flow condition, which would have been desirable for a more accurate test, was not quite reached during the drawdown, because it was cut short when the bulkhead at the Goodale Landing neighborhood showed signs of imminent failure. (Personal communication: Vance Moody to Tom Robertson, March 6, 2019.)

7 Robertson, Thomas H., Report on Hydraulics Methodology, April 15, 2019, See Appendix C hereof.

8 Corps of Engineers, Analysis Report, Appendix A, p. A-15.

9 One of the Goals and Objectives of the drawdown was to "verify the predictions made with the riverine model for the depth attenuation through the pool. If necessary, adjustments will be made to the model to better represent the actual conditions." See "Operation Plan for Fixed Weir Pool Simulation, Savannah Harbor Expansion Project Fish Passage at New Savannah Bluff Lock and Dam", January 25, 2019, pp. 2-3, copy in the Office of the Mayor, North Augusta, SC. Because the predictions and the actual conditions of elevation were grossly different, all of the hydraulic models are likely similarly wrong, so that adjustments must be made to model and all of its simulations that underly the report. The report must be amended or republished. The Cities reserve the right to make additional comments when the corrected data is made available, because the Draft Report is erroneous.

10 Draft Report, Appendix A, 2.1.2. Geometry Modifications, p. A-5.

B. Planning Process Comments

1. “No Action” Alternative Selection Flawed.

Selection of the SHEP 2012 Plan as the No Action Alternative is illogical, because it cannot be built following the WIIN Act 2016, which de-authorized the Lock and Dam. Selection of this plan also distorts the base line conditions of the complete set of water surface profiles upon which the entire Draft Report is based. The No Action Alternative, by contrast, should be the actual “existing conditions” that prevailed before and on the date of enactment of the WIIN Act, which are higher. Using the real stages as the base line would be more accurate. For example, the actual existing operating level at the Fifth Street gauge should be 114.2, not 113.2 (NAVD 1988). The alternatives analysis of the Draft Report should be withdrawn and re-analyzed with a corrected No Action Alternative.

2. SHEP 2012 Plan (NAA) Should Be Considered An Actual Real Alternative

If the SHEP 2012 Plan should be retained as the No Action Alternative (notwithstanding the previous paragraph of objection), the SHEP 2012 Plan must be considered as an actual viable alternative, capable of being implemented if selected. It was approved by all agencies, was “shovel-ready” before the WIIN Act, and could likely be implemented more quickly than any other plan.

3. Comparison of Alternatives Flawed

The Draft Report errs in directly comparing alternatives that are not developed pursuant to the same section of the WIIN Act, because each has different purposes and therefore the criteria should be different, depending upon whether the alternative be promulgated under Option (i) or Option (ii), as described in the WIIN Act 2016 paragraph above. Thus, the Plan Selection section must be reformulated to conform correctly to the Act. The Option (i) plans should be judged by the criteria of navigation, water supply, recreation, and fish passage. The Option (ii) plans should be judged by the criteria of water supply and recreation. Faithful application of these criteria, that will correct the similar flawed Table 29: Final Analysis¹¹ in the Draft Report, will result in a different outcome of ratings for the different alternatives, most likely giving the No Action Alternative and Alternative 1-1 the highest ratings.

C. Navigation

The Cities of Augusta and North Augusta find that none of the alternatives maintain the pool as required by the WIIN Act. Further the Cities interpret the word “navigation” in the WIIN Act under its option (i) as navigation through the existing lock up and down the river past the rock ramp over the dam, as evidenced by the fact that the lock wall is directed to be retained and repaired under this option. This position is bolstered by the fact that the act does not authorize navigation as a purpose of the free-standing weir described in option (ii). The distinction clearly illustrates that the act does not contemplate “navigation” to apply merely to movements within the pool, as arbitrarily interpreted by the Corps, although it would also include those functions. All alternatives in the Draft Report fail to conform to the WIIN Act for navigability, except the No Action

¹¹ Draft Report, p. 100.

Alternative, which retains the lock, but does not repair it. Navigation within the pool itself is also impaired by all of the alternatives, including Alternative 1-1 and the No Action Alternative, which lower the pool elevations.

The WIIN Act authorized navigation as a purpose for the Option (i) alternatives but not for the Option (ii) alternatives. Keeping the lock is clearly depicted in one of the 2015 “value engineering” alternatives upon which the language of the act was apparently based, showing the rock ramp over the dam gates

As for navigability within the pool, the lowered water levels of all of the Option (ii) choices will impair or prevent safe navigation of several reaches of the pool. The recommended plan is particularly onerous, in that it purports to keep the functionality of the pool, yet dangerously exposes boat traffic to underwater obstructions that heretofore have not come into play. A particular safety issue would be newly created along the structure known as Gardner’s Bar training wall or jetty, which extends for about one

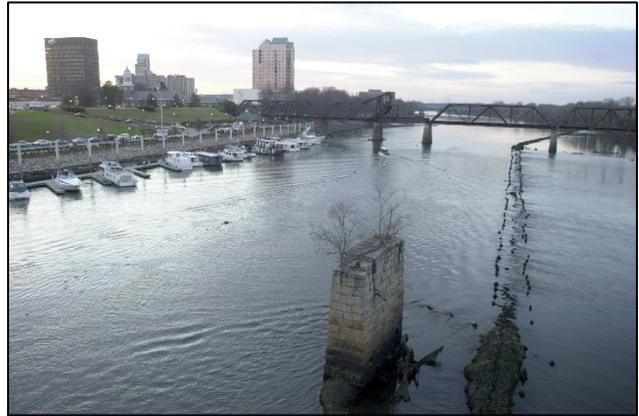


Figure 4: Underwater jetty protruding through water surface following river level drawdown.

mile down the middle of the river near the centers of the two cities. It was constructed by the Corps of Engineers prior to 1915 to divert the main flow of the river to the Georgia side to keep the docks at Augusta scoured out to prevent shoaling. This wall is constructed of timber piles, cribs, and rock. At the existing water levels this training wall is not a major impediment to navigation and recreational use, but at lower stages of the pool the wall becomes a hazard to navigation and at the lowest level it even protrudes from the surface of the water. It will effectively narrow the useable width of the river to about half its present width, right in the middle of town where boat traffic is the greatest and where water sporting events have regularly occurred. If water levels are to be lowered, the Corps should include in the project mitigation measures for the wall not merely by “avoidance,” as stated in the Draft Report¹², including selective demolition to lower the top elevation so that vessels might safely pass over in the future, as well as allowances in the project costs.

D. Water Level Lowering.

The Draft Report and the Corps’s blogposts are very confusing for the reviewers and for the public to comprehend and analyze in that they use several different units, types, terminology, and descriptors for level measurements in various places: feet, inches, elevations, depths, ranges, impacts, today, existing, etc.

Particularly confusing is the mixing of elevation figures from two different surveying datums. The original design of the NSBLD contemplated a range of normal operating water levels between Elev. 114.5 and Elev. 115.0 (NGVD 1929), and a review of recent

¹² Draft Report, Section 3.6.9.3 Future Conditions with Alternatives 2-3, 2-6a-d, and 2-8, p 90.

USGS water stage records show that the Corps has actually operated the dam at an average normal level of 115.0. Yet, inexplicably, they have used Elev. 114.0 as the existing conditions when comparing alternatives, even though the real existing conditions show Elev. 115 to be the normal pool level on a nearly every day basis. This 1.0-foot difference in the initial base line data skews all of the comparisons in the Draft Report, which must be corrected and reissued so that truthful comparisons can be made.

Moreover, the Corps used an alleged, so-called “range” of operation of existing conditions of Elev. 112 to 115, which is far from what the Corps operations personnel are proven by gauge records to use actually day by day.

The following table summarizes the water levels from the Draft Report and from other sources as shown in the footnotes below it. While it may be used to make any number of comparisons that the reader and other reviewers may wish to study, the most salient issue is that the Corps used the low side of the current normal operating level as the “Existing” conditions at the NSBLD to compare its hydraulic models for the alternatives, which is one (1) foot lower than the actual operating levels reported by USGS.

Description	Water Elevations				Notes
	Lock & Dam ^a		Fifth Street Bridge ^b		
Location Datum	NGVD 1929	NAVD 1988	NGVD 1929	NAVD 1988	Assumed difference = 0.8'
Normal pool per original design ^c	115.0 - 114.5	114.2 - 113.7	115 N/A	114.2 N/A	
Corps's current operations					
"Normal" ^d	114.0 -114.5	113.2 - 113.7	115.1	114.3	
Range ^e	112.0 - 115.3	111.2 - 114.2	N/A	N/A	
Usual Levels (non-flood) per USGS gauges ^f	115.0 ^g	114.3	115.0	114.3 ^h	Approximate Water Year 2018 year-long medians, by inspection
Alternative Simulations Q= 8000 cfs from HEC-RAS Summary ⁱ					Elevations Produced from Questioned Model
Existing	114.0	113.2	116.1	115.3	Probably wrong
No Action Alt	114.0	113.2	116.1	115.3	Probably wrong
Alt 1-1	113.9	113.1	116.0	115.2	Probably wrong
Alt 2-6a	112.6	111.8	115.4	114.6	Probably wrong
Alt 2-6d	111.7	110.9	115.0	114.2	Inconsistent with observations 2/15/2019
Actual Elevations February 15, 2019	111.08	110.28 ^j	112.03	111.23 ^k	Flow rate at NSBLD was 7,270 cfs, near 8,000 cfs.
Desired by Cities and Counties ^l	N/A	N/A	115.2	114.5	
<p>Note: The actual instantaneous flow rates in the Savannah River on the morning of February 15, 2019, were 7,270 cfs at NSBLD and 5,422 cfs at Augusta Canal Diversion Dam</p> <p>References:</p> <ol style="list-style-type: none"> Lock and Dam United States Geological Survey (USGS) gauge is located just upstream. Datum is NGVD 1929. 					

2. Fifth Street USGS gauge is located on first pier from Georgia side. Datum for the recording gauge is NAVD 1988. Zero of the recording gauge is 100.00. Note that the datum for staff gauge is NGVD 1929. Zero of the staff gauge (and previous recording records) is Elevation 102.06. Verified by field surveys by Cranston Engineering Group, P.C.
3. Construction plans: *Rehabilitation of Gates and Piers, New Savannah Bluff Lock and Dam*, Plate S-500, 12 March 1995; and Corps of Engineers, U. S. Army, Savannah, Georgia, District, *Special Flood Hazard Information Report, Savannah River, Augusta, Georgia*, August 1971, p. 7.
4. Draft Report, Appendix A, p. A-19. USGS records for Water Year 2018 contradict the Corps's assertion of operating range.
5. Draft Report, 2.2.2. Hydrology and Floodplains, p. 18.
6. Inspection of records of USGS gauge records for Water Year 2018 (October 1, 2017—September 30, 2018).
7. Gauge 02196999 at New Savannah Bluff Lock and Dam.
8. Recording Gauge 02126670 at Jefferson Davis (Fifth Street) Bridge.
9. Draft Report, Appendix A, Table 8. Summary of HEC-RAS Results, p. A-41.
10. Gauge 02196999 at New Savannah Bluff Lock and Dam.
11. Recording Gauge 02126670 at Jefferson Davis (Fifth Street) Bridge. Verified by actual field survey by Cranston Engineering Group, P.C. at Elev. 111.20 (NVGD 1988) on February 15, 2019 at 11:13 am EDT.
12. Resolutions by Augusta, North Augusta, Aiken County, and Columbia County.

The recommended alternative and others that include a full-river width rock ramp as presented in the Draft Report will result in more rapid and frequent fluctuations in the level of the pool. This is due to the elimination of the large adjustable hydraulic gates in the NSBLD. No analysis or criteria for the evaluation of the increase in variability was presented in the Draft Report. A maximum drawdown rate of 0.5 feet per day was given in the Operation Plan for Fixed Weir Pool Simulation, Savannah Harbor Expansion Project Fish Passage at New Savannah Bluff Lock and Dam, January 25, 2019; however, failure of a wall occurred during the drawdown and no application or evaluation of this criteria for future conditions was provided. Evaluation, analysis, and selection of alternatives should include impacts related to more frequent and pronounced impacts from rapidly varying pool levels – such as those that will occur in the recommended alternative.

E. Flooding

The Draft Report gives only minimal consideration to the threat of flooding from the regulatory 100-year flood and the 500-year flood, as required by rules of the Federal Emergency Management Agency (FEMA). It fails to demonstrate that any of the alternatives will result in a “no-rise” condition, a paramount issue and potential threat to the communities, in violation of both the WIIN Act itself and of FEMA regulations. In fact, the Draft Report explicitly casts doubt over whether a “no-rise” situation is even possible. The Corps must retract and revise the Draft Report to demonstrate that the project will not cause a rise in the FEMA 100-year Floodplain, nor any change in the FEMA-designated Floodway.

In addition, the Draft Report inadequately addresses flooding from the more frequent (lower flow) floods, along with the physical, economic, and public safety threats resulting from those events, especially within residential and business areas along the river.

The WIIN Act mandates that the project maintain specific minimum water levels, while the FEMA regulations require the maximum water levels from the designated “base flood” (the one-percent-exceedance-chance flood, or 100-year flood) not be raised: i.e. a “no-rise” condition. These oxymoronic boundaries create an engineering problem that is nearly impossible to solve with a fixed weir structure, regardless of its crest elevation. Because of the inability of the Corps to design either of the 2015 “Value Engineering” weir alternatives to meet these criteria, they had to discard both of them as viable choices. These were the Corps’s conceptual ideas that led to the establishment of the specific options in WIIN Act in the first place. In the end Corps has had to abandon both of their “good ideas,” because they are both entirely impractical solutions as to handling flows. In short, the problem is that no rock weir can be removed from the channel in times of flood to make way for large flows, as can the existing gates of the Lock and Dam, which can and regularly are lifted high above the waters below.

The only way to maintain the pool, preserve the NSBLD Park, and also handle the floods is to provide a dedicated way for flood waters to pass the New Savannah Bluff at or below the stages that currently exist. The Corps’s alternatives in the Draft Report all handle flood waters around the weir in one way or another: via a “runaround spillway” (similar to a farm pond) in some, a flood channel with new gates in one, and through the existing gates, retained as in Alternative 1-1. In fact, Alternative 1-1 is the only choice which actually solves the engineering problem. And, with modifications, this basic plan can do so without adding additional risks at the Lock and Dam site or within the upstream pool.

The Draft Report describes the FEMA “existing model,” (presumably the “effective” one upon which the current official flood plain maps are based) as having been originally developed with the program HEC-2 in November of 1994. The 1994 model was then set up by the Corps and is still the effective FEMA model.¹³ It has its roots even earlier than that, beginning with the Corps’s own work in and prior to 1971, when they published a special flood hazard report on the Savannah River. The original source of the cross-sectional data for this model is the “Savannah River below Augusta Annual Survey,” and available contour maps for overbank elevations.¹⁴ The USGS quadrangle maps with contour intervals of ten (10) feet are the most likely source, which are imprecise compared to the sophisticated LIDAR and similar sources, such as those the Corps used for the new two-dimensional (2D) modelling of the various alternatives in the Draft Report.

The Corps abandoned the FEMA profiles in favor of more precise modern methodology in its newer HEC-RAS programs for one-dimensional (1D) and two-dimensional (2D) flows for their analysis purposes, which should produce more precise results. However, the Corps kept the old FEMA work for future use in permitting, “if possible.” The Draft Report states the following about the FEMA effective model:

13 Email: Chris Budd (AtkinsGlobal) to Tom Robertson (Cranston Engineering Group, P.C.), 4/9/19: “The effective model for the Savannah River is still the 1995 [sic] study by Corps.”

14 Corps of Engineers, U. S. Army, Savannah, Georgia, District, *Special Flood Hazard Information Report, Savannah River, Augusta, Georgia*, August 1971, passim.

“The FEMA existing model was assumed to be reasonably accurate, and no attempt was made to further calibrate the model to observed data. This was also to preserve model continuity to pursue a no-rise certificate, if possible.”¹⁵ (Emphasis added.)

The construction of a fixed weir will also cause increased frequency of flooding for lesser floods than the 100-year. For example, the Draft Report states that Alternative 2-6a “may cause a minor increase in flooding depth at dozens of parcels for the 50% AEP [annual exceedance probability, or 2-year] flood event.” This is very close to the “mean annual flood,” the flood which would occur on the average once every year. What the Draft Report also fails to say is that the flooding depth of this and other floods will occur more often, because the gates will not be available to re-regulate the inflows.

The Draft Report, includes inundation maps for the 50% AEP flood for Alternative 2-6a, which shows rises of three (3) inches to greater than twelve (12) inches.¹⁶ While the rises occur over the whole flood plain, such rises will likely cause access problems for a number of residences and businesses at different locations, including along Gum Swamp Road, the un-named access road to the farms along the dead river just downstream of the Sandbar Ferry Road, the Mason sod farm buildings, and several locations within the River North neighborhood, to name a few.

F. Water Supply Concerns

In analyzing the workability of the City of Augusta’s raw water pumping station under the various alternatives, the Corps included only the existing conditions of water withdrawal rates at the N. Max Hicks Plant Raw Water Intake, without considering ultimate build-out capacity, which is much larger. Moreover, the February drawdown showed that the Corps’s hydraulic model did not predict the water surface elevations properly. Therefore, the City of Augusta has grave doubts about the future effectiveness of this critically important raw water pumping station, which supplies drinking water to a large part of the City’s citizens.

The N. Max Hicks Water Treatment Plant (NMHWTP) is a public water system for municipal water supply owned, operated and constructed by the Augusta Utilities Department (“Augusta Utilities”). The plant was constructed with public funds and is authorized pursuant to the Federal Safe Drinking Water Act, 42 U.S.C. 300f *et seq.* and Georgia Water Resources Act, O.C.G.A. § 12-5-31.

The NMHWTP is currently permitted to treat 15 Mgal/d, and the planned site capacity at this location is 60 Mgal/d. The plant will be expanded in 15 Mgal/d increments as system demands increase.

The hydraulic analysis of the raw water pumping system included modeling at three flow rates, the highest being 19.5 Mgal/d. This flow was chosen as it corresponds to the pumping capacity of the existing pumps. The Draft Report acknowledges, however, that the existing station is capable of pumping 30 Mgal/d with the changeout of existing pumps and addition of a fifth pump. The piping is already in place for the addition of a fifth pump.

¹⁵ Draft Report, Appendix A,2.1.2. Geometry Modifications, p. A-5.

¹⁶ Draft Report, Appendix A, Attachment 2.

When the Corp's consultant modeled the raw water system to evaluate the impact of water surface elevations corresponding to Option 2-6d, they deemed it prudent to include vacuum assisted priming for the raw water pumps, even though they determined the system would be marginally acceptable without them. The system does not currently have vacuum assisted priming, and its construction is estimated at \$228,000 by the Corps.

Augusta Utilities is concerned about the following deficiencies in the Corps's analysis:

- The highest flow rate modeled was 19.5 Mgal/d and the modeling indicated the existing system required modification.
- Actual constructed pump station capacity (with pump changeout) is 30 Mgal/d. No analysis was provided for this condition.
- The river intake system, typically the most expensive part of the raw water system, is capable of delivering 60 Mgal/d at current water surface elevations. A significantly lower water surface would likely require extensive modification to the river intake system. As the intake and pumping system was designed with current water surface elevation parameters, at this time it is not known whether the intake and pumping system will be able to meet original design criteria with the changes proposed by the Corps in the Draft Report.
- All the hydraulic analyses of Augusta's raw water system were predicated on the Corps's modeling of water surface elevations for various alternatives. The drawdown that occurred the week of February 11, 2019 proved that the Corps's modeling overstated water surface elevations. Actual water surface elevations will be significantly lower than what is predicted by the Corps's modeling.

G. Recreation and Economics

The Cities of Augusta and North Augusta find that impacts on recreational uses of the river are not adequately identified, evaluated, or mitigated within the Draft Report. The majority of in-river recreational uses upstream of the NSBLD were not identified or evaluated in the analysis of the presented alternatives. While an effort to evaluate some of the impact on some of the upstream docks was undertaken, this narrow focus does not include most of the current recreational uses and was based upon inaccurate modeling that grossly underestimated the degree of lowering predicted by the Corps's hydraulic modeling.

Recreational considerations in the Corps's evaluation of the alternatives appear to have only included physical impacts to a select group of docks resulting from reductions in water surface elevations, with no consideration of the cost consequences. However, other recreational uses and considerations including but not limited to those outlined below are significant and do not appear to have been adequately considered in the evaluation of the alternatives and (presumably) their formulation.

The Cities request that a much more complete inclusion of recreational uses and related economic impacts analysis be undertaken and used in the development and evaluation of alternatives.

The City of Augusta requests that river corridor planning efforts as outlined in the River Vision Plan be addressed in the development and evaluation of alternatives. This includes the development, refinement, and evaluation of alternatives to the US Army Corps of Engineers' (Corps) design for the New Savannah Bluff Lock and Dam (NSBLD), fish

passage, and adjacent NSBLD Park. The City requests that the NSBLD Park be maintained in area and elevation to keep it as a valued community amenity and maintain its rich history. Maintaining this park as such, strictly prohibits the proposed “floodplain bench” included in many of the presented alternatives including the Recommended Plan.

1. Recreation, Uses, and Economics not Adequately Considered.

Planning, design, and alternative evaluation should include issues such as: level of activity around the water’s edge both for current conditions and anticipated future users; frequency and range of flows within the recreational river; and potential consequences of accidentally falling into the water (low water and high-water conditions) and consequences of inadvertent navigation or entrainment in the rock ramp fish passage.

The use of the river in the greater Augusta area includes the pool from the shoals near the Augusta Canal intake to the NSBLD and continuing downstream through the lock. While not currently operational, the lock has been used recreationally by residents for many years.

Recreational uses in the upstream pool are highly reliant on the maintenance and stability of the water surface elevation currently provided by the NSBLD and its on-going operations. Recreational activities that Augustans currently enjoy on and along the banks of the river include: viewing, fishing, skiing, wake boarding and wake surfing, motor boating, rowing, kayaking, whitewater rafting at the shoals, long-term docking of house boats, and hosting of various water dependent events. Additionally, access to the water and water’s edge other than that related to use of docks is critical to these recreational uses. Access to the water’s edge will be made much more difficult as the increased variation will make the immediate area slippery and muddy and the banks will be steeper and/or higher above the waterline. This particularly impacts fishing - a critical component of everyday life for many Augustans and a significant recreational and economically important use of this reach of the river.

Identification and adequate consideration of the impacts to most all these activities and user groups was not evaluated in the Corps’s Draft Report and supporting alternative analysis. It is evident that lowering of the pool over a wide range of flows will negatively impact these activities. Depths will be reduced, useable surface area will be reduced, more obstacles will be exposed, and access to the water’s edge will be significantly inhibited. In addition to overall decrease in pool depths, variation of the water surface will occur much more frequently and additional negative impacts to most if not all these activities as well as bank stability, aesthetics, and maintenance will result. Increased variability in the water surface elevation was not considered in the development and evaluation of the alternatives as it relates to these activities, issues, and future river corridor planning.

Decreased depths and increased variability in the water surface elevations will negatively impact fishing, skiing, wake boarding and wake surfing, motor boating, and rowing, and operations of safety craft – particularly during the hosting of various water events. The only recreational metric applied to depth was 2 feet – and this was as it relates to accessing docks. This criterion is not appropriate for many if not all the activities listed above. Furthermore, the analysis, determination, and application of this forecast is not accurate, thorough, or appropriate. This is described below in the

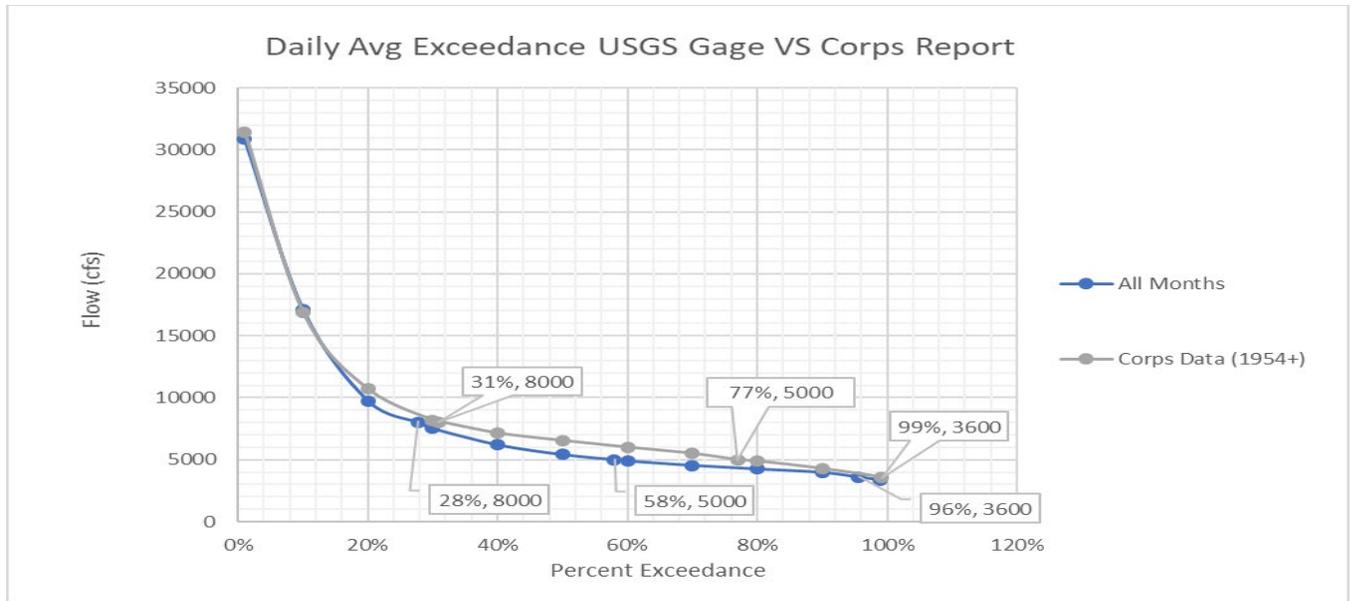
section entitled *Prediction on Water Surface Elevations and Decreased Depths*, in some of the Appendices, and elsewhere.

It is intuitive that decreased depth also results in increased velocities in the pool. This is also theoretically evident by the application of the equation $Q=VA$ or $V=Q/A$ or $V=Q/(d*w)$, where V is the velocity in the pool, Q is the flow in the river, and A is the cross-sectional area of the river, d is the average depth in the river, and w is the average or effective width at that depth. Increased velocities result in several safety issues including increases in the risk related to abrasion or impingement from being swept over or impinging upon various obstacles, lodged debris, rock or structure on the invert, and over the rock ramp fish passage as included in most of the alternatives presented by the Corps. This concern is heightened by a demonstrated safety issue – i.e. one that has already been exhibited. It has been reported that there have been injuries or drownings when people in pool have inadvertently gone over the existing dam. One such case in 2008 occurred when a woman died by going over the lock and dam on her jet ski. Designing features in a river with the objective to create low hazard conditions can help prevent accidents like these from occurring.

People that inadvertently fall in the river (exacerbated by worsened conditions along the water's edge resulting from more variation in pool elevations as described elsewhere) will have a higher tendency to be swept downstream and encounter more difficulties exiting the water. Consideration of these types of safety issues would impact many aspects of the design of the rock ramp including type, gradation, and size of rock; pool (recovery zone) spacing, widths between constrictions, etc. Sufficient detail, discussion, or analysis to evaluate these and other potential hazards is not discussed, included in alternative evaluation, or even presented.

2. Evaluated Flows and Frequency

As stated on page 49 of the Draft Report, flows used to evaluate project impacts (except to public water supplies) was 5,000 cfs. The “normal conditions” flow rate used in the descriptions of the presented Alternatives was 5,000 cfs. It is not exactly clear why this was chosen as no clear reasoning is given. As stated in the Draft Report and indicated on the figure below, flows that occur between 5,000 cfs and 3,600 cfs occur a noteworthy part of the time. Figure 7 of Appendix A of the Draft Report shows that flow in this range occurs about 25% of the time. Flows in this range occur more frequently during the several months in the summer, when recreational use is highest. Recreational uses, impacts on docks, etc. outlined herein occur a significant time during this flow range, and it is not justified to ignore them in the development, analysis, and selection of alternatives. Flows occurring in the range of 3,600 and 5,000 cfs should be included and evaluated in the development, presentation, evaluation, and selection of all alternatives.



3. Prediction on Water Surface Elevations and Decreased Depths

As further detailed elsewhere, the estimation on the decreases in depths presented by the Corps are inaccurate and insufficient. As decreased depths are more frequent and perhaps rapid fluctuations in depth negatively impact identified issues and recreational activities, the impacts have not been adequately determined.

Shortcomings in the prediction of depths include:

- The modeling used to estimate impacts to these docks is flawed and greatly underestimates the amount of the decrease in the pool elevations that would result for the provided alternatives. This was made apparent during the drawdowns and survey on February 15, 2019.
- Depths were evaluated at a river flow of 5,000 cfs. As presented above, this flow rate is not appropriate.
- Depths predicted and provided are based upon a bathymetric survey that the Corps conducted in January 2018. It is not clear in the Draft Report that the level of detail of this study is sufficient to evaluate the impact of lowering the water surface and increasing the variability (particularly during lower flows) is adequate to evaluate these recreational activities. Since most of these activities were not considered, concern as to adequacy of the bathymetry used in the development, analysis, and evaluation of the alternatives is justified.
- Evaluation of the increase in frequency and degree of variations in the water surface was not provided. Pool elevations and resulting depths that vary more often and more drastically over time further decrease the recreational value of the pool.
- The decrease in depths is more severe than predicted in the Draft Report because the historical record of the stream gauge data indicates higher water surface elevations than used in the Draft Report for existing conditions.

- No evaluation of the increased deposition due to removal of the gates was provided. (Qualitative opinion was presented supporting a conclusion of no significant impact, however based upon extensive multi-dimensional sediment modeling efforts on a recent project on another river with a sediment-trapping upstream reservoir, the Cities do not accept this foregone conclusion with no supporting analysis.

4. Impacts to Docks

Most of the analysis and results as provided on all but the first page of Appendix G are not accurate nor representative of the impacts that would result with implementation of any of the proposed alternatives. Moreover, the analyses consider the No Action Alternative as the base line condition; when, in fact, the existing water levels are higher. Consideration of the impact for adjacent land owners to install new docks was not made, nor were the costs for these significant changes accounted for.

5. Impacts to Hosting Special Events

The Draft Report does identify the following Special Events that are or have recently been hosted in or along the Savannah River:

- The Ironman 70.3
- Head of the South Regatta
- The Augusta Southern Nationals
- Southeast Masters Rowing regionals

The Augusta Convention and Visitors Bureau reports that these events have a combined economic impact of \$11.5 million.

The Corps's Draft Report states that:

"The Savannah River Basin Water Control Manual would be updated to increase flows from J. Strom Thurmond to meet water surface elevations required for the special events except when in drought contingency operations and flood conditions. As a result, the Ironman 70.3 and Head of the South Regatta would not be adversely impacted by any of the alternatives outside of periods of drought and flood."

However, the different alternatives would require greatly differing releases in flow and these releases are much more (due to the hydraulic modeling underestimation of water surface elevation) than would have been anticipated. Consideration of these issues would impact related costs and increase the probability that the events could not be held due to insufficient water supply. Furthermore, determination of the release rates, costs for these releases, and prediction of the frequency when these events could not be held were not provided in the Draft Report.

Also, this operation could increase the flow rate which would increase the overall downstream velocities, and change the velocities across the event cross-section, changing the watercourse from lake-like to riverine. This would negatively impact all races or timed events. For example, it would give an advantage here and a disadvantage there, depending upon which "lane" a competitor might be assigned to. The predicted increase in downstream velocities were not provided and could increase a variety of safety issues.

6. Impacts to Larger Boats & Commercial Operations

Patriot Boat Tours operates a larger pontoon boat. There may not end up being enough depth at the main tour boat dock at Tenth Street to accommodate tour vessels. There may be additional commercial or private operations of larger boats that would draw more water or otherwise be reliant upon a deeper pool. These were not identified in the Draft Report.



Figure 5: Princess Augusta

7. Impacts to the NSBLD Park

Alternatives that include excavation of the Park for the “floodplain bench” or overflow channel including the recommended 2-6d alternative have a significant negative impact on the NSBLD Park. These alternatives would effectively render the park useless or nearly useless and it would become a maintenance liability. This park has a historically significant history and is utilized by many residents. These impacts were not considered as part of the Draft Report, including Appendix G - Recreation. Inclusion of these negative impacts must be considered in the development, evaluation, and selection of the alternatives.

In 1915 the Augusta Levee was constructed to control flooding in downtown Augusta, Georgia, and expanded in 1936. Initially, the Levee greatly restricted the public’s access to Augusta’s riverfront from downtown to the mouth of Butler Creek, but with the 1937 completion of the NSBLD, the Corps’s public Park provided direct access to the Savannah River.

The Corps’s creation of this public space allowed the locals a place to interact with the river for these many decades. It has been a point of access for fishing, boat launching, and a gathering place for the entire community. Indeed, its importance to the City, especially those who reside in South Augusta cannot be understated.

A key historical component to the inclusivity of the Park showed itself during the 1950s-1960s when the majority of the City of Augusta was segregated, but the Park was not. It has served as a gathering place for all of the community’s citizens for over 65 years. Its pavilions have provided the location for hundreds, if not thousands, of family reunions, birthday parties, and civic meetings.

The NSBLD Park has been one of the main access points for bank fishing since at least the early 1950s, and maintaining that access is imperative to the surrounding community to foster inclusivity and prevent gentrification. Many of the local citizens regularly fish along the river bank in the park, which is an essential element to their daily lives. In short, the park is a significant cultural feature of Augusta.

The NSBLD Park sits on the confluence of two emerging bike/nature/walking trails whose development is ongoing. The levee, which starts above the remaining shoals 17 miles upstream from the Park, creates an elevated path and contiguous trail through downtown Augusta ending at the Park. Over three-quarters of this levee has been

converted into a trail with remaining miles slated for conversion in the next few years. The Butler Creek trail starts at Lombard Mill Pond near Fort Gordon Gate 5 and running the length of the creek ending at the NSBLD park. That trail is 20% completed and is slated to be finished in coming years.

The Corp has recognized a portion of the historic importance and sense of place the Park has provided. As stated in the Draft Report:

‘The NSBLD Park provides visitors a place to enjoy the outdoors by providing a place to fish, boat, and have picnics. The project area is in an undeveloped area on the Georgia side of the project surrounded by trees and a couple of open field areas for recreational opportunities and looks out to privately-owned undeveloped farmland on the South Carolina side with the Savannah River in between. The historic Lock and Dam structure is also a unique feature people can visit while visiting the area.’

The Draft Report however did not place economic value or considerations of quality of life on the use of the park or the significant history of the park to Augusta in their development, analysis, economic analysis, and selection of the presented alternatives. The NSBLD Park is an amenity that should remain with the community! Future plans must embrace the Parks importance and the benefit it has provided must be recognized and maintained for future generations.

The Park is decimated under the Recommended Alternative and other alternatives that include a “floodplain bench” or over-flow channel. These alternatives effectively render the park useless or nearly useless and it would become a maintenance liability.

As an example, Alternative 2-6d - Fixed Weir w/ Dry Floodplain would have a significant impact on the Park as it includes an excavated floodplain bench cut into almost the entire park to pass higher flows, thereby increasing the frequency of flooding, and impacting the uses, functioning, and safety of users.

The Park is rendered useless in the alternatives having the excavated floodplain bench for a number of reasons. Shade trees, landscaping, structures would likely not be located in the floodplain bench because of unsustainable maintenance efforts and negative impacts on flood conveyance. One of the most significant reasons is due to the frequency of flooding and resulting safety, wet and muddy conditions. Flooding can come from at least three separate sources:

- a. Flooding from the adjacent wetlands, Butler Creek, and flooded areas tributary to the floodplain bench – that is overland and ground water flow from these upland areas to the river would be intercepted by the floodplain bench. This lowered area (due to increased head) would increase these flows and the frequency at which they occur.
- b. Flooding from the downstream river commonly referred to as “tailwater” or “backwater.” The Figure entitled Tailwater, below, is based upon the hydraulic modeling by the Corps. The Draft Report states that the floodplain bench would be lowered to elevation 110, however inspection of the HEC-RAS model indicates a much lower elevation of the bench of about 107.7. The existing elevation of the Park is about 117, which corresponds to a flow of over 35,000 cfs or about 0.5% of the time. The 110 elevation corresponds to a flow of about 24,500 cfs and a frequency of about 4% of the time. The 107.7 park elevation (from the model) occurs at a flow of about 18,500 or 8.5% of the time.

In other words, the Park will flood due to the tailwater about 8 times more frequently using the elevation stated in the Draft Report, or over 16 times more frequently based upon the floodplain bench elevation in the hydraulic model.

Either of these estimates in the increase in flooding frequency is very significant. For comparison, various cities and drainage districts with extensive experience of maintaining and operating trails, recreational facilities, and river front park amenities have criteria that sets the elevation of the facilities at the 10-year event – in this case about 60,000 cfs. The lower extreme in maintaining recreational facilities such as parks, trails, etc. is often the 2-year event or 33,000 cfs. The existing elevation of the Park is on the lower end of this range, and it is therefore critical not to increase frequency the Park area gets flooded. The modeled elevation of the floodplain bench floods at 18,500 cfs which is well below the 2-year event and floods about 8.5% of time which results in a frequency that is not practical to maintain for recreational park related activities due to the frequent wet and muddy conditions, accumulation of debris and sediments, and safety concerns.

The difference in the elevation of the floodplain bench stated in the Draft Report of 110 and the modeled bench elevation of 107.7 is a significant discrepancy which would impact the development and evaluation of alternatives that account for impacts to this Park.

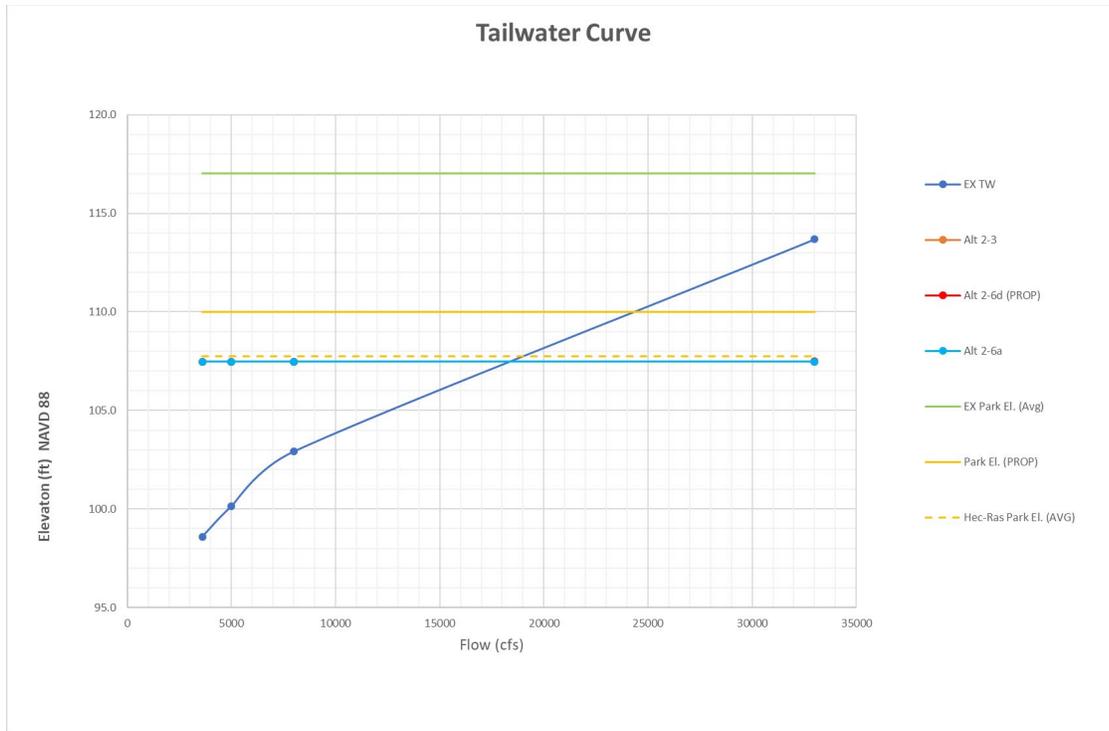


Figure 6

- c. The third source of flooding that the Park or floodplain bench is from river water upstream of the rock ramp flow essentially around the (crest) of the rock ramp. This type of flooding is more damaging and dangerous than the other two types because of the velocity of the flow and scour potential. Based upon hydraulic data in the Draft Report, the floodplain bench in Alternative 2-3 would flood almost all the time and would flood about 70% of the time in the recommended Alternative 2-6d. Obviously, this would be the predominant source of water in the “Park” or floodplain bench.

The term “floodplain bench” does not reflect the morphologic or any other reasonable interpretation or definition of how this impacted area of the Park would function. A floodplain bench typically is elevated at flood elevation at bankfull conditions. Bankfull conditions usually occurs between the 1-year and 2-year event or about 16,000 cfs to 33,000 cfs. This range is much higher than what results in the Alternatives with a floodplain bench. The Draft Report states that the “the bench would be grassed or rock lined to prevent erosion. Either of these surfaces in these wet conditions would not be conducive to recreational use. Given these conditions including the aesthetics and (lack) of recreational usage, more appropriate terms for the “floodplain bench” are a spillway or overflow channel.

The floodplain bench renders most of the park unusable. The flood plain bench hinders access to the fishing areas for residents, removes the open field that is used by residents for special gatherings and severely limits access to the river. These alternatives do not evaluate the future recreational use of the park. These alternatives eliminate the historic uses of the Park outlined above.

All the alternatives presented “cut” or encroach upon the Park and reduce its size. Alternative development, evaluation, and selection should preserve or effectively mitigate area removed from the Park.

It is readily apparent that the floodplain bench would be totally unusable for most any recreational activity, would likely look and act like a spillway or channel, be rock-lined, and/or become a maintenance nightmare. Alternatives that increase the flooding of the Park should not be considered further. Only Alternative 1-1 effectively maintains the Park elevation and flooding frequency thereby allowing the potential to preserve its recreational and historical significance to Augustans.

8. Summary - Recreation, Uses, and Economics not Adequately Considered.

Appropriate consideration and inclusion of all recreational uses and their economic impact would influence the development, evaluation, and selection of the alternatives. These efforts should be based upon accurate predictions in water surface elevations and evaluation of the frequency of the variations in the water surface elevations.

Based upon information and analysis provided in the Draft Report, only Alternative 1-1 should be considered as it comes close to adequately addressing the issues and impacts outlined above. As presented, Alternative 1-1 lowers the pool elevation and decreases depths, however it may be possible to adapt Alternative 1-1 to meet the historic pool elevations. This can only be ascertained once the hydraulic model is calibrated and validated so it can be reliably used to assess the very important prediction and conclusions regarding the prediction of the pool elevations.

9. River Vision Plan for the Savannah River

Development, analysis, evaluation and selection of alternatives should include and support this planning effort and the economic and quality of life impacts it will provide. Alternatives at the NSBLD need to address pool elevations, safety, and the intended uses and development of the NSBLD Park, trails, and recreational uses. Only Alternative 1-1 currently comes close to integrating with the objectives and requirements reflected in this planning document.

The City of Augusta has undertaken a *River Vision Plan* for the Savannah River which extends from downstream of the New Savannah Bluff Lock and Dam (NSBLD) through Augusta and the natural shoals to Thurmond Lake. (A copy of the plan is presented in Appendix F.) In addition to creating highly recreational destination-oriented whitewater venues at the NSBLD and two other dam sites, the plan would open over 36 miles of a water trail starting from Thurmond Lake. The culmination of this water trail would be at the proposed whitewater venue integrated into NSBLD Park. The plan shown in the following figure, includes other sites with programming and activation elements focused on publicly owned property along the river within the city limits of Augusta. Identified activities and venues include a whitewater course, ropes course, zipline, water taxi, river cruise, fireworks display, fishing access, boat access, event pavilion, gathering spaces, destination playground, trails, outdoor markets, disc golf course, and historic markers. These rely on the pool created by NSBLD, recreational passage and low-hazard conditions at and around the NSBLD, and preservation/integration of the park north of the NSBLD – referred to here as

NSBLD Park. These are further described in the *River Vision Plan* for the Savannah River for the City of Augusta.

This plan includes an outdoor adventure sports park including a whitewater recreation bypass in conjunction with the removal of NSBLD. Inclusion of a whitewater recreational venue would create a major boating attraction drawing visitors throughout the region and shape the City's image. While somewhat different than the venue in Columbus, Georgia (rated as One of the Top Twelve Man-Made Adventures in the World by USA Today), it alone could create a similar economic impact and improvement in quality of life. Combined with other key features in the overall River Vision Plan for the Savannah River, the economic impact would further increase the economic and recreational impact of the proposed NSBLD Adventure Park. This design would incorporate fish passage, whitewater features, and other amenities and ideas suggested by the community. The Park is to be a place for picnics, family and group events, fishing, and outdoor and river recreation, as it has been since its inception.

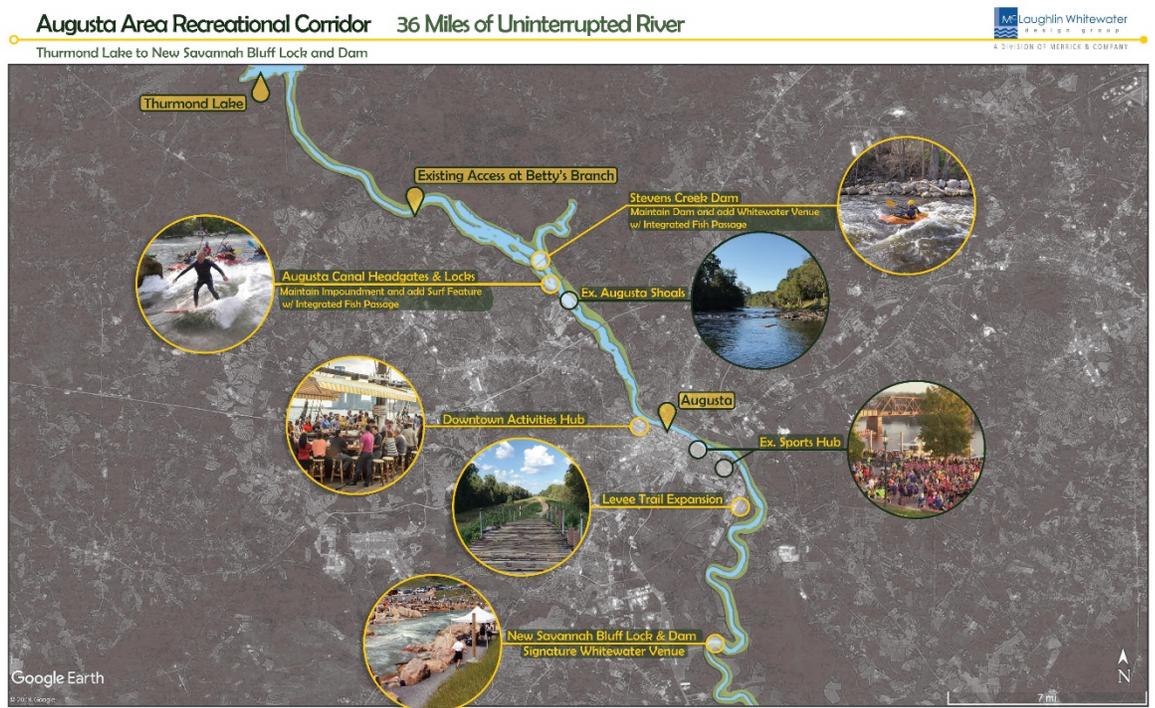


Figure 7 River recreation plan from Thurmond Dam to New Savannah Bluff Lock and Dam.:

Economic impacts related to this plan are significant. The recreational potential of the proposed amenities and improvements outlined in this planning document are judged to be greater than the extremely successful recreation and river restoration project constructed in Columbus, Georgia, on the Chattahoochee River. The Savannah River has more flow, the recreational reach is much longer, and this reach is more accessible to densely populated areas. Economic impacts are further discussed in the memorandum, "Economic and Quality of Life Impacts Related to the Proposed Savannah

River Recreational Improvements,” which is included as a part of the *River Vision Plan* in Appendix F.

10. Integration of the NSBLD Alternatives with Upstream Planning

Issues related to the elevation of the pool outlined in the existing recreational uses section above are heightened by the far-reaching River Vision Plan.

Planning, design, and alternative evaluation considerations should consider issues such as: level of activity around the water’s edge both for current conditions and anticipated future users; frequency and range of flows within the recreational river; and potential consequences of accidentally falling into the water (low water and high-water conditions). More specific issues to address include but are not limited to the fish passage, piers or mid-stream obstacles, all types of bank armoring, woody vegetation, debris and debris accumulation, etc.

It has been reported that there have been drowning accidents resulting by craft being swept over the dam. Additionally, it is highly likely that people will be drawn to the proposed in-channel rock ramp fish passage. Given the history and future interaction with recreators, public safety must be a primary design objective and considered in the development and subsequent evaluation of the alternatives. Inclusion of a whitewater bypass course into the New Savannah Bluff Lock and Dam Park is an important element in addressing safety concerns related to upstream and local river recreational use. Inclusion of a whitewater bypass is mostly independent of the various Alternatives for the NSBLD presented by the Corps.

11. Integration of the NSBLD Alternatives with the Proposed NSBLD Park

The presented alternatives do not consider future recreational use of the NSBLD Park. The citizens of Augusta would like the opportunity to utilize and enhance the Park and turn it into a community space for all ages to experience the river and the surrounding greenspace. The City of Augusta has funded the *River Vision Plan*, which includes the park as a future outdoor recreational hub, complete with trails, climbing opportunities, zip lines and even a whitewater course. The vision for the park includes additional programming for new music venues, community events and food truck opportunities. In short, the future recreational hub envisioned by the study paid for by Augusta was not considered by the Corps.

The overarching goals of planning and development of alternatives create connectivity among a growing metropolitan area, and to provide opportunities for enhanced recreation and appreciation of our natural resources in ways that will contribute to improving the economy, pride, and quality of life for locals and visitors. There are additional potential projects that could tie into the future recreational hub at NSBLD, creating a regional recreational corridor that begins at the Augusta Shoals upstream and ends at the NSBLD adventure park. This would be the first of its kind in the nation and have compounding positive economic impacts for the region.

12. Fishing

Fishing is a critical component of everyday life for Augustans that live near the New Savannah Bluff Lock and Dam Park. People fish at the landside of the lock, using the ready access to and amenities in the Park. Keeping the Park available to the public,

along with safe access for fishing should be considered and weigh heavily in the evaluation of recreational uses. Fishing however does not appear to be included in the development or evaluation of the presented alternatives. An alternative that keeps the Park available to the public, along with safe access for fishing is essential. Alternatives that remove or diminish the Park are unacceptable.

13. Criteria for Recreational Value for the Park

- Maintaining the current pool elevation
- Keeping the park intact with opportunity for enhancements
- Access points to the river for fishing, boating and other in-river recreational activities
- Improved safety and navigability of the river
- Connectivity between the Park and nearby trails (Levee Trail and Greenway systems)
- Recognition as a local historical landmark

14. Integration with the Whitewater Passage and NSBLD Alternatives

Low-hazard passage of recreational whitewater craft through or around the rock ramp or existing lock and dam should be considered in the development, refinement, and evaluation of the alternatives.

Passage of boats around the NSBLD has historically been provided by the lock. This is evidenced in a 2014 article written by the CORPS, where it was noted that the city operated the lock a few dozen times a year for recreational boating. Although the whitewater passage is of a different type, it would mitigate the economic and recreational loss associated in all the presented alternatives with the elimination of the lock.

The recreational and regional economic importance of providing whitewater passage at the NSBLD is further increased as outlined in *River Vision Plan*. With the completion of key elements of this plan, a navigable water trail of 36 miles in length would be created with the whitewater bypass at the NSBLD being a vital part of that plan.

There are several different approaches to providing passage. One approach would be to design the rock ramp to be low-hazard, thereby providing passage within the rock ramp. This was not selected in the *River Vision Plan for the Savannah River for the City of Augusta*; however, if complexities arise with a bypass configuration, a rock ramp designed to be low-hazard to recreational users or inadvertent swimmers should be considered.

While some type of recreational or safety oriented navigational whitewater bypass could likely be integrated into the presented alternatives, the practicality to integrate a recreational whitewater venue of national caliber with broad economic and quality of

life improvements with this project will depend (in part) upon the alternative selected and consideration of the recreational uses outlined above.

Alternative 1-1 would readily support a wide range of options for inclusion of a major boating attraction drawing visitor throughout the region and shape the City's image as described in our report and previous presentations. Note that Alternative 1-1 is included in the figure showing the whitewater venue in the *River Vision Plan*.

A whitewater bypass may be able to be integrated into Alternatives with an excavated floodplain bench or in Alternative 2-8. However, the primary participants at this type of venue are spectators and the floodplain bench would greatly inhibit viewing and access due to frequent flooding and lower ground elevations. As noted elsewhere, the Recommended Plan and other alternatives with a floodplain bench would virtually eliminate the recreational value of the remainder of the park within the footprint of the floodplain bench.

H. Impacts and Costs for Temporary Works During Construction.

The Draft Report does not identify temporary structures needed to implement any of the alternatives, nor does it outline a plan for the construction sequencing, dewatering and water level maintenance or control. These efforts have significant cost and physical effects, and additional analyses are needed to develop, analyze, cost, evaluate and select a recommended plan.

Significant structures, such as coffer dams and divider berms will be needed during construction, possibly as tall or taller than the existing dam. Large bypass channels and/or widening of the river adjacent to the rock ramp will also likely need to be constructed around the proposed rock ramp dam through the NSBLD Park and along the south bank to convey the large and continuous flows during construction. The costs and environmental impacts and impacts created by mitigation measures will be large. There will be disturbances to the banks, the park, large volumes of upstream sediments to handle. Extensive pumping may be needed, settling ponds to mitigate water quality impacts are typically required, and disturbances related to the large coffer dams

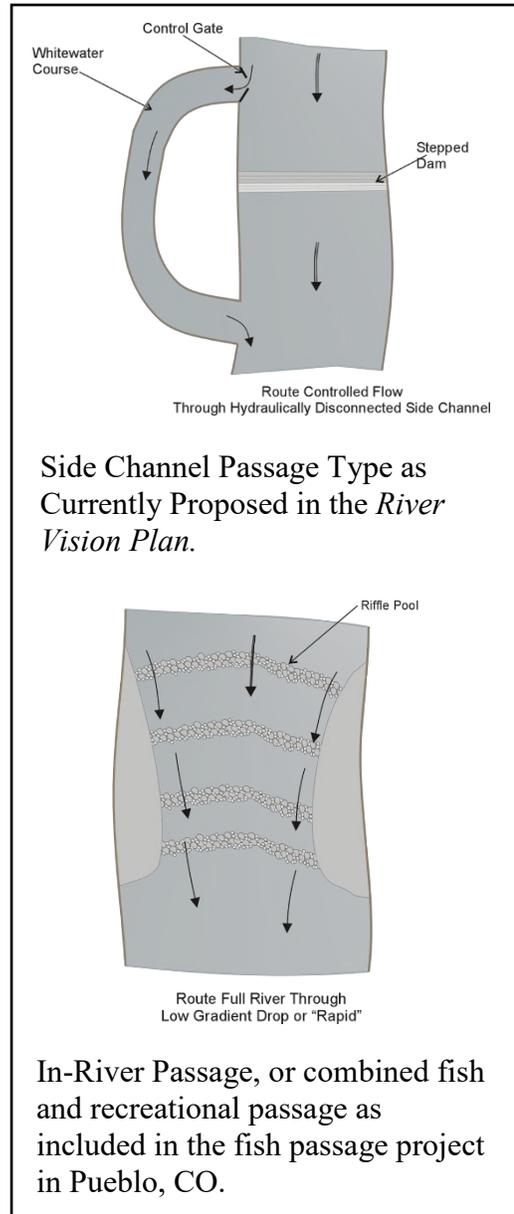


Figure 8: Schematic Types of Recreational Passage

constructed in flowing water will occur. Given the large river with continually flowing conditions, construction efforts and costs related to these water control and dewatering efforts will likely cost as much or more than the construction of the rock ramp. In other words, the cost for these efforts will likely be much greater than the cost of the rock ramp (as identified) if it and its support substructure were constructed in a field or temporarily dried riverbed. This has been the case in many rock structures built in rivers, such as in Columbus, Georgia, which did not have nearly the amount of continuous flow to deal with.

I. Real Estate

The Cities and County are concerned about the effects of the project on the real estate that fronts on and lies near the seventeen-mile-long Lock and Dam pool. There are upward of 446 individual privately-owned parcels of land fronting on the pool, to say nothing of the nearby parcels benefitting from proximity to and views of the water. The diminished value of the waterfront properties and the hindrance effect on ongoing and planned redevelopment projects caused by the lowering of the pool must be considered a cost of the project and compensation, paid. The Draft Report ignores these effects and is thus deficient. It must be withdrawn, corrected, and reissued for public comment.

The Corps arbitrarily omitted considering all alternatives by omitting any fish passage or construction on the South Carolina side, choosing instead to obliterate a functioning park to avoid purchasing a few acres of land.

The lands along the river and near it have been the focus of revitalization and economic development efforts on both sides of the river for many years as established by riverfront master plans beginning in 1981 on the Augusta side and 1996 on the North Augusta and Aiken County shore. The Cities have been pursuing exciting new projects that create homes, businesses, and quality of life improvement opportunities for its citizens, as well as value for the owners of the properties, totaling many hundreds of millions of dollars. These values are jeopardized by the lowering of the pool elevations, where docks and boats are grounded, viewsheds blighted, and access to the water curtailed. This translates into immediately reduced real estate values where the water use and access formed large percentages of the dollar value of the landward property. That portion of their real estate value is instantly gone and may constitute a taking.

Typically, Corps's reports on water resource projects would consider damages from flooding (or water level lowering) in terms of stage-damage curves, which are used to estimate dollar values of projected damages. The Draft Report is deficient in this respect and does not consider any monetary damages to real estate from the proposed project.

The Corps asserts that the project is limited, "to the extent possible, to land that is currently owned by the federal government. Several of the project alternatives considered were developed based on the maximum project footprint."¹⁷

J. Sedimentation

The Corps fails to address the long-term sedimentation of the pool over the life of the project, which will ultimately, cause multiple problems upstream, silting-in and impairing

¹⁷ Draft Report Appendix E, Real Estate, Section 1.18, p. 9; and Appendix A, Engineering, revised version 2/22/2019 Section 6.2 Real Estate accessed 4/9/2019.

the operation of water intakes, reducing flow cross-sections, raising flood levels, and other negative effects. The Corps must consider the beneficial effects of choosing an alternative that does not create upstream silt deltas, such as Alternative 1-1.

The Draft Report also fails to consider adequately the movement of existing silt masses downstream and the accompanying exposure of various types of deleterious materials. The Draft Report lacks consideration of the issue of dealing with legacy toxic sediments that will likely be disturbed by exposure along and within the pool and during the construction on the site. The Corps must address the presence or absence of legacy toxic chemical composition and potential fate and transport of those sediments and must provide a plan to facilitate sediment stabilization of newly exposed sediment sources.

1. Siltation of the Pool Over Time

The Draft Report aptly points out that there are three large multi-purpose reservoirs owned by the Corps of Engineers upstream that act as sediment traps for the Savannah River downstream, and also that the Stevens Creek Dam and the Augusta Canal Diversion Dam have the same effect. It should be noted, nevertheless, that there are many streams that enter the river downstream of Thurmond Dam and that the pools of Stevens Creek and Augusta Canal dams are nearly full of sediment.

The erection of a fixed weir will forever halt the transport of bed-load sediments and trash, which are now released continuously by design at the under-flow gates of the Lock and Dam. Ultimately, the pool will fill in with silt, albeit over what might normally be considered a long time, but not so long a period when taken in the context of the 100-year time planning horizon of the Draft Report. A full-scale example of this phenomenon is at the Stevens Creek Dam just a few miles upriver from the pool. Built in about 1915, its impounded pool is virtually filled with silt, so that emergent wetlands cover many acres of what used to be the middle of the Savannah River. Such a fate will ultimately occur, given enough time, at any fixed weir at New Savannah Bluff, and will eventually extend upstream to impair water intakes, docks, etc.

The Corps Draft Report also points out high shoaling areas at two locations: on the North Augusta side of the river behind the training wall (incidentally, built by the Corps of Engineers itself to prevent shoaling) and near the Sand Bar Ferry Road area.¹⁸ This latter area includes the head of Blue House Bar, which was the low-flow head of navigation in drought times before the New Savannah Bluff Lock and Dam cured the navigation problem and made the shoaling at this location no longer a problem. These areas will continue to accumulate silt over time, as described above, and will become a problem once again, especially if the pool levels are lowered.

2. Toxicity and stabilization of newly exposed sediments

Pool drawdown showed the extent of new sediment that would be exposed as a result of pool elevation changes. Those sediments will be exposed to new wave lapping and rainfall/runoff erosion processes. It is unclear whether those newly exposed sediments contain legacy pollutants and what the fate and transport of those pollutants may be. Appendix E contains a table of Sediment Chemistry Data taken from samples in 2006-2008 from multiple locations along the Savannah River; RM 202, RM 198, and RM

¹⁸ "Sedimentation Evaluation for SHEP Fish Passage," August 9, 2018, Draft Report, Appendix A, Attachment 3.

190 are all within the Lock and Dam pool section. Newly exposed sediment will impact water quality in the form of turbidity and suspended sediments until the newly exposed sediment is stabilized by vegetation. In addition, any legacy toxic components could be mobilized as a result of erosional forces, this could have a significant impact on drinking water supply for the Max Hicks drinking water plant (intake below Augusta Marina), on aquatic biota, recreational activities, and on sporting activities such as the Ironman triathlon. Is there a plan to determine legacy toxic chemical composition and potential fate and transport of those sediments? Is there a plan to facilitate sediment stabilization of newly exposed sediments with vegetation by seeding/or planting these newly exposed areas?

K. Aquatic Resources

1. Impact of Dam Alterations on Savannah River Fisheries

Currently, NSBLD provides appropriate hydrologic forces to maintain an approximately 50' scour pool on the downstream side of the dam. This scenario provides unique physical and geological forcing necessary to maintain a mid-stream gravel bar located approximately 600 ft downstream of the dam and scour pool. This geological and physical forcing has been in place for over 90 years, since the dam was constructed, and is considered the contemporary "new normal" for biological species in the Savannah River with life spans of 90 years or less. It is expected that all alternatives for fish bypass/NSBLD modification will alter the necessary erosive flows and sustaining dynamics currently maintaining this gravel bar, resulting in alteration of this important spawning habitat (CORPS, 2018): the extent of impact is not known.

Experts that have studied Savannah River fisheries have concluded that several endangered species rely on the gravel bars below NSBLD for suitable spawning habitat. Grabowski and Isely (2006) showed that the endangered (Georgia listed) robust redhorse relied on the only two known gravel bars below NSBLD for spawning and showed a high degree of site fidelity for spawning at those two sites. Freeman and Freeman (2001) concluded that the endangered robust redhorse uses gravel bars exclusively with the bar below NSBLD as a critical habitat. For Atlantic sturgeon, NOAA-NMFS designated the gravel bar below NSBLD as an endangered habitat critical to support spawning of Atlantic sturgeon in 2017 (NMFS, 2017; USACE, 2019).

Shortnose and Atlantic sturgeons as well as Robust redhorse have keen site fidelity to spawning grounds. Kynard et al (2016) indicated that shortnose sturgeon return "home" to the same reach with 100% site fidelity and spawn annually at the same small sites. Less is known about the Atlantic sturgeon but they are also believed to have high site fidelity in southeastern rivers (Collins, et al., 2000). Robust redhorse are known to have high site fidelity in the Savannah River Basin (Grabowski and Isely, 2006).

In all rivers where shortnose sturgeon studies have been conducted, it was shown that these fish spawn at one reach, the most upstream reach used during their life history (Kynard, et al., 2016). Kynard et al (2016) also suggested that female shortnose sturgeon that have historically spawned below dams are more genetically hard-wired to home to their historical spawning grounds. Finally, Kynard et al. (2016) suggested that even if river rapids exist, which are believed to be the favored spawning

conditions for shortnose sturgeon, this does not mean that they will seek those areas if that individual imprinted at a different reach during the early life stages.

No matter the option chosen for NSBLD, either rock ramp or bypass, it is without doubt that the physical and geological forces currently maintaining the mid-channel gravel bar will be removed and the imprinted/endangered habitat will no longer be available as spawning habitat for these endangered species. Hypothetically, if these fish do not use the rock ramp, either as a bypass or in-river structure, to move further upstream during spawning migrations to the Savannah River shoals area (the presumed preferred habitat), it could cause a devastating collapse of the Savannah River populations of Atlantic sturgeon, Shortnose sturgeon, and Robust Redhorse by significantly reducing spawning success at either the gravel bars or shoals reaches.

In 2013, the Cape Fear rock arch ramp was officially unveiled. This structure replaced a similar low head dam structure, like NSBLD, while leaving in-place a lock system. This would be an excellent opportunity to learn how successful it has been regarding fish passage. Unfortunately, NCDNR is not permitted to tag the endangered Shortnose or Atlantic sturgeons and have only been tracking migrations of shad, herring, and striped bass. Therefore, there is no data available on passage for the endangered sturgeons. There has been one observation of an Atlantic sturgeon above the rock ramp structure but there is no evidence that it passed the rock structure as opposed to passing as a result of lockage.¹⁹ Furthermore, the rock ramp has been successful in passing shad and herring but not striped bass so engineers, scientists, natural resource managers, and NOAA Fisheries are discussing future adaptive management strategies in an effort to facilitate passage of all species.²⁰

If the primary goal of the NSBLD alteration is to allow passage of shortnose and Atlantic sturgeons beyond NSBLD, then **no matter the design alternative chosen, Corps, NOAA-NMFAS, and GPA should take an adaptive management approach and ensure successful passage and spawning behavior of these fish. Sufficient funds should be allocated for monitoring fish migration patterns to either reach remaining shoals above NSBLD or spawn at any remaining gravel bars that may exist after construction below the dam and sufficient contingency funds should be set aside to make appropriate alterations to the chosen alternative until successful spawning behavior has been proven with reliable, peer reviewed data at either remaining gravel bars or within the shoals.**

2. Impact of dam alterations on dissolved oxygen concentrations

The Savannah River is not meeting state standards for water quality due to low dissolved oxygen concentrations in the Savannah Harbor. As a result, a Category 5R alternative restoration plan was developed in order to bring the Savannah Harbor reach into compliance with the standard. In order to meet the restoration plan, all sources of biochemical oxygen demanding substances to the river below Thurmond Dam were identified, and a model was developed by GAEPD and SCDHEC with the intent to reduce sources of those substances so the dissolved oxygen standard could be met in

19 (https://sero.nmfs.noaa.gov/habitat_conservation/hcd_headlines/cape_fear_ld1_fishway.html).

20 (https://sero.nmfs.noaa.gov/habitat_conservation/hcd_headlines/cape_fear_ld1_fishway.html
<https://www.coastalreview.org/2017/01/river-advocates-work-to-add-fish-passages/>)

the harbor. The foundation of the model was based upon “natural background conditions”, meaning that natural biological, physical, and chemical processes that contributed to oxygen generation and oxygen consumption were accounted for in the model before all discharger contributions were considered. A significant source of dissolved oxygen generation within the Augusta reach of the Savannah River included aeration of the river water as it cascaded over the dam. The figure below shows 2 years of 15-minute interval dissolved oxygen data (over 60,000 15-minute observations). These data show that aeration over the dam resulted in an average dissolved oxygen saturation of 107% (at RM 185 site) with both 25% and 75% of the data above 100% saturation and a few excursions to a low of 90% saturation. This can be compared to the shoals reach of the Savannah River (RM202) which had a lower average saturation, a wider 25% and 75% range, and lower DO% excursions below 90%. The proposed rock arch ramp will be more similar to the RM202 dataset because this shallow water habitat will undergo photosynthesis and respiration due to the attached algae on the rocky substrate in addition to aeration. The second figure below shows continuous data from below the shoals in July 2012. The data show that aeration and photosynthesis increased dissolved oxygen saturation to 122% in the afternoon but aeration and respiration at night lowered saturation to nearly 70%. Any loss or gain of dissolved oxygen within the Savannah River system below Thurmond Dam will impact the 5R process and could jeopardize restoration of dissolved oxygen in the Savannah Harbor.

Since dissolved oxygen is so critical, there should be peer reviewed documentation from other rock ramp projects around the country that show dissolved oxygen dynamics will not be impacted by the chosen alternative. Furthermore, that documentation should be in the form of measured data from those projects and not modeled results since this impact is so critical to restoring the river and could impact the viability of each municipal and industrial discharger below Thurmond Dam.

DO% 1/1/06-1/31/08

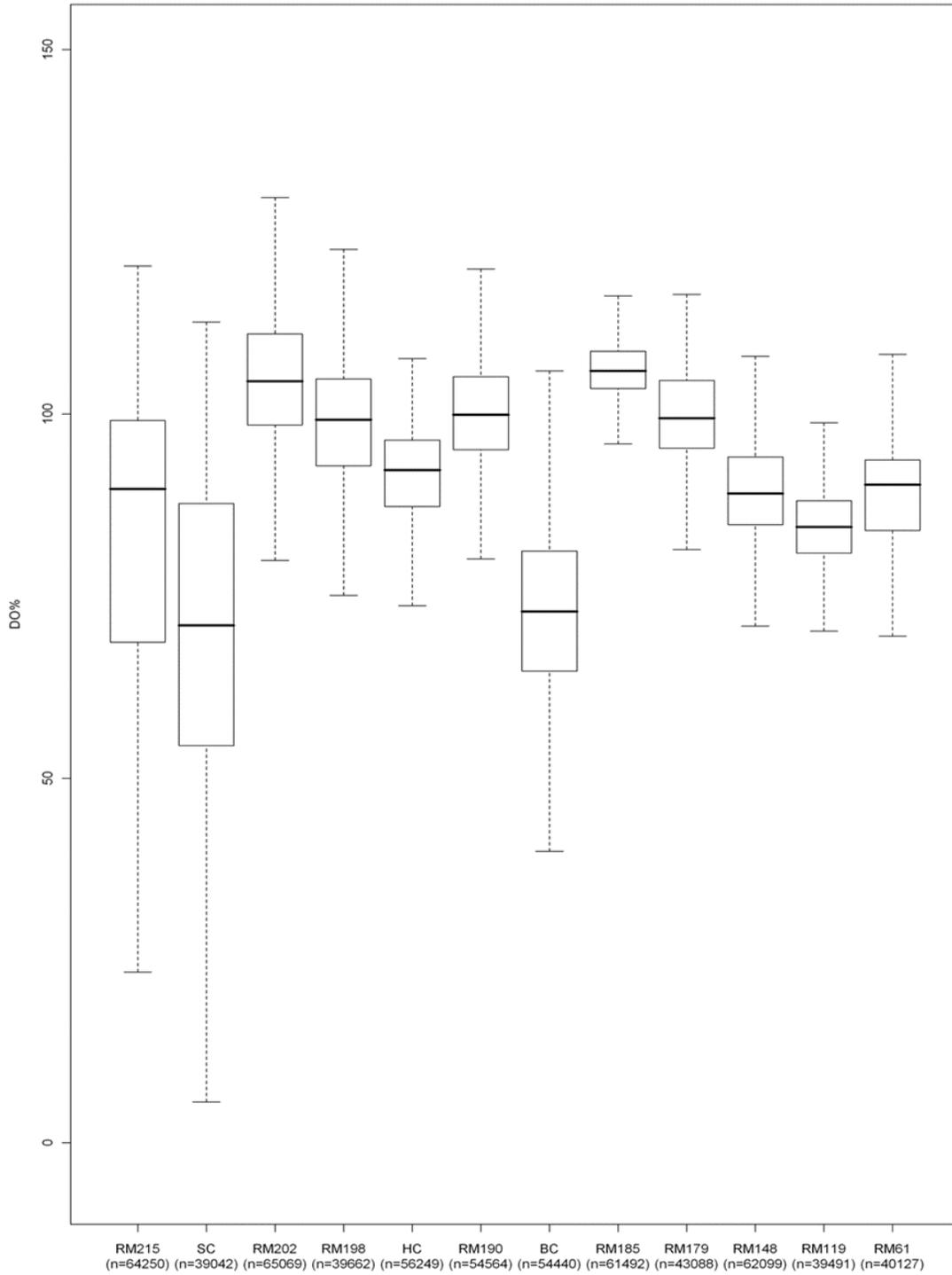


Figure 9: Dissolved oxygen percent saturation statistics from multiple continuous Savannah River water quality stations from January 2006 through January 2008 (from Comprehensive Savannah River Study, Final Report: February 2006-January 2008. Phinizy Center for Water Sciences.)

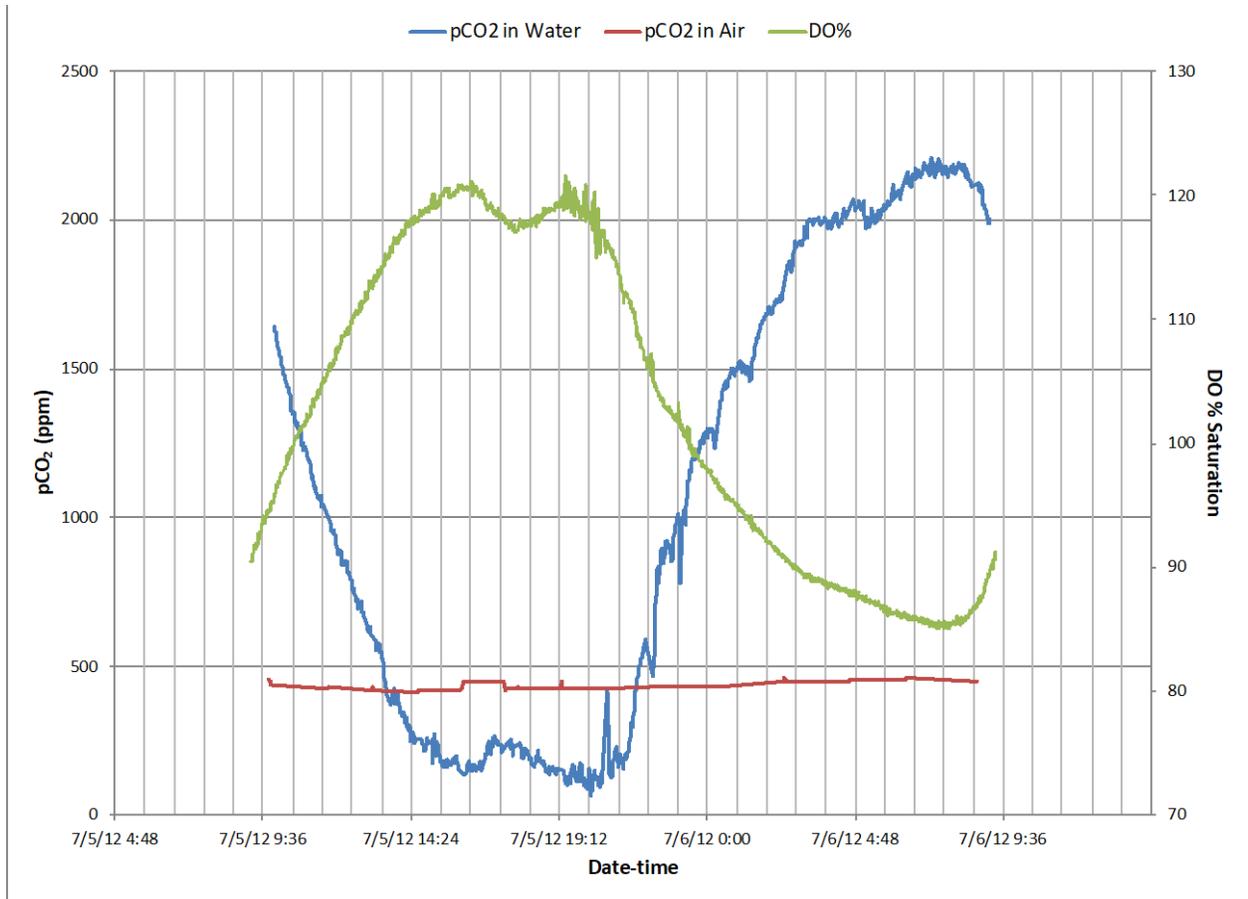


Figure 10: Measurements of dissolved oxygen percent saturation (green), partial pressure of CO₂ in water (blue) and partial pressure of CO₂ in air (red) at River Mile 202 (immediately below the shoals section of the Savannah River) over a 24-hr period, from July 5, 2012 through July 6, 2012.

3. Scour Hole Below NSBLD

What is the fate of the scour hole below the dam for the preferred alternatives?

4. Effect of Drawdown on Groundwater Elevations

After the drawdown, a crack developed in the soil behind a seawall on a property adjacent to the Savannah River. The failure was likely due to subsidence as a result of the lower pool elevation during the drawdown. Whether the seawall was installed properly or not is a matter of discussion, but the incident elucidated an important facet of the river system that could have a major effect as a result of a lower pool elevation. All surface waters in the Augusta and North Augusta areas flow to the Savannah River, groundwater contributes to that surface water flow. The pool elevation sets the piezometric head for all surface and regional surficial groundwater systems that drain to the river. Since groundwater and surface water flows to the river, changing pool elevation will have an impact on the regional surficial groundwater table by decreasing piezometric head and lower water levels in the watershed that drains to that pool elevation. This impact could have a positive effect in some areas of Augusta and North Augusta that have had historic flooding issues because the Lock and Dam artificially held the piezometric head higher than when the dam was not in place, but could have significant impacts in areas where groundwater drawdown weakens under

portions of each city that are supporting significant infrastructure. This again, shows that the series of dams in the Savannah River are the “new normal” for the river and changes that effect widescale systems, such as the regional groundwater system, could have significant economic impacts if not appropriately studied and accounted for. How will this potential impact be addressed if the pool elevation is proposed to be lowered from current normal levels?

5. Justification of mitigation

The Corps must clarify how NOAA-NMFS justified mitigation of access to spawning habitat above NSBLD in lieu of destruction of nursery/summer habitat in the estuary. The Cities would like to understand the NOAA-NMFS justification and should include providing the peer-reviewed statistical cost/benefit analyses to justify this conclusion as well as any peer-reviewed publications that support this justification. This justification should be weighed relative to some of the world’s renowned experts on shortnose sturgeon (including a NMFS expert; Kynard et al., 2016) suggesting that even if river rapids exist (believed by many fisheries experts to be the favored spawning conditions for shortnose sturgeon), this does not mean that they will seek those areas if individual fish imprint at a different reach during the early life stages.

L. Impacts to Wetlands not Adequately Identified, Evaluated, or Mitigated

Identification, mitigation, and evaluation of potentially impacted wetlands and the differing impacts to these by the various alternatives were not presented in the Draft Report including the Draft Finding of No Significant Impact. Therefore, the development and evaluation of the proposed alternatives in the Draft Report are inadequate.

Draft Report & Appendix C – Environmental Resources: Wetlands not investigated in the footprint of any of the alternatives.

Specific issues are as follows:

1. Wetlands near the NSBLD Site

- Impacts to wetlands adjacent to project site – PF01A and PFQ1C on Figure 9, and (potentially) others not identified - could not only be impacted by the lowering of the water upstream of the pool, but would also likely be further impacted by alternatives that include lowering of NSBLD Park. Excavation of the so-called wetlands bench will increase the hydraulic head differential and thereby tend to drain the wetlands identified in the NWI Map and other potential wetland areas located north easterly of the site.

- The Draft Report did not include an Environmental Impact Statement (EIS), wetlands delineation investigation, nor report for the proposed alternatives for the currently proposed project boundary. While these were conducted for the original SHEP Plan, the footprint of the proposed alternatives is clearly very different – located primarily on the north side of the river rather than the south side. While a National Wetland Inventory Map is referenced, based upon site inspection there are areas with standing water (observed during a site visit) to the north and east of the site. If these are subsequently identified as wetlands, they could also be impacted by most if not all the proposed alternatives.

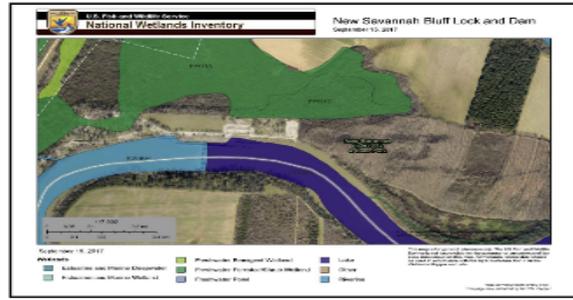


Figure 9: National Wetland Inventory Map for New Savannah Bluff Lock and Dam
2.2.5 Terrestrial Resources and Wildlife

Figure 11

- The footprint impacted by the alternatives is not clearly presented and does not adequately include or identify the areas needed for construction related activities including but not limited to access and dewatering.

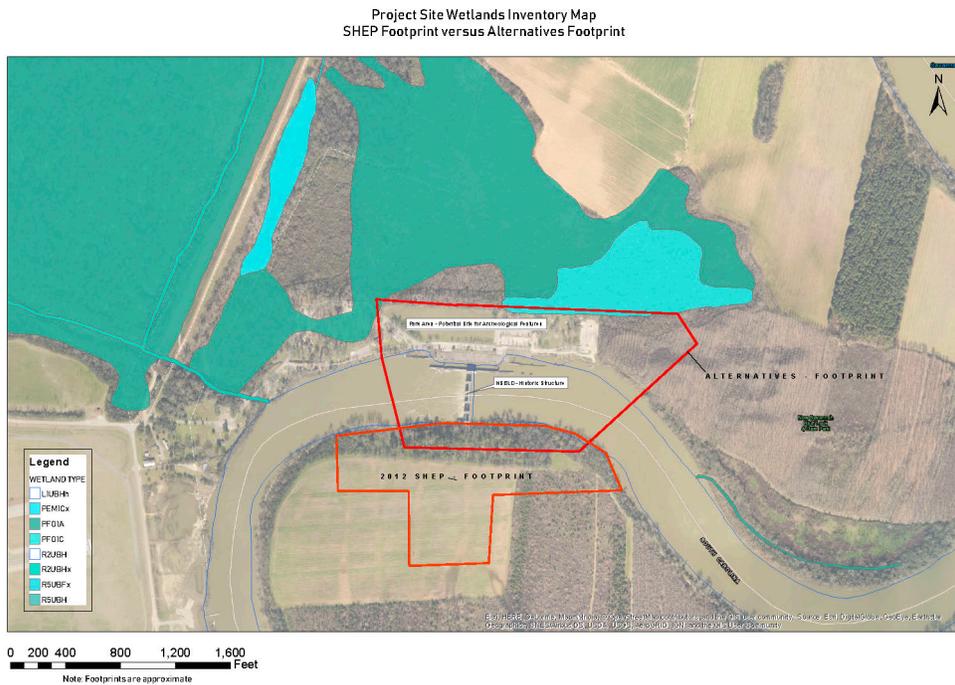


Figure 12

- All presented alternatives (other than 1-1) also include removal of the NSBLD which will entail vastly different dewatering efforts, construction techniques, and construction related impacts to the river as related to the original SHEP Plan. Identification, quantification, development, and evaluation of mitigation measures

and impacts on aquatic resources, and costs should be included in the development and refinement of alternatives. 

2. Wetlands Upstream of the NSBLD

Draft Report & Appendix C – The lowering of pool surface elevation will potentially affect fringe wetlands on the 17-mile reach of the Savannah River above the NSBLD, and wetlands with hydrologic surface connection to the river affected by reduction in pool elevations below existing surface water elevations. Based upon published data including USGS National Wetland Inventory, the affects would include thousands of acres of wetland, fringe wetland, and sensitive riparian habitat. The Corps failed to assess both direct and indirect effects of the proposal and alternatives on these sensitive areas which are protected pursuant to Section 404 of the Clean Water Act.

Section 2.2 of the PAAR addresses only areas in the immediate vicinity of the NSBLD and includes no assessment of pool surface elevation lower on the 17-mile mainstem stretch and the direct and indirect effect on wetland, fringe wetland, and sensitive riparian habitat and ecosystem features.

- As outlined within the Draft Report and elsewhere in these comments, the presented Alternatives were estimated to lower the existing water surface in the pool by about 5 feet for Alternative 2-3 or 3 feet for the Recommended Alternative 2-6d (5,000 cfs at the NSBL). Projected lowering of the water surface is even greater at flows below 5,000 cfs which occur during significant periods. Also, as stated elsewhere, the

River Reach Wetlands Inventory Map - 17 Miles of Impact

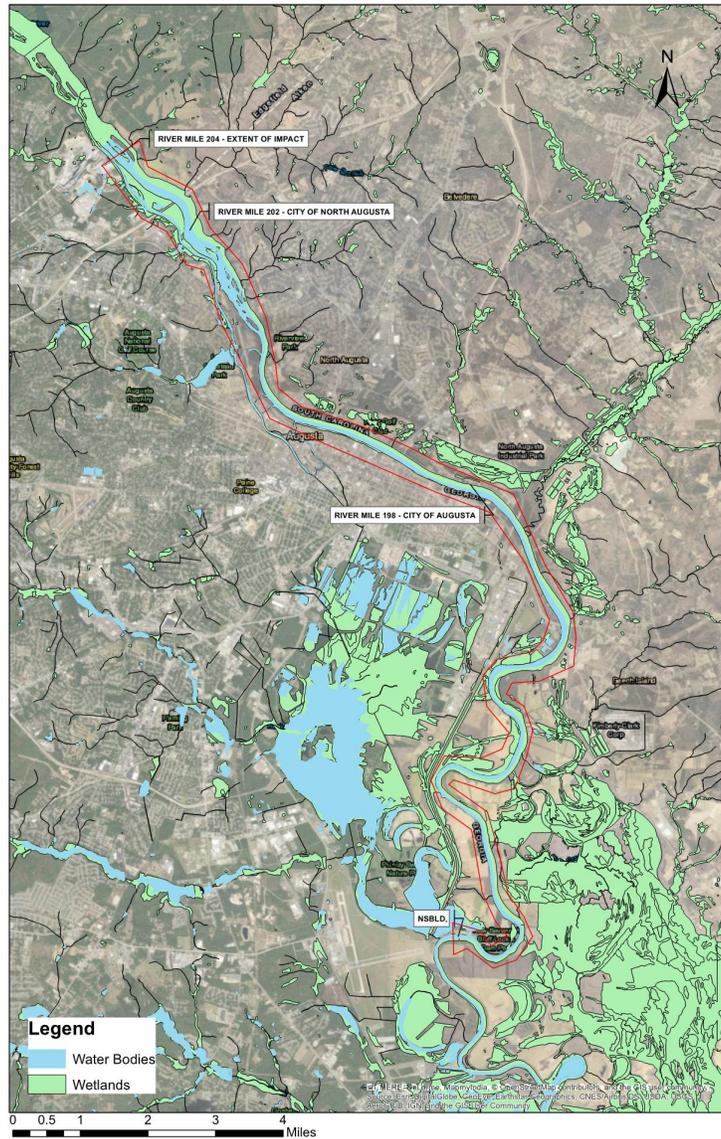


Figure 13

water surface elevations observed during the drawdown were significantly lower than projected by the Corps's model, which demonstrates further potential impacts to upstream wetlands. This reduction in water surface over existing conditions occurs (albeit at dimensioning amounts) throughout the impacted reach appears to be about 17 miles, however even this is not clearly established in the Draft Report. This lowering of the pool would likely have some impact on wetlands adjacent to the river over this entire reach. None of these potential impacts were identified or evaluated within the Draft Report.

For comparison, the original SHEP Plan was predicted by the Corps to have no reduction of the upstream water surface elevation at 5,000 cfs at the NSBLD. Therefore, impacts to upstream wetlands were not as critical of an issue as with the alternatives presented in the Draft Report.

M. Power Generation – A Lost Opportunity for O & M Revenue?

When the New Savannah Bluff Lock and Dam was built it was equipped with three identical water turbine bays for potential future installation of hydro-electric turbines. Under options where the lock wall is repaired, these bays could be fitted with three water-driven turbines powering three synchronous or induction generators totaling about 335 kW of electrical power, or about 1.0 MW. These units could produce almost 8 million KWH per year at a value exceeding \$400,000 annually.²¹ The City of Augusta could use the power itself at their nearby Messerly wastewater treatment plant, Hicks water treatment plant, or Augusta Regional Airport, thereby maximizing the value of the revenue. Moreover, the pool would not be lowered by the modest flows through the water wheels. The Corps should consider the added benefit of power generation as a potential offset against future maintenance costs of the applicable alternatives, including Alternative 1-1.

N. Cultural Resources and Historical Considerations

The Draft Report contains meager, erroneous, and incomplete information on the Corps's plans to comply with the applicable requirements of the National Historic Preservation Act. While the Corps states that they will conduct archaeological investigations according to the 2012 SHEP Programmatic Agreement, that agreement and its attachments make no mention of the New Savannah Bluff site nor the NSBLD. The Area of Potential Effect in the Draft Report is erroneous and needs to be corrected to include all of the areas impacted by the proposed alternatives, including at least all of the federally owned lands currently leased to Augusta, Georgia. It is known that the NSBLD is eligible itself for inclusion on the National Register of Historic Places, as acknowledged in the Draft Report. However, the Draft Report proposes no specific mitigation for its loss, which will occur in whole or in part in all alternatives except the No Action Alternative. The Draft Report merely states that an MOA with Georgia and South Carolina SHPOs will be required, and that perhaps documentation according to Historic American Engineering Record standards would be accomplished. The original SHEP EIS Programmatic

²¹“New Savannah Bluff Lock & Dam Hydro Electric Program,” and “What does the US Dept. of Energy (DOE) think about the potential of hydroelectricity at the New Savannah Bluff Lock and Dam?”, www.savannahriver.org, accessed April 4, 2019.

*Agreement*²² states, only in blanket terms, that the investigations pertaining to historic buildings and structures will be conducted according to the specified federal guidelines.

The Area of Potential Effect (APE) boundary should be adjusted to cover all of the areas impacted by the proposed alternatives, including access roads, lay down areas, and other areas on the Georgia and South Carolina side to be affected by the project, as well as the reach of the Savannah River upstream of the Thirteenth Street Bridge to the base of the Augusta Shoals above River Mile 204. The boundary should be enlarged to include at a minimum all of the federally owned lands leased to Augusta, Georgia (containing the lock-tenders' residences site), plus an adjacent colonial era cemetery, and the downstream lands to the end of the bluff. Also, there is a high probability of encountering remains of previous occupations of Native Americans at New Savannah Bluff. The Chickasaw Indians are known to have occupied the site during the historic period. Collections at the Augusta Museum of History include a fine shell gorget recovered from the borrow pits adjacent to this property, indicating that other remains might be discovered or disturbed. The extended upper reach of the river includes the historic Campbelltown Ferry site leading from historic Ezekiel Harris House (NRHP) across the river to Campbelltown and to the site of the colonial village of Fallmouth. The base of the shoals may contain remains of historic and prehistoric fish weirs and traps used to capture fish, particularly migratory fish such as those which are the subject of the Fish Passage project.

The Draft Report contains errors in identifying historic resources in the upstream pool, particularly bridges. There are two early to mid-19th Century railroad bridges across the Savannah River, but one is upstream of the Fifth Street Bridge and the other downstream. These are historic, patented "rolling lift bridges." In addition, there are stone piers from the former South Carolina Railroad covered timber bridge upstream of the Fifth Street Bridge. In addition, the Fifth Street Bridge, with a superstructure completed about 1935, is a historic property itself, containing a unique swing span. It is also the sole known example of a brick pier supported bridge in the United States.²³

The Draft Report mentions wing dams, pile dikes, and other features constructed by the Corps over many years in the reach under the pool as aids to navigation. The Fish Passage with its lowered water levels will effectively undo more than 166 years of projects and expenditures by the Corps to improve navigation in the Augusta-North Augusta area. Do those projects not still serve the important purpose of helping to maintain navigability, even though they may have been forgotten by the very agency that built them?²⁴ The "low training walls" should include the main training wall in the slack water pool opposite the Cities' waterfronts, sometimes called Gardner's Bar Jetty, which angles out from the South Carolina bank to the center of the river at the Norfolk Southern Railroad bridge at Sixth Street and extends thence roughly down the center of the river for approximately one mile. While it is a historic resource, it may become a safety hazard to navigation (both for recreational and economic development purposes) if the pool is lowered,

22 The Programmatic Agreement is hidden in the Draft Report appendices. The "Savannah Harbor Expansion Project Cultural Resources Programmatic Agreement" is found in Appendix C5 to the Draft Report, but is erroneously titled in the "Appendix C Environmental Resources Documentation" table of contents as "8-Step Process for EO 11988: Floodplain Management."

23 Personal communication, Eric DeLony, former director of HAER, with Tom Robertson, circa 2012.

24 Drawings of these features date back to at least 1853, when extensive surveys were made of the Savannah River navigation between Augusta and Savannah; and include plans dated 1883, 1888, 1916, and others. See The National Archives, Record Group 77, Civil Works Map Files, and Fortifications Files, and others.

requiring some sort of practical mitigation, not mere avoidance as a “check the box” mitigation measure for cultural resource preservation.

The NSBLD has been identified as eligible for listing on the National Register of Historic Properties, and Georgia DNR Historic Preservation Division has identified that the project will have adverse effect on the NSBLD under the National Historic Preservation Act (NHPA). Alternatives removing the NSBLD will have permanent destructive effect on the historic resource. Alternatives 1-1 and 2-1, which leave the NSBLD in place, minimize and avoid effects to historic resources and provide additional opportunities for historic and cultural benefits which have not been considered by the Corps. Interpretive centers, educational and historic tourism benefits of leaving the NSBLD in place, as has been done with similar projects with Corps involvement or ownership, have not been considered or assessed. For additional historic and cultural resources issues see Legal Comments, Section IX.B.

VI. Specific Comments on Alternative 1-1

*The Cities of Augusta and North Augusta request that the Corps reinstate and select a corrected and modified Alternative 1-1, because it is the only plan that comes close to maintaining the pool, as required by the WIIN Act 2016. **But even Alternative 1-1 illegally lowers the pool, as it does not comply with the WIIN Act and because it was formulated using the erroneous HEC-RAS computer model that was disproven by the February 15, 2019 drawdown.***

A. Reasons to include and select Alternative 1-1

1. Advantages, under the WIIN Act 2016 specified purposes:
 - Maintains the pool, under nearly existing conditions (As presented, Alternative 1-1 lowers the pool elevation and decreases depths, however it may be possible to adapt Alternative 1-1 to meet the historic existing pool elevations.)
 - Preserves navigation in the pool.
 - Preserves the Lock and Dam Park.
 - Passes migratory fish.
2. Disadvantages, under the WIIN Act 2016 specified purposes:
 - Eliminates navigation up and down the river.
 - Removes the Lock, but preserves the water control gates of the Dam.
3. Other Advantages, not directly related to WIIN Act specified purposes:
 - Maintains adjustable control of the pool levels.
 - Requires no land purchases.
 - Requires no upstream flooding easement rights to be purchased.
 - Reduces impacts to aquatic resources and construction dewatering efforts and costs during construction.
 - Would best enable a future whitewater feature along the frontage of the park, if one should be added in the future.

4. Other Disadvantages, not directly related to WIIN Act specified purposes:
 - Requires ongoing maintenance of mechanical and structural elements of the remaining gates.

B. Reasons to Question Costs Related to Alternative 1-1

1. Widely Changing Costs

The cost figures presented by the Corps for this and other alternatives have varied greatly at each stage of this project and were even changed by an order of magnitude during the middle of the current public comment period. The underlying bases of these costs have not been shared with the public, and are so unreliable and unsubstantiated that no rational conclusions can be drawn by the Cities nor the public at large.

The Corps has used their latest highly escalated cost projections and a question about the fish passage efficiency to throw out the most reasonable of the plans proffered in the Draft Report. This decision is arbitrary and should be reversed.

The costs assume a complete rebuild of the Lock and Dam at Year 50 at a cost of \$93.7 million, and a huge amount of Operation and Maintenance costs besides. Engineering economic analyses do and should consider proper maintenance costs to operate the facility over the time of the planning horizon. The very large and highly suspect O&M costs should obviate the need for a complete rehabilitation at that time. It is totally unclear what the basis of those exorbitant O&M costs are. Moreover, the Corps will certainly not be actually placing funds into a sinking fund to pay for the rebuild. The Corps should present supporting documentation of the newly escalated cost figures, so that the Cities and stakeholders may reach conclusions on their validity.

2. Erroneous Cost Estimates and Assignment of Responsibility Cost Sharing

The Corps's Implementation Guidance states that if any alternative is chosen under (i) of the WIIN Act, the federal share of operation and maintenance costs is 100%, and if any alternative is chosen under (ii), the O&M costs are to be split according to the purposes of those costs. Therefore, the O&M costs for Alternative 1-1 should be 100% federal. But, the escalated cost chart in their blog post of 2019/03/18 shows a split federal/non-federal cost for Alternative 1-1, the same basis as presented for 2-6d.²⁵ In reality all of the O&M costs for 1-1 should be corrected to be a federal expense. Is this a hidden reason for the Corps to eliminate Alternative 1-1 late in the public comment period?

Moreover, the Corps's cost estimates overall are arbitrary and unsupported, contradicting previously published figures by such wide margins as to bring into question their veracity for use in rational decision making.

²⁵ <https://balancingthebasin.armylive.dodlive.mil/2019/03/18/how-two-fish-passage-alternatives-compare/>, Draft Report, 4.3 Cost Sharing, p. 105, Implementation Guidance, May 25, 2017.

Thus, the Corps's blog table is an unsubstantiated presentation of erroneously-assigned, inflated costs. Their cost and assignments do not follow the Corps's own instructions from their Headquarters, and must be discarded and revised.

VII. Specific Comments on Alternative 2-6d.

The Cities of Augusta and North Augusta object to the selection of Alternative 2-6d, because that plan violates the authorizing legislation in that it does not maintain the pool for water supply and recreation as required by the WIIN Act 2016, and does irreparable and permanent damage to the communities, their industries, businesses, citizens, and visitors.

A. Reasons to Reject Alternative 2-6d.

Alternative 2-6d consists of a fixed weir with a floodplain runaround through the Lock and Dam Park.

1. Advantages, under the WIIN Act 2016 specified purposes:
 - No technical advantages for authorized purposes.
 - Most cost effective (according to the Draft Report)
2. Disadvantages, under the WIIN Act 2016 specified purposes:
 - Greatly lowers the pool (much lower than predicted in the Draft Report).
 - Impairs water supply in the pool.
 - Impairs recreation in the pool.
 - Eliminates the Lock and Dam Park for recreation.
3. Other Advantages, not directly related to WIIN Act specified purposes:
 - Passes fish. If the design of the rock ramp works for passing sturgeon, then the full river width of the ramp is beneficial to the fish for their finding the ramp.²⁶
 - Highest weir without land inundation (according to the Draft Report).
4. Other Disadvantages, not directly related to WIIN Act specified purposes:
 - Eliminates navigation up and down the river.
 - Impairs safe navigation within the pool.
 - Results in a pool water surface that will fluctuate much more frequently and dramatically than historic conditions. This will result in bank instability, poor access to the water's edge, increased difficulty in egress from the water, and failure of structures such as occurred during the drawdown.
 - Effectively eliminates the vast majority and significantly decreases the value of the NSBLD Park.

²⁶ This benefit is included and stated here, notwithstanding the fact that the WIIN Act does not require nor authorize fish passage for this alternative, because it is authorized under option (ii) of the act.

B. Reasons to Question Costs Related to Alternative 2-6d.

1. Erroneous Cost Estimates and Assignment of Responsibility for Cost Sharing.

The Corps's cost estimates are arbitrary and unsupported, contradicting previously published figures by such wide margins as to bring into question their veracity for use in rational decision making.

The Corps's Implementation Guidance states that if any alternative is chosen under (ii) of the WIIN Act, the federal share of operation and maintenance costs is 100% for the fish passage alone, "including monitoring, adaptive management, and operation and maintenance"; while the share of costs for any other purpose is 100% non-federal, including ". . . operation and maintenance of the structure for any other purpose, including maintenance of the pool for water and recreation."²⁷ The escalated cost chart in the Corps's blog post of 2019/03/18 shows zero (\$0) ongoing O&M costs for Alternative 2-6d. under the "Non Fed Share."

It is absurd to assume that there will be no maintenance required for the specified tasks over the life of the project. Certainly there will be costs for maintaining the unlined flood water runaround, repairing scour holes, removing accumulated silt behind the weir, removing accumulated flotsam interfering with navigation in the pool at the boat ramp, keeping up the boat ramp, and a myriad of other similar items.

The federal share of the first cost is also erroneously calculated in the blog post, which states that the federal share of the SHEP Fish Passage is limited to 75 percent of the original SHEP Fish Passage authorized in 2014, "which is currently estimated at \$62,673,000." This unsupported cost estimate is greatly understated, as it is inconceivable that all of the other costs quoted by the Corps have recently escalated dramatically and inexplicably, while the original plan cost has remained the same or nearly the same. The cost estimate of the original SHEP plan must be corrected and updated commensurate with the treatment that all of the other cost estimates have received. The Corps must furnish background substantiation of the costs to allow clear understanding and independent review by the stakeholders of the economic analyses to be accomplished.

Thus, the blog table is once again an erroneous presentation of costs, according to the Corps's own instructions from their Headquarters, and must be discarded and revised.

VIII. Detailed Comments on Corps Draft Report, Line by Line

The comments in this document are supplemented by more detailed comments on the individual sections, presented line by line, which are included herein in Appendix G.

²⁷ Note that the Draft Report does not follow the Corp's Implementation Guidance on costs to be included. The Implementation Guidance does not mention "navigation" costs as a non-federal cost (consistent with the WIIN Act), while the Draft Report includes navigation as a non-federal sponsor cost (inconsistent with the WIIN Act). (See Implementation Guidance, May 25, 2017, pp. 2-3; and Draft Report, 4.3 Cost Sharing, p. 105.)

Appendices

APPENDIX A	Resolutions of Governing Bodies: Augusta, North Augusta, Aiken County
APPENDIX B	Letter from Senators and Congressmen to Department of the Army, Corps of Engineers, April 9, 2019.
APPENDIX C	Report on Hydraulics Methodology, April 15, 2019
APPENDIX D	Hydraulic Modeling and Discrepancies Observed During Drawdown
APPENDIX E	Savannah River Sediment Chemistry Data
APPENDIX F	River Vision Plan for the Savannah River for the City of Augusta, April 2019.
APPENDIX G	Detailed Comments on Corps Report Line by Line
APPENDIX H	Other Alternatives That Have Been Proposed
APPENDIX I	Transcript of City of Augusta Public Meeting, Lock and Dam Meeting, March 31, 2019
APPENDIX J	Aiken Standard News Article, February 19, 2019
APPENDIX K	Augusta Chronicle News Article, February 16, 2019

APPENDIX A

Resolutions of Governing Bodies: Augusta, North Augusta, Aiken County

**RESOLUTION IN SUPPORT OF OPTION 1-1
FOR THE SAVANNAH RIVER LOCK AND DAM**

WHEREAS, the Savannah River is a valuable asset to the entire Central Savannah River Area and especially to the consolidated government of Augusta, Georgia and its citizens;

WHEREAS, the Augusta Commission supports the idea of constructing a fish passageway to improve and sustain favorable outcomes for the fish and other wildlife in the Savannah River; and

WHEREAS, maintaining a high pool level in the Savannah River is critical to sustaining the commercial and recreational uses of the Savannah River; and

WHEREAS, the governing body of the consolidated government of Augusta, Georgia wishes to express its strong support for Corp of Engineer option 1-1 (retain Dam with Georgia Fish passage); and

WHEREAS, the governing body of the consolidated government of Augusta, Georgia wishes to express its strong opposition to any fish passageway option that would lower the pool level of the Savannah River more than is minimally necessary for a fish passageway.

NOW THEREFORE, THE AUGUSTA COMMISSION HEREBY RESOLVES AS FOLLOWS:

Section 1. **Support for** Option 1-1 and maintaining the 114.5ft (NAVD 1988) pool level for the Savannah River at Downtown Augusta location (as recorded at USGS Monitoring Gage #02196670).

Section 2. **Opposition** to any option that lowers the pool level of the Savannah River less than 114.5ft at Downtown Augusta location to construct a fish passageway. The Mayor and Commission of Augusta, Georgia strongly oppose all options that would reduce the pool level of the Savannah River.

Section 3. **Severability** - To the extent any portion of this Resolution is declared to be invalid, unenforceable, or non-binding, that shall not affect the remaining portions of this Resolution.

Section 4. **Repeal of Conflicting Provisions** - All resolutions inconsistent with this Resolution are hereby repealed.

Section 5. **Effective Date** - This Resolution shall be effective on the date of its approval by the Augusta, Georgia Commission.

SO RESOLVED, this the 18th day of December, 2018.

AUGUSTA, GEORGIA

By: Hardie Davis, Jr.
AGM Hardie Davis, Jr.
As its Mayor
12/18/18

ATTEST:

Lena J. Bonper
Lena J. Bonper, Clerk of Commission



RESOLUTION NO. 2019-1
A RESOLUTION IN SUPPORT OF OPTION 1-1 FOR THE NEW SAVANNAH BLUFF LOCK
AND DAM AS PRESENTED BY THE ARMY CORPS OF ENGINEERS AS A MITIGATION
PROJECT FOR THE SAVANNAH PORT DEEPENING

WHEREAS, the City relies on the Savannah River for drinking water, recreation, and as a beloved amenity that contributes to the quality of life for our citizens; and

WHEREAS, the City of North Augusta has branded itself as “South Carolina’s Riverfront” and recently, along with private developers, has invested hundreds of millions of dollars into developing said riverfront; and

WHEREAS, the City and its citizens have grown reliant and accustomed to the river pool created by the Lock and Dam since it went into service in 1937; and

WHEREAS, the 2016 WIIN Act states that any mitigation project selected by the Corps must “maintain the pool ... as in existence on the date of enactment of this Act”; and

WHEREAS, the City believes that pool elevation to be 114.5 (NAVD 1988) as measured at Downtown Augusta location (as recorded at USGS Monitoring Gage #02196670); and

WHEREAS, the preferred option 2-6d as selected and presented by the Corps would lower said pool by approximately 2.5 – 3 ft.; and

WHEREAS, the Mayor and City Council, after examining all options presented by the Corps, believes that option 1-1 is the only option that comes close to maintaining the existing pool.

NOW, THEREFORE, BE IT RESOLVED by the Mayor and City Council of the City of North Augusta, in meeting duly assembled and by the authority thereof, that ,

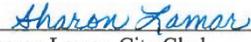
1. Option 1-1 as presented by Corps is the preferred option of the City.
2. Any and all measures should be undertaken by the Mayor and City Administrator to ensure that the present pool be maintained.

DONE, RATIFIED AND ADOPTED BY THE MAYOR AND CITY COUNCIL OF THE CITY OF NORTH AUGUSTA, SOUTH CAROLINA, ON THIS THE 7TH DAY OF JANUARY, 2019.



Robert A. Pettit, Mayor

ATTEST:


Sharon Lamar, City Clerk

Sponsor(s) : County Council
Committee Referral : County Council
Committee Consideration Date : January 15, 2019
Committee Recommendation : Approval
Effective Date : January 16, 2019

RESOLUTION NO. 19-01-15

COUNCIL ADMINISTRATOR FORM OF GOVERNMENT FOR AIKEN COUNTY

Expressing Support of Option 1-1 for the New Savannah Bluff Lock and Dam as Presented by the United States Army Corps of Engineers as a Mitigation Project for the Savannah Harbor Expansion Project.

WHEREAS:

1. Aiken County and its citizens have come to rely and depend upon the pool of water in the Savannah River created by the New Savannah Bluff Lock and Dam since it went into service in 1937; and
2. The City of North Augusta, the City of Augusta, as well as industries located along this pool, draw drinking, process and cooling water from the pool; and
3. In addition, the Savannah River is a major amenity that contributes significantly to the quality of life in our community and has recently drawn hundreds of millions of dollars in new public and private investment along the area of the pool; and
4. The WIIN Act, adopted in 2016, requires that any mitigation project chosen by the United States Army Corps of Engineers maintain this pool at the elevation that existed on the date of the adoption of the Act; and
5. It is believed that the elevation of the pool is 114.5 (NAVD 1988) as measured at Downtown Augusta location (as recorded at USGS Monitoring Gage #02196670); and
6. The preferred option of the Corps of Engineers, known as Option 2-6d, would lower the pool by an estimated 2.5 – 3 feet, creating operational issues for governments and industries, as well aesthetic and recreational problems for our community and the investments being made along the riverfront ; and
7. Aiken County, in consultation with the City of North Augusta, the City of Augusta, and the major industries utilizing the pool, have concluded that this option does not serve the best interests of our residents; and
8. Aiken County, having reviewed the various options presented by the Corps of Engineers, has concluded that Option 1-1 is the best and most reasonable option to maintain the pool for use by our residents and industries.

NOW THEREFORE BE IT RESOLVED BY THE AIKEN COUNTY COUNCIL THAT:

1. Aiken County Council does hereby endorse Option 1-1 for the New Savannah Bluff Lock and Dam mitigation project as the preferred option and requests that the United States Army Corps of Engineers reconsider their preferred Option 2-6d.
2. Aiken County Council also directs the County Council Chairman and County Administrator to continue efforts to ensure that the current pool created by the New Savannah Bluff Lock and Dam is maintained.

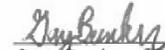
(signatures on following page)

Adopted at the regular meeting of Aiken County Council on January 15, 2019.

ATTEST:


Tamara Sullivan, Council Clerk

SIGNED:


Gary Bunker, Chairman

IMPACT STATEMENT:

COUNCIL VOTE: Unanimous

Sponsor(s) : Development Committee
Committee Referral : Development Committee
Committee Consideration Date : June 20, 2017
Committee Recommendation :
Effective Date : June 21, 2017

RESOLUTION NO. 17-06-105

COUNCIL ADMINISTRATOR FORM OF GOVERNMENT FOR AIKEN COUNTY

(Expressing Support to the United States Army Corps of Engineers for the Preservation of the Pool Created by the New Savannah Bluff Lock and Dam at Current Levels and for the Repair and Rehabilitation of the Structure.)

WHEREAS:

1. Aiken County, particularly the area along the Savannah River, has long depended on the pool created by the New Savannah Bluff Lock and Dam (NSBL&D) for drinking water, recreational use, industrial development; property development and wastewater discharge; and,
2. The NSBL&D has reached the stage that it needs substantial repair and rehabilitation and under the Water Infrastructure Improvements for the Nation (WIIN) Act, the primary objectives for the United States Corps of Engineers are to design and construct a structure that will maintain the pool for water supply, recreation activities and, possibly, navigation and to not increase flood risks in downtown Augusta and North Augusta; and,
3. It is recognized that NSBL&D was not built as a flood control structure, but certain changes could adversely impact properties along the pool or other users of the impoundment by either increasing the risk of flooding in downtown North Augusta and Augusta, lowering the pool to an unacceptable level or both; and,
4. Alternative designs have been discussed, including a fixed elevation weir without the ability to effectively control water levels, which provides a major area of concern for Aiken County; and ,
5. The Savannah Harbor Expansion Project (SHEP) includes funding for passage at the NSBL&D for endangered fish in the river, and some funding for repair or replacement of the NSLB&D; and,
6. Many years of inaction on this project has resulted in further deterioration of the structure, increasing the risk of the loss of the pool, an event that would be devastating to the economies of communities on both sides of the Savannah River; and,
7. Aiken County Council wishes to encourage prudent and expeditious action by the United States Army Corps of Engineers to repair and rehabilitate the NSBL&D in a fashion that best meets the needs of our community.

NOW THEREFORE BE IT RESOLVED BY THE AIKEN COUNTY COUNCIL THAT:

1. Aiken County Council requests the United States Army Corps of Engineers develop a fully funded plan for the repair and rehabilitation of the New Savannah Bluff Lock and Dam, including the passage for endangered species, which preserves the pool created by the structure at current levels and does not increase flood risks in downtown North Augusta and Augusta.
2. Aiken County Council encourages that the resulting project plan be developed and executed in a fashion consistent with the goals of the SHEP project and timeframe.

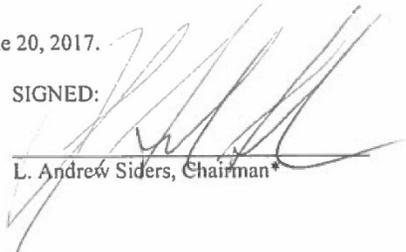
(SIGNATURE PAGE TO FOLLOW)

Adopted at the regular meeting of Aiken County Council on June 20, 2017.

ATTEST:


Tamara Sullivan, Council Clerk

SIGNED:


L. Andrew Siders, Chairman*

IMPACT STATEMENT:

COUNCIL VOTE: Unanimous

*Serving as Chairman pursuant to Aiken County Code Section 2-30(b).

**RESOLUTION 19-06 IN SUPPORT OF OPTION 1-1
FOR THE SAVANNAH RIVER LOCK AND DAM**

WHEREAS, the Savannah River is a valuable asset to the entire Central Savannah River Area and especially to the consolidated government of Augusta, Georgia and its citizens;

WHEREAS, the Columbia County Board of Commissioners supports the idea of constructing a fish passageway to improve and sustain favorable outcomes for the fish and other wildlife in the Savannah River; and

WHEREAS, maintaining a high pool level in the Savannah River is critical to sustaining the commercial and recreational uses of the Savannah River; and

WHEREAS, the governing body of Columbia County, Georgia wishes to express its strong support for Corp of Engineer option 1-1 (retain Dam with Georgia Fish passage); and

WHEREAS, the Columbia County Board of Commissioners wishes to express its strong opposition to any fish passageway option that would lower the pool level of the Savannah River more than is minimally necessary for a fish passageway.

THEREFORE, The Columbia County Board of Commissioners now hereby resolves:

Section 1. Support for Option 1-1 and maintaining the 114.5ft (NAVD 1988) pool level for the Savannah River at Downtown Augusta location (as recorded at USGS Monitoring Gage #02196670).

Section 2. Opposition to any option to construct a fish passageway that lowers the pool level of the Savannah River less than 114.5ft near Downtown Augusta.

Section 3. Repeal of conflicting resolutions – Any resolutions in conflict with this Resolution are hereby repealed to the extent necessary to eliminate such conflict.

Section 4. Effective Date - This Resolution shall be effective immediately upon its adoption.

SO RESOLVED, this the 19th day of February, 2019.

Columbia County Board of Commissioners



By: Douglas R. Duncan, Jr.
Chairman

Attest:



Patrice R. Crawley, Clerk of the Board of Commissioners

APPENDIX B.

**Letter from Senators and Congressmen to Department of the Army,
Corps of Engineers, April 9, 2019.**

Congress of the United States
Washington, DC 20515

April 9, 2019

The Honorable R.D. James
Assistant Secretary of the Army (Civil Works)
108 Army Pentagon
Washington, DC 20310-0108

Lieutenant General Todd T. Semonite
Commanding General and Chief of Engineers
U.S. Army Corps of Engineers
441 G. Street, NW
Washington, DC 20314-1000

Dear Secretary James and General Semonite:

We write to you to express our concerns regarding the future of the New Savannah Bluff Lock and Dam (NSBL&D) and express the intent of Congress for Public Law 114-322, the 2016 Water Infrastructure Improvements for the Nation Act (WIIN). It is our hope that by clarifying the Congressional intent and highlighting our concerns regarding the impact of Alternative 2-6d on the water pool level, which is vital for municipal and industrial water supply for the surrounding area and recreational activities for the citizens of North Augusta, Augusta and surrounding communities, the U.S. Army Corps of Engineers can arrive at a solution that benefits both the communities along the Savannah River and the Corps.

On November 15, 2018, the Corps announced Alternative 2-6d, which would remove the lock and dam and construct a fixed weir with a dry floodplain bench, as their preferred option for the future of the NSBL&D. On February 9, 2019, the Corps began a simulated drawdown test in order to demonstrate the effects of Alternative 2-6d on the pool levels, which are vital for water supply and recreational activities for the surrounding communities. On February 15, 2019, the Corps halted the drawdown simulation after effects of the river drawdown resulted in instability of the Georgia riverbank in the residential neighborhood of Goodale Landing. In addition, the simulation resulted in numerous docks becoming useless for recreational activities while they sat in the mud given the reduced pool level. Clearly these results do not reflect the intent of Congress.

The WIIN Act of 2016 allows for the modification or removal of the NSBL&D to allow for the passage of shortnose sturgeon, Atlantic sturgeon, and other migratory fish in order to mitigate the environmental impacts of the Savannah Harbor Expansion Project (SHEP) while also taking into consideration that the Corps must maintain the river conditions that were in place on the date of enactment. Congress clearly intended for the Corps to seek out a solution that would benefit both SHEP and the local communities. Unfortunately, as the recent drawdown test has proven, Alternative 2-6d does not appear to meet the requirements of the plain text of the legislation or the intent of Congress when it passed the WIIN Act. Communities like North Augusta and Augusta have invested millions in improvements along their waterfront and to say that Congress

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intended to thwart the economic growth by eliminating or severely hampering access to the river would be wrong. We encourage the Corps to consider the intent of Congress and to only pursue an alternative that fulfills the environmental requirements of SHEP while also protecting the investments of our riverfront communities.

We would also like to address the Corps' stance regarding the impact of the new structure on the depth of the pool. The 2016 WIIN Act mandates that the Corps build a structure that is "able to maintain the pool for water supply and recreational activities, as in existence on the date of enactment of this Act." The Corps' stated that their implementation guidance "interprets the language to mean the current functionality of the pool must continue to allow for water supply, recreation and navigation as it did on the date of the enactment" and further argues that the alternatives currently being considered "maintain[s] this functionality." However, we find this statement to be inaccurate given the reduced river level prohibited individuals from utilizing their docks for recreational activities, such as fishing, boating, kayaking. In addition, local industry has expressed concern that the preferred alternative will not maintain the pool necessary to supply their water intakes. We would like to understand how the Corps can justify that the preferred alternative maintains the functionality of the pool given the results of the recent drawdown and the fact that the test was aborted.

In closing, we ask that the Corps take into close consideration the intent of Congress as you select the final alternative. We must protect our riverfront communities and ensure the Corps follows the law to ensure that the water supply and recreational activities are functional as they were on date of enactment.

We look forward to continued engagement with you regarding the future of the NSBL&D and we appreciate your cooperation as we work together to ensure that our riverfront communities continue to prosper.

Sincerely,



Lindsey O. Graham
United States Senator



Johnny Isakson
United States Senator



Tim Scott
United States Senator



David Perdue
United States Senator



Joe Wilson
Member of Congress



Rick W. Allen
Member of Congress

Cc: Brigadier General Diana M. Holland, Commander, South Atlantic Division, U.S. Army
Corps of Engineers

APPENDIX C
Report on Hydraulics Methodology, April 15, 2019

REPORT ON HYDRAULICS METHODOLOGY

Savannah River at Augusta Georgia and North Augusta, South Carolina

Thomas Heard Robertson, PE, AICP, RLS

April 15, 2019

Introduction

The Corps of Engineers conducted a live test during the week of February 11, 2019 of the hydraulics of the reach of the Savannah River that extends from the New Savannah Bluff Lock and Dam upstream to the base of the Augusta shoals. This section is approximately seventeen (17) miles long and includes the waterfronts of both the City of Augusta, Georgia, and the City of North Augusta, South Carolina. The “drawdown” was conducted as a simulation of the fixed-weir pool that might result from implementing the recommended alternative for a rock weir fish passage proposed to be constructed in place of the Lock and Dam, as mitigation for the assumed loss of population of the endangered shortnose sturgeon due to the Savannah Harbor Expansion Project.¹

The stated intent of “the pool simulation was to allow members of the public and stakeholders along the Savannah River to observe the conditions they could expect with Alternative 2-6D, a fixed weir structure, in place of the current lock and dam.” Among the goals was to demonstrate the anticipated pool level and extent during average flow conditions (between 5,000 and 8,000 cfs), and “to verify the predictions made with the riverine model for the depth attenuation through the pool. If necessary, adjustments will be made to the model to better represent the actual condition.”²

Observations of water levels during the simulation showed water levels that were much lower than those predicted by the model (0.95 foot observed versus 3.3 feet predicted.) Therefore, it is obvious that the hydraulic models used in the Draft Report are all flawed and do not accurately represent the actual water surface profiles on the Savannah River.

¹ US Army Corps of Engineers, Savannah District, “Operation Plan for Fixed Weir Pool Simulation, Savannah Harbor Expansion Project Fish Passage at New Savannah Bluff Lock and Dam,” January 25, 2019, pp. 2-3, copy in the Office of the Mayor, North Augusta, SC.

² *Ibid.*

How might these drastic differences be explained?

Purpose

This report is intended to present the findings of our study of some of the probable causes of the differences between the observed water surface elevations and those predicted by the Corps of Engineers Draft Report dated February 2019.³

Summary of Water Elevations: Observed and Calculated

The following table summarizes the water levels from the Draft Report and from other sources as shown in the footnotes below it. While the chart may be used to make any number of comparisons that the reader may wish to study, it is noted that the actual water elevation was 111.23 (NAVD 1988) at the Fifth Street gauge, which was 3.0 feet less than the predicted water surface elevation of 114.2 (NAVD 1988) produced by the HEC-RAS model for Alternative 2-6d for a flow rate of 8,000 cfs.

Table1: Water Level Comparisons

Description	Water Elevations				Notes
	Lock & Dam ^a		Fifth Street Bridge ^b		
Datum	NGVD 1929	NAVD 1988	NGVD 1929	NAVD 1988	Assumed difference = 0.8'
Normal pool per original design ^c	115.0 - 114.5	114.2 - 113.7	115 N/A	114.2 N/A	
Corps's current operations					
"Normal" ^d	114.0 -114.5	113.2 - 113.7	115.1	114.3	
Range ^e	112.0 - 115.3	111.2 - 114.2	N/A	N/A	
Usual Levels (non-flood) per USGS gauges ^f	115.0 ^g	114.3	115.0	114.3 ^h	Approximate Water Year 2018 year-long medians, by inspection
Alternative Simulations Q= 8000 cfs from HEC-RAS Summary ⁱ					Elevations Produced from Questioned Model
Existing	114.0	113.2	116.1	115.3	Probably wrong
No Action Alt	114.0	113.2	116.1	115.3	Probably wrong
Alt 1-1	113.9	113.1	116.0	115.2	Probably wrong
Alt 2-6a	112.6	111.8	115.4	114.6	Probably wrong
Alt 2-6d	111.7	110.9	115.0	114.2	Inconsistent with observations 2/15/2019

³ US Army Corps of Engineers, Savannah District, U.S. Army Corps of Engineers Report "Savannah Harbor Expansion Project, Georgia and South Carolina: Fish Passage at New Savannah Bluff Lock and Dam Integrated Post Authorization Analysis Report and Supplemental Environmental Assessment, February 2019.

Description	Water Elevations				Notes
	Lock & Dam ^a		Fifth Street Bridge ^b		
Datum	NGVD 1929	NAVD 1988	NGVD 1929	NAVD 1988	Assumed difference = 0.8'
Actual Elevations February 15, 2019	111.08	110.28 ^j	112.03	111.23 ^k	Flow rate at NSBLD was 7,270 cfs, near 8,000 cfs.
Desired by Cities and Counties^l	N/A	N/A	115.2	114.5	

Note: The actual instantaneous flow rates in the Savannah River on the morning of February 15, 2019, were 7,270 cfs at NSBLD and 5,422 cfs at Augusta Canal Diversion Dam

References:

1. Lock and Dam United States Geological Survey (USGS) gauge is located just upstream. Datum is NGVD 1929.
2. Fifth Street USGS gauge is located on first pier from Georgia side. Datum for the recording gauge is NAVD 1988. Zero of the recording gauge is 100.00. Note that the datum for staff gauge is NGVD 1929. Zero of the staff gauge (and previous recording records) is Elevation 102.06. Verified by field surveys by Cranston Engineering Group, P.C.
3. Construction plans: *Rehabilitation of Gates and Piers, New Savannah Bluff Lock and Dam*, Plate S-500, 12 March 1995; and Corps of Engineers, U. S. Army, Savannah, Georgia, District, *Special Flood Hazard Information Report, Savannah River, Augusta, Georgia*, August 1971, p. 7.
4. Draft Report, Appendix A, p. A-19. USGS records for Water Year 2018 contradict the Corps's assertion of operating range.
5. Draft Report, 2.2.2. Hydrology and Floodplains, p. 18.
6. Inspection of records of USGS gauge records for Water Year 2018 (October 1, 2017—September 30, 2018).
7. Gauge 02196999 at New Savannah Bluff Lock and Dam.
8. Recording Gauge 02126670 at Jefferson Davis (Fifth Street) Bridge.
9. Draft Report, Appendix A, Table 8. Summary of HEC-RAS Results, p. A-41.
10. Gauge 02196999 at New Savannah Bluff Lock and Dam.
11. Recording Gauge 02126670 at Jefferson Davis (Fifth Street) Bridge. Verified by actual field survey by Cranston Engineering Group, P.C. at Elev. 111.20 (NGVD 1988) on February 15, 2019 at 11:13 am EDT.
12. Resolutions by Augusta, North Augusta, Aiken County, and Columbia County.

Discrepancy in Definition of Existing Conditions Elevation

Note that a separate salient issue that materially skews the conclusions of the Corps's Report is that the Corps assumed the low side of the current normal operating level range as the "Existing" conditions at the NSBLD to compare its hydraulic models for the alternatives, which is one (1.0) foot lower than the actual operating levels reported by USGS for the average day. The real ordinary operating level is Elevation. 114.2, not 113.2 (NAVD 1988).

Problem Statement

The pool simulation was a prime opportunity to test the validity of the computer simulations models using the subject of those models: the Savannah River itself. On February 15, 2019, the

total water level drop in the reach from Fifth Street (111.23, NAVD 1988) to the Lock and Dam (110.28, NAVD 1988) was 0.95 feet.⁴ This amount is only one-third of the difference of 3.0 feet predicted by the Corps's 8,000 cfs model.⁵

Using the actual drop over the 12.0-mile reach and the corresponding flow rate occurring at the Lock and Dam at the time of 7,270 cfs just downstream from the Lock and Dam, the input values for the model can be tested.⁶

An additional test can be made using the measured flow rate of 5,422 cfs at the Augusta Canal Diversion Dam upstream for the same time frame.⁷ (See calculations under Analyses below.) This location is at the head of the Augusta shoals above the entrance to the reach in question; hence, the flow at the Canal Dam would be less than the real flow in the reach, because it does not include inflows from major creeks between the Canal Dam and the NSBLD.

A hypothesis to explain the observed discrepancies in water levels is that the Manning's "n" value, (the critical input value that quantifies the roughness of the channel in the basic Manning equation for open channel flow and used in the HEC-RAS simulations) does not reflect the actual physical conditions of the river bed and banks. Analyses of these observations will be performed to test the calibration of the HEC-RAS model.

Analyses

Values of Manning's "n" for the River Channel

The calculations on the following pages use a snapshot in time as a physical model to check the selection of Manning's "n" in the Corps's river channel in the HEC-RAS model for two measured flow rates that are a very similar bracket to the low flow conditions assumed by the Corps (5,000 cfs to 8,000 cfs) for Alternative 2-6d.

4 USGS Recording Gages 02196670, 02196999, and 02197000.

5 Corps of Engineers, Analysis Report, Appendix A, Table 8, p. A-41.

6 USGS Recording Gage 02197000. A corresponding flow rate of 5,422 cfs at the Augusta Canal Diversion Dam on the morning of February 15, 2019, supports the approximate flow through the reach. This does not include flows from major creeks between the Canal Dam and the NSBLD.

⁷ A corresponding flow rate of 5,422 cfs at the Augusta Canal Diversion Dam occurred on the morning of February 15, 2019.

Table 2: Manning’s “n” Values

Estimate Manning’s “n” from Drawdown					
Use snapshot in time as a physical model to check selection of Manning’s “n” in the Corps river channel model for Q= 8,000 cfs for Alt 2-6d.					
Observations:					
February 15, 2019, 11:13 am					
Givens:					
Water Surface Elevations @ . . .					
Fifth Street gage = 111.23 (1988) ^a					
Check: Cranston Survey = 111.20					
NSBL&D W.S. elev = 110.28 (1988) ^b					
Case I – Maximum Discharge 7,270 cfs					
Q = 7,270 cfs Downstream @ NSBL&D, from USGS ^c					
Depth at 5th ≈ 9.5 – 1 = 8.5' (approximate, based upon Corps' average depth) ^d					
Width at 5th ≈ 700' (approximate, scaled from Quad Sheet)					
River Mile at 5th – 199.5 ^e					
River Mile at NSBL&D – 187.5					
Velocity @ 5th = 0.08 fps (seems very small, might not be reliable; therefore ignore) ^f					
Assume Cross Section at 5th Street approximates the reach.					
A	=	d x w	8.5 x	700 =	5,950 feet ²
WP	≈	700 + 2(8.5)	= 17	=	717 feet
L	=	199.5 - 187.5	= 12 miles, or		63,360 feet
h	=	111.23 - 110.28		=	0.95 feet
S	=	0.95 / 63360		=	0.0000149937
V	=	Q/A	= 7270 / 5950	=	1.222 feet/sec
R	=	A/WP	= 5950 / 717	=	8.298
Manning's Equation					
V	=	1.486 / n	x R ^{2/3}	S ^{1/2}	
n	=	1.486 / V	x R ^{2/3}	S ^{1/2}	
n	=	1.486 / 1.222	= 1.216 x	4.099 x	0.00387 = 0.019
<u>Minimum "n" value</u>	=	<u>0.019</u>	*		
<u>* Compare to 0.033 and 0.031 used by the Corps.</u>					

Case II – Minimum Discharge - 5,422 cfs

$$Q = \begin{array}{r} 5,094 \text{ new}^9 \\ + \quad \underline{328 \text{ leakage through dam}} \\ 5,422 \text{ cfs} \end{array}$$

Depth at 5th $\approx 9.5 - 1 = 8.5$

Width at 5th $\approx 700'$ (scaled from Quad Sheet)

River Mile at 5th – 199.5

River Mile at NSBL&D – 187.5

Velocity @ 5th = 0.08 fps (seems very small, might not be reliable; therefore, ignore)

Assume that Cross Section at 5th Street approximates the reach.

$$A = d \times w = 8.5 \times 700 = 5,950 \text{ feet}^2$$

$$WP \approx 700 + 2(8.5) = 17 = 717 \text{ feet}$$

$$L = 199.5 - 187.5 = 12 \text{ miles, or } 63,360 \text{ feet}$$

$$h = 111.23 - 110.28 = 0.95 \text{ feet}$$

$$S = 0.95 / 63360 = 0.0000149937$$

$$V = Q/A = 5,422 / 5950 = 0.911 \text{ feet/sec}$$

$$R = A/WP = 5950 / 717 = 8.298$$

Manning's Equation

$$V = 1.486 / n \times R^{2/3} \times S^{1/2}$$

$$n = 1.486 / V \times R^{2/3} \times S^{1/2}$$

$$n = 1.486 / 0.911 = 1.631 \times 4.099 \times 0.00387 = 0.026$$

Maximum "n" value = 0.026 *

* Compare to 0.033 and 0.031 used by the Corps.^h

Conclusion:

The Corps' selections of Manning's "n" understate the water level drops in the reach (i.e. overstate the resulting stages). This is consistent with the dramatic drops observed on February 15, 2019, compared to their prediction of "one to two feet." In fact, the water level at 5th Street was three (3) feet lower than their prediction for Alternative 2-6d. (114.2 - 111.23 = 3.0')

References:

- a. USGS Recording Gage 02196670 (1988 Datum)
- b. USGS Gage 02196999 (1929 Datum)
- c. USGS Gage 02197000
- d. Corps Cross Section, powerpoint slide for Alt 2-6d. Less one foot, observed
- e. 1971 Corps Flood Hazard Report
- f. USGS Gage 02196670
- g. Records at Augusta Canal Diversion Dam. See next page hereof.
- h. Corps Report, February 2019. Appendix A, p. A-16

Check Q by Augusta Canal Diversion Dam

Elevation of crest = 157.1
Water level 2/15/19 = 158.1 ± ⁱ
Length = 1,650 feet

$Q = 3.087 L H^{3/2} = 913.087(1650)(1)^{3/2 j}$
Q = 5,094 cfs
Leakage through the dam = 328 cfs
TOTAL ESTIMATED FLOW = 5,422 cfs
Note: Augusta Canal was drained at the time.

Conclusion: Therefore, Q=7,270 cfs seems a reasonable estimate for the current purpose.

i. From Augusta Utilities Dept. records.

j. King & Brater, *Handbook of Hydraulics, Fifth Edition, p. 5-24.*

The analyses of the approximate test conditions show that Manning’s “n” probably lies between 0.019 and 0.026. These values are much different from either the 0.031 or 0.033 estimates used by the Corps.⁸ Their Draft Report states the following concerning this subject, “Manning’s n values for natural channels are difficult to quantify outside of a laboratory setting and are subject to the professional judgement and experience of the hydraulic engineer.”

Values of Manning’s ‘n’ for the Weir

The Draft Report also covers selection of Manning’s n values for the weir itself, adapting the figures from the rock weir structure of the Cape Fear River Dam Removal and Fish Passage, which ranged from 0.056 to 0.078, and “ultimately landed on a conservative n-value for the rock ramp of 0.08”⁹ (Emphasis added.) Their adopted value lies outside the range from which it was derived. In fact, for low flows the higher n-value is not conservative at all. It will predict higher upstream stages than would result from choosing a lower value. This would produce the same type of erroneous elevation difference between predicted and actual that was observed during the February 2019 drawdown.

Discussion of Results and Conclusion

The drawdown furnished the best “laboratory setting” of all, the full-sized physical model of the Savannah River itself. The river itself proved that the water level drop at Fifth Street was at least

8 Corps of Engineers, Analysis Report, Appendix A, p. A-15.

9 Draft Report, Appendix A, 2.1.2. Geometry Modifications, p. A-5.

three times that which the Corps's simulations had predicted.¹⁰ The real difference was 0.95 foot vs. the predicted difference of 3.3 feet, a variance of 2.35. Thus, the HEC-RAS model was off considerably in its prediction of the water surface elevation. This variation is very significant where small differences in elevation make big changes in usefulness of the waterway. The analyses above show that the discrepancy may be explained, at least in part, by a difference or inaccuracy in selection of the input values for Manning's "n".

In conclusion, the hydraulic models used in the Draft Report are obviously flawed and do not accurately represent the actual water surface profiles on the Savannah River, bringing into question all of the conclusions of the entire Corps Draft Report based on the flawed water surface profiles.

Respectfully submitted:

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Georgia PE No. 11289
South Carolina PE No. 7408

Peer Reviewed:

Richard E. McLaughlin, PE

SEALS:



¹⁰ One of the Goals and Objectives of the drawdown was to "verify the predictions made with the riverine model for the depth attenuation through the pool. If necessary, adjustments will be made to the model to better represent the actual conditions." See "Operation Plan for Fixed Weir Pool Simulation, Savannah Harbor Expansion Project Fish Passage at New Savannah Bluff Lock and Dam", January 25, 2019, pp. 2-3, copy in the Office of the Mayor, North Augusta, SC. Because the predictions and the actual conditions of elevation were grossly different, all of the hydraulic models are likely similarly wrong, so that adjustments must be made to model and all of its simulations that underlie the report. The report must be amended or republished. The Cities reserve the right to make additional comments when the corrected data is made available, because the Draft Report is erroneous.

APPENDIX D

Hydraulic Modeling and Discrepancies Observed During Drawdown

New Savannah Bluff Lock and Dam

Hydraulic Modeling and Discrepancies Observed During Drawdown

4/15/2019

Introduction

This memorandum summarizes an initial review related to the hydraulic modeling results and implications related to the prediction of the water surface elevations and hydraulics within the alternatives and upstream of the New Savannah Bluff Lock and Dam (NSBLD) as presented in the Savannah Harbor Expansion Project, Georgia and South Carolina: Fish Passage at New Savannah, Bluff Lock and Dam, Integrated Post Authorization Analysis Report and Supplemental Environmental Assessment, Dated February 2019 by the U.S. ARMY CORPS OF ENGINEERS SAVANNAH DISTRICT (USACE), herein referred to as the Draft Report. Note that water surface elevations upstream of the NSBLD are sometimes referred to as pool elevations as the river is impounded upstream of the NSBLD and is controlled by modulating the gates in the NSBLD to near lake-like or “pool” conditions over the vast majority of the time. Various alternatives including an alternative recommend by the USACE are presented in the Draft Report include modification or replacement of the lock and dam with a river-wide rock ramp or parallel rock ramp fish passage to provide passage for various species of fish including the Atlantic and Short Nose Sturgeon.

This initial review also compares hydraulic modeling results with gage data from the USGS recorded during the drawdown conducted during the third week of February 2019.

Other comments and observations on the Draft Report and drawdown including more detailed discussions on impacts of the observations and expert opinions expressed below are presented in the Technical Comments of the Cities of Augusta, Georgia and North Augusta, South Carolina, April 15, 2019 (Technical Comments), and in the Legal Comments of the Cities of Augusta, Georgia and North Augusta, South Carolina, April 15, 2019 (Legal Comments).

General Observations and Opinions

The following observations are based upon information provided in the Draft Report, HEC-RAS hydraulic models provided by the USACE, various calculations, and expert opinion.

GO-1. Lowering the Upstream Pool.

All presented alternatives presented will lower the historic water surface elevations and decrease the depths within the upstream pool. All alternatives will lower the pool surface water elevation. Some alternatives will lower the upstream pool through an approximately 17-mile-long upstream reach of the Savannah River. All will increase velocities in the pool upstream of the NSBLD. Lowering of the pool and resulting affects is the most significant impact to the upstream reach through the greater Augusta area, particularly both Augusta and North Augusta. Impacts from lowering of the pool have significant detrimental implications as outlined in the Technical and Legal Comments.

Because of the importance and obvious sensitivity, supporting prediction in the upstream pool elevation in the evaluation of alternatives should be paramount in the development, analysis, evaluation, costing, and ultimate selection of the alternatives.



Figure 1
Photo Taken During the Drawdown

Lowering of historic water surface in the pool upstream of the NSBLD was predicted in the Draft Report, however the degree of the lowering of the pool elevations upstream were vastly under-predicted by the Corps as outlined below. The extent upstream of the lowering was not presented for each alternative.

Presented alternatives that include a river-wide rock ramp fish passage, and in some cases the other alternatives, will also:

GO-2. Increase Flooding

Alternatives will result in increases in upstream water surface elevations experienced during flood flows and/or significant excavation and construction of a channel (referred to in some alternatives as a Floodplain bench) in the park adjacent to the NSBLD (NSBLD Park). This excavation is needed to create a “floodplain bench” – essentially an overflow channel or flood conveyance channel. This a result of efforts to off-set the reductions in flood capacity (conveyance) resulting from placing tens of thousands of cubic yards of rock and fill within the river bed to form the rock ramp fish passage.

Alternatives that increased the 100-year flood level were reportedly dropped from consideration. However, invalid or questionable assumptions related to fish passage requirements and the acceptability of eliminating most of the NSBLD Park and its desirable attributes may alter or eliminate the presented alternatives. Some hydraulic analysis was presented for lesser flood flows (such as the 2-year) that occur more frequently and are known to cause damage to land owners, however these results were not adequately included in the assessment of impacts, costs, or selection criteria of the alternatives.

GO-3. Increase Fluctuations in the Seventeen Mile Reach

All alternatives will increase the variability in the water surface upstream of the dam in the pool. The pool level will fluctuate much more frequently below flows of 25,000 cfs or about 95% of the time. Current stability in the pool elevation is provided by the five 60-foot long vertical gates of the NSBLD that are operated to manage pool levels, thereby creating stable lake-like conditions upstream of the dam.

Identification and related significance of this issue was not made in the Draft Report. Evaluation, presented data, analysis, impacts or mitigation efforts and costs, and related criteria were not provided in the Draft Report. Criteria of 0.5 ft/day of variation was stated in the Operation Plan for Fixed Weir Pool Simulation, Savannah Harbor Expansion Project Fish Passage at New Savannah Bluff Lock and Dam, January 25, 2019, however failure of a wall occurred during the drawdown and no application or evaluation of this criteria for future conditions was provided.

GO-4. Sediment Impacts and Scour

Alternatives will decrease the sediment carrying capacity, impact the sediment bed, and change bathymetry and benthic conditions upstream of the NSBLD. In addition to stabilizing the elevation of the pool upstream of the NSBLD, the combined 300 feet of large gates act as sediment sluicing gates as they draw off the bottom of the channel. This substantial sluicing system will be eliminated in the presented alternatives. Evaluation of the increased deposition due to removal of the gates, such as sediment transport modeling, was not provided.

Qualitative opinion was presented supporting a conclusion of no significant impact, however based upon experience including extensive multi-dimensional sediment modeling efforts on a recent project on another river with a sediment-trapping upstream reservoir, acceptance of the provided opinion with no supporting analysis is not prudent or acceptable.

GO-5. Require Construction Related Hydraulic Analysis

Hydraulic analysis was not conducted for conditions created during the construction of the rock ramp or project accoutrements. Significant structures possibly as tall or taller than the existing dam, such as coffer dams and divider berms will be needed during construction. Large bypass channels and/or widening of the river adjacent to the rock ramp will also likely need to be constructed around the proposed rock ramp dam through the NSBLD Park and along the south bank to convey the large and continuous flows during construction. Structures needed to control water during the construction phase will be extensive and impactful to project costs, impacts to surrounding and upstream areas, sediment releases, aquatic resources, etc.

Hydraulic analysis is needed and appropriate at this phase as considerations will impact the development, analysis, evaluation, and selection of the recommended alternative.

As a result of impacts related to these and other issues, most all recreational uses of the pool will be significantly diminished, conditions of banks will be altered, aesthetics negatively impacted, property values may decrease, and other economically impactful consequences will occur. These are more thoroughly described in the Technical and Legal Comments.

Prediction of Pool Lowering

The Draft Report included estimates of impacts, namely lowering of the pool upstream of the NSBLD for the various alternatives furthered for consideration in the selection of their Recommended Alternative. These predictions were based upon hydraulic modeling using a program called HEC-RAS. The HEC-RAS model is appropriate for this level of analysis as well as much more refined analysis and is the standard of the industry and likely the most used hydraulic model for these types of projects in the country. However, reliable results of this or any other hydraulic model are dependent upon:

- Modeling the appropriate range of conditions,
- Appropriate selection of a wide variety of input parameters such as the Manning's Roughness Coefficient or "n" value, and
- Appropriate accuracy of the geometry.

Historic Water Surface Elevations

Establishment of existing or historic water surface elevations is critical to any evaluation of impacts. Within active rivers, this relates to a range of water surface elevations as the elevations can vary with flow, or in this case, by adjustment of the gates in the NSBLD. For this and many projects that include recreational uses and aesthetic consideration of a pool upstream of a dam, rock ramp, or other impounding structure, these flow ranges can be considered:

- **Minimum Levels.** Minimum or at least extreme lower levels of pool elevations are critical for historic and existing recreational uses and aesthetic considerations.
- **Typical Levels.** Normal pool levels can also be evaluated for comparative purposes.
- **Flood Flows.** Higher pool elevations occur during high flow ranges including various levels of flood flows. These are typically referenced by a probably type rating such as the 2-year, 10-year, 100-year, and even higher events. The definition of this nomenclature can be confusing, but as an example, a flow at least as high as the 10-year event will, on the average, occur once every 10 years.

Dams upstream of the greater Augusta area and the large upstream hydrologic basin provide this reach of the Savannah River with relatively consistent levels of flows as compared to many rivers. These consistent flows combined with the significant regulation of the pool elevations provided by the operation of the large gates at the NSBLD provide for near lake-like conditions in the pool upstream of the NSBLD.

Appropriate Flows for Alternative Evaluation

The Draft Report often references and reports pool elevations based upon a normal flow rate of 5,000 cfs. From the Draft Report: *"The flow used to evaluate the project impacts, with the exception of impacts to water supply intakes, is 5,000 cfs, the low average of the normal flow."* It is not clear why this flow rate was selected and we are not aware of a definition for *"the low average of the normal flow"*. However, flows lower than this occur over 25% of the time. This can be observed on Figure 7 of the Draft Report. **One-quarter of the time is very significant.** It can also be observed on this figure that the curve is quite "flat" from 3,600 (0.1%) to 8,000 cfs (66%). This again indicates that flows within this range occur much (66%) of the time and that there is a steep drop-off after 3,600 cfs.

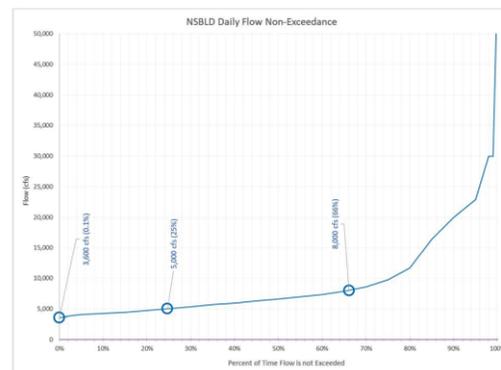


Figure 2
Non-Exceedance Curve from Draft Report

Pool Elevations at the NSBLD

On page 18 of the Draft Report it states that: “*The gates at NSBLD are used to help maintain a pool elevation between 111.2 and 114.2 NAVD88 upstream of the dam and are operated remotely from J. Strom Thurmond Dam*”. The report also states that flows are controlled up to 25,000 cfs. Furthermore, the basis of comparison used for the alternatives is 113.2 at the NSBLD. This is shown in Figure 3 which comes from Table 8 on page A-41 of the Appendix A of the Draft Report and can be verified in descriptions of the Alternatives such as in this description of the results for Alternate 2-6d.

*A hydraulic model (HEC-RAS) of the Savannah River incorporating the geometry configuration of this alternative was used to compute water surface elevations, depths, velocities, and flooding extents for the with-project condition. A range of flows for normal conditions (3,600cfs to 8,000cfs) and flood conditions (50% to 1% ACE) were evaluated using the hydraulic model. The results of the model indicate that this alternative would provide normal pool elevations between 109.7 and 110.9 NAVD88 near the lock and dam, with an elevation of **110.2 NAVD88 (3.0ft lower than existing) being representative of normal conditions**. The pool at 5th St. Bridge would be around elevation 112.4 NAVD88 (1.9 feet lower than existing) during normal flow conditions. Figure 31 shows where this alternative aligns slightly below the existing condition band.*

Adding three feet to the reported elevation of 110.2 (also shown in Figure 3 @ 5,000cfs) yields a water surface elevation upstream of the NSBLD of 113.2. This elevation does not appear to be supported by a provided statistical analysis. Such an analysis is readily easy due to the proximity of USGS gages; however, one was not readily found in the Draft Report.

USGS Gages Referenced

There is a stream gage (2197000) downstream of the NSBLD that records flow and water surface elevation, one upstream (2196670) that records water surface elevation, and one (2196999) at 5th Street Bridge that records water surface elevation. Note that the lower two gages (2197000) (2196670) record elevations in NVGD29 and 0.8' is subtracted from elevations provided at these gages to arrive at the NAVD88 datum as covered in the Draft Report.

Reduction of the Pool Elevation upstream of the NSBLD

A cursory check was made based upon data available off the USGS website. The analysis included about four years of data starting in March 16th of 2015 through March 12th, 2019 and included 15-minute increments. This date range was used as a quick check and a more in-depth analysis using a longer period of record and a review of the hydrology is needed. Based upon this limited range, an average of water surface elevation of 114 resulted. This elevation or higher also occurred about 50% of the time. **A water surface elevation of 113.2 or lower only occurred less than 5% of the time** over this four-year period.

In conclusion, the referenced water surface elevation of 113.2 is not justified and appears to be lower than gage records indicate.

Pool elevations for the various alternatives including the SHEP are shown below in Figure 3 and were provided in Table 8 on page A-41 and A-42 of Appendix A of the Draft Report. Some results of various alternatives are plotted in Figure 4.

113.3 and 115.3 National Geodetic Vertical Datum 1929 (NGVD29; 112.5 and 114.5 North American Vertical Datum of 1988 [NAVD88]) at the dam under the range of "normal" flows ("average" normal pool of 114.5 NGVD29). (NAVD 88)								
Pool Elev @ 3600 cfs (NAVD88)								
Station	Existing	SHEP	Alt 1-1	Alt 2-6a	Alt 2-6b	Alt 2-6c	Alt 2-6d	Alt 2-8
NSBLD	113.2	112.7	111.6	111	107.9	108.8	109.7	111.1
5th Street Bridge	113.9	113.5	112.5	112.1	110.5	110.9	111.4	112.2
Pool Elev @ 5000 cfs (NAVD88)								
Station	Existing	SHEP	Alt 1-1	Alt 2-6a	Alt 2-6b	Alt 2-6c	Alt 2-6d	Alt 2-8
NSBLD	113.2	113.2	112.1	111.6	108.3	109.3	110.2	111.9
5th Street Bridge	114.3	114.2	113.5	113.2	111.6	112	112.4	113.4
Pool Elev @ 8000 cfs (NAVD88)								
Station	Existing	SHEP	Alt 1-1	Alt 2-6a	Alt 2-6b	Alt 2-6c	Alt 2-6d	Alt 2-8
NSBLD	113.2	113.2	113.1	111.8	109.1	110	110.9	112.5
5th Street Bridge	115.3	115.3	115.2	114.6	113.6	113.9	114.2	114.9
Pool Elev @ 50% Annual Chance Exceedance (2-year) (NAVD88)								
Station	Existing	SHEP	Alt 1-1	Alt 2-6a	Alt 2-6b	Alt 2-6c	Alt 2-6d	Alt 2-8
NSBLD	114.8	114.6	114.6	115.3	114.1	114.5	114.8	114.5
5th Street Bridge	122.6	122.5	122.5	122.7	122.5	122.5	122.6	122.5

Figure 3
Summary Table of Alternatives – Data from Table 8 on page A-41 of Appendix A of the Draft Report

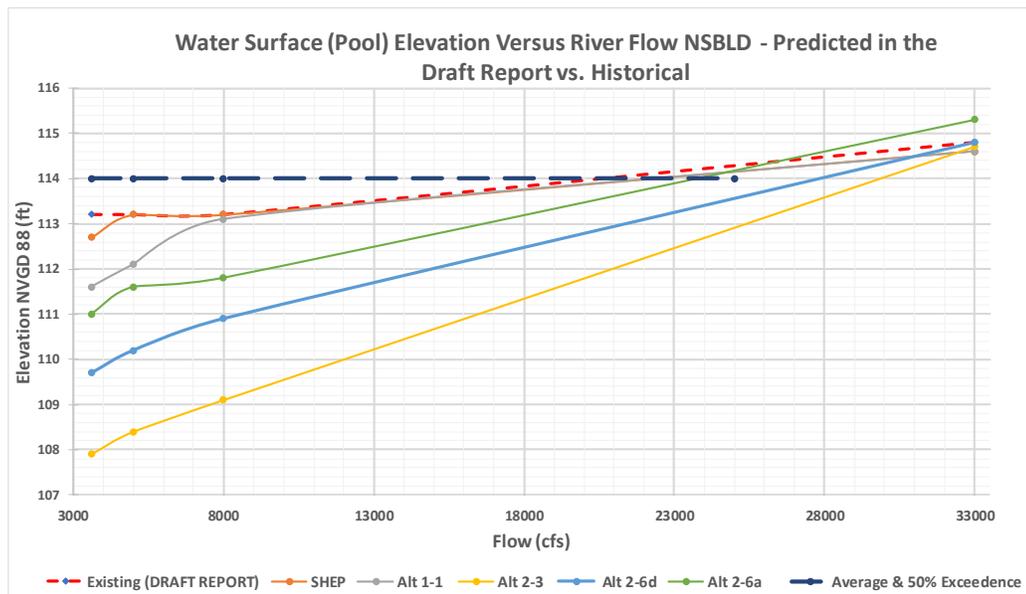
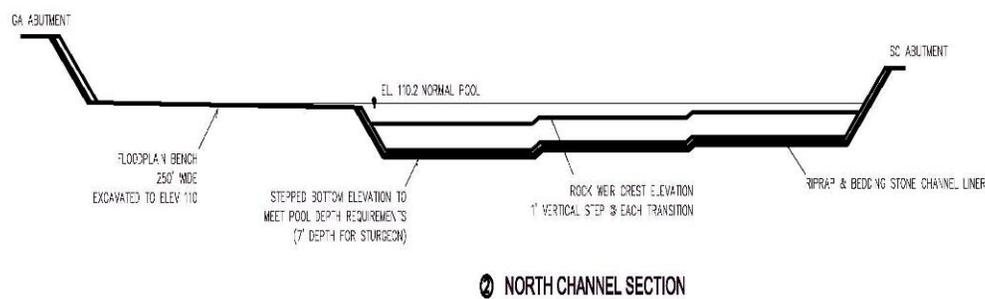


Figure 4 -Pool Elevations Upstream of the NSBLD – as Provided in Table 8 of the Appendix A of the Draft Report

Based upon the provided data and stream gage records, the rock ramp alternatives will result in a much lower pool elevation upstream of the NSBLD than historical conditions.

Rock Ramp

Review of the modeling that is used to predicted water surface elevations just upstream of the NSBLD for the alternatives was not reviewed in detail. At the proposed grade of 2% and the roughness coefficients provided, it is likely that the flow will be in a supercritical state, or at least go through critical depth at the crest of the rock ramp. Therefore, of primary concern is the configuration of the crest of the rock ramp. Figure 5 is a cross-section of the rock ramp fish passage of alternative 2-6d from the Draft Report. All the rock ramps in the various alternatives with rock ramps appear to be of a similar configuration.



② NORTH CHANNEL SECTION
NTS

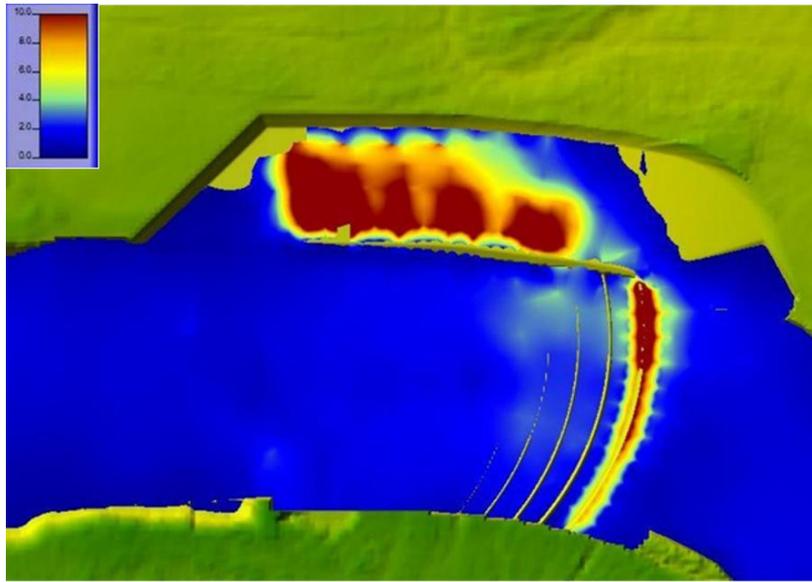
Figure 5

Crest Section of the Rock Ramp (Alternative 2-6d)

Figure 6 is a velocity output of the HEC-RAS model for Alternative 2-6d. The model provides estimation of the crest accurately because the geometry of the crest has a substantial impact on the water surface elevations predicted for the various alternatives with a rock ramp.

The Draft Report states that “*The weir would have an average crest elevation of 108.2 feet (NAVD88, 109.0 NGVD29).*” Concerns regarding the predicted high velocities in the fish passage and shallow depths at the crest may not be satisfactory to pass the targeted species. Therefore, the alternative concept for the crest and resulting rock ramp fish passage, as presented in all the alternatives with a river-wide rock ramp fish passage, may not satisfy passage requirements. While there are several ways to reduce velocities and increase depths, adaptations are likely to have a significant impact on the ability of the crest (of the rock ramp) to maintain the upstream pool elevations during lower flows while not raising flood flows or requiring further conveyance structures around the rock ramp.

Adaptations to the crests of the alternatives with a full-river width rock ramp may be necessary to create effective passage of target fish species. These adaptations are likely to require changes in the alternatives, lower upstream pool elevations more than currently predicted, cause other impacts, and ultimately influence a well-informed selection process.



*Figure 6
Velocity Output Figure of Alternative 2-6d at 8,000 cfs*

Reduction of the Upstream Pool Elevation

Comparison of water surface elevations at the 5th Street gage were emphasized in the descriptions and evaluations of the alternatives. Furthermore, there is a USGS Gage on the 5th Street Bridge that records the water surface elevation. For consistency and brevity, we will also focus on the impacts to the water surface elevation at 5th Street to somewhat quantify impacts farther upstream of the NSBLD.

Drawdown

A drawdown was conducted during the third week of February. The goals and objectives were stated in the Operation Plan for Fixed Weir Pool Simulation Savannah Harbor Expansion Project Fish Passage, at New Savannah Bluff Lock and Dam January 25, 2019.

This document states that:

There are several objectives for the simulation, outlined below, that will benefit the Corps and members of the public:

- 1. Demonstrate to the public and stakeholders in the Augusta and North Augusta area the anticipated pool level and extent with a fixed crest weir in place of the NSBLD during average flow conditions (between 5,000 and 8,000 cfs). This simulation would allow the public and stakeholders to view the projected pool conditions for the recommended alternative for the SHEP Fish Passage Project (2-6D).*
- 2. Verify the 2018 hydraulic analysis and calculations that concluded lowering the pool causes no issues with municipal and industrial water intakes located along the river within the pool. Communications with each water user will take place before, during, and after the simulation.*
- 3. Verify the predictions made with the riverine model for the depth attenuation through the pool. If necessary, adjustments will be made to the model to better represent the actual conditions.*

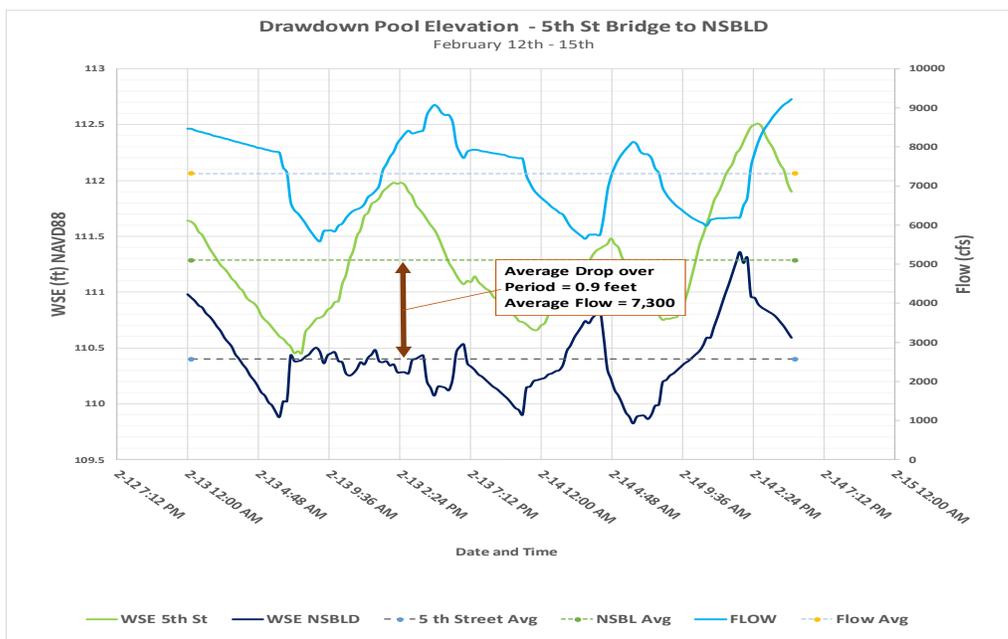
4. Review the depths of the training wall and validate the areas that may need marking for compliance with Section 106 for historically significant cultural resources.
5. Capture aerial imagery of the simulated pool to further improve the shoreline mapping tool. The shoreline mapping tool was presented during a public meeting in November 2018 and can be found online at: <http://water.sas.usace.army.mil/nsbld/>.

The document goes on to state that:

The target pool level for the simulation is elevation 111 ft NGVD29 (converts to 110.2 NAVD88) as measured and observed at the USGS gage located just above the NSBLD (02196999). This is 1.5 feet below the normal minimum operating range at the NSBLD.

The pool WILL NOT be lowered quickly. It will be lowered slowly over several days targeting a pool change of no more than 0.5 ft per day. Lowering the pool slowly will ensure the river bank remains stable during the simulation.

Verification of the “riverine model for depth attenuation within the pool” has not been received as of this date. To review the accuracy of the HEC-RAS hydraulic modeling, we have reviewed gage data just upstream of the NSBLD and at 5th Street. Results of this review are shown in Figure 7. Figure 7 includes just a portion of the gage data during the drawdown. An extended plot of the gage data shows higher fluctuations in the flows and water surface elevations at the gages before and after the period shown from 2/13/2019 to 2/14/2019. Even during this period, there are fluctuations in flow and water surface elevations, however review of the gage data in other ways showed similar results. While there is error in applying steady state results to unsteady conditions and in how the gage data is interpreted, this initial review should be useful in interpreting impacts at this juncture and in driving home the needs for further investigation and to determine if further reconfiguration or redevelopment of the alternatives is prudent.



*Figure 7
Observed Water Surfaces during the February Drawdown*

The average flow during this period was about 7,300 cfs. The average pool elevation just upstream of the NSBLD was 110.4 (NAVD88) and the average elevation was 111.3 (NAVD88) at the 5th Street Bridge. These flows and surface water elevations are shown on Figure 7.

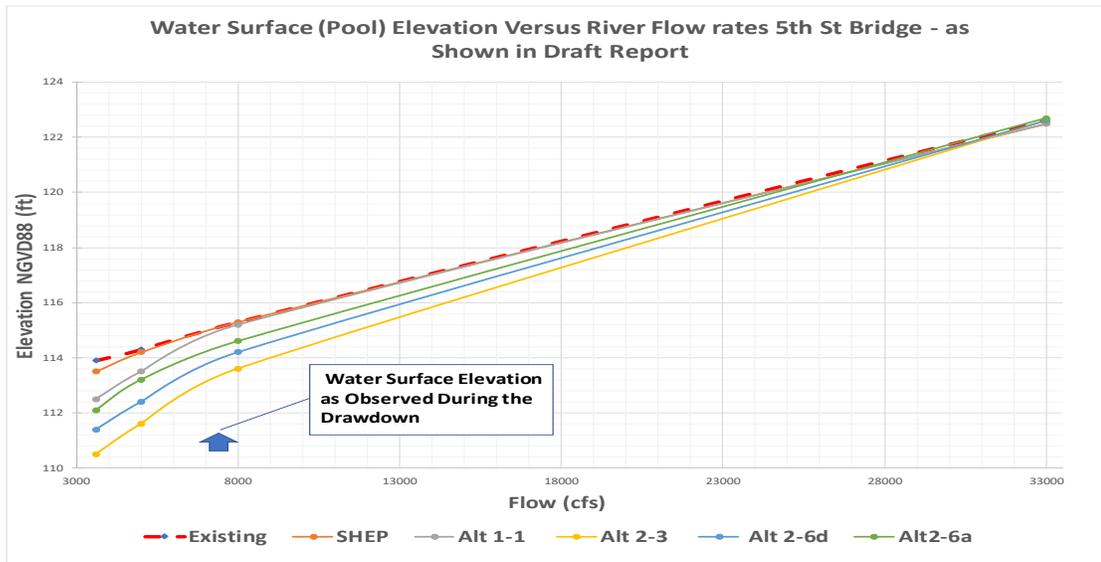


Figure 8
Predicted Pool Elevations at 5th Street

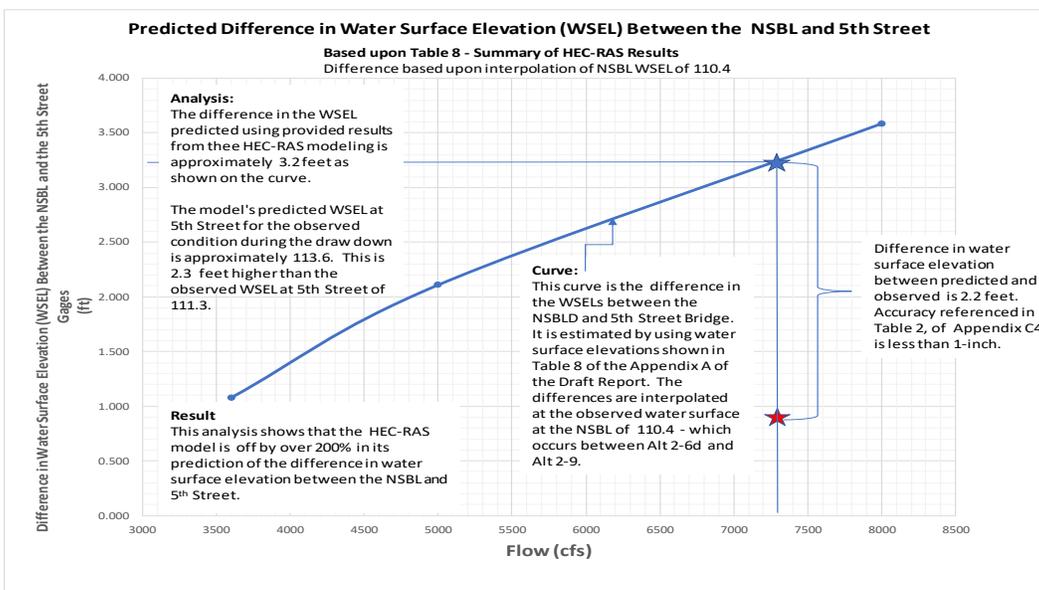


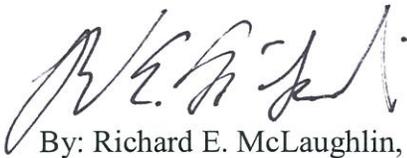
Figure 9
Comparison of Observed and Predicted Pool Elevations at 5th Street

In reviewing and comparing Figures 7, 8, and 9, it can be concluded that the elevations observed during the drawdown in the Pool at 5th Street are significantly lower than those predicted by the hydraulic model and presented in the Draft Report. The difference in water surface elevations between the gage just upstream of the NSBLD and that at 5th Street, is a practical and useful parameter in the evaluation of the accuracy of the HEC-RAS hydraulic modeling conducted by the USACE. The model predicted over three feet of difference in the water surface elevation between the gages, whereas the observed difference as estimated herein is less than one foot.

While this estimate may ultimately prove to be higher or lower, an error of a small fraction of this would not be acceptable – both in terms of modeling accuracy and for the purposes of developing, analyzing, evaluating, and selecting an alternative.

This represents an error of over 200% in the modeling accuracy.

It is likely that the selected Manning's Roughness Coefficient used in the HEC-RAS modeling in the impounded reach upstream of the rock ramp is too high and doesn't account for the depth of flow. However, given the recreation, economic, environmental, and other impacts related to decreases in the pool elevation; calibration and validation of the hydraulic model should have been conducted before the evaluation and even development of the alternatives.



By: Richard E. McLaughlin, P.E.



APPENDIX E
Savannah River Sediment Chemistry Data

Table of Savannah River Sediment Chemistry Data
River Miles 202, 298, and 190.
2006-2008

Note: Refer to Section I.2. for explanatory narrative.

Average concentrations from sediment samples

	RM 215	SC	RM 202	RM 198	HC	RM 190	BC	RM 185	RM 179	RM 148	RM 119	RM 61	units
% Solids	74.7	69.3	62.5	76.1	75.3	76.8	37.1	77.1	75.0	77.6	77.2	80.3	%
2,4,5-T	ND	28	35	ND	ND	ND	568	ND	ND	ND	ND	ND	ug/kg
2,4,5-TP (Silvex)	ND	17	120	ND	25	ND	ND	ND	22	ND	ND	ND	ug/kg
2,4-D	ND	ND	ND	ND	ND	ND	850	ND	ND	ND	ND	ND	ug/kg
2,4-DB	22	ND	440	89	ND	ND	ND	33	43	ND	ND	ND	ug/kg
4,4'-DDD	ND	ND	ND	ND	ND	ND	18	ND	ND	ND	ND	ND	ug/kg
4,4'-DDE	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.5	ND	ND	ug/kg
4,4'-DDT	ND	ND	ND	ND	ND	ND	25.0	ND	ND	ND	ND	ND	ug/kg
Aldrin	1.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/kg
alpha-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/kg
alpha-Chlordane	ND	ND	1.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/kg
Aroclor 1016	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/kg
Aroclor 1221	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/kg
Aroclor 1232	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/kg
Aroclor 1242	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/kg
Aroclor 1248	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/kg
Aroclor 1254	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/kg
Aroclor 1260	ND	ND	ND	ND	ND	ND	270	ND	ND	ND	ND	ND	ug/kg
Arsenic	1.2	1.0	1.2	0.8	0.8	0.7	3.9	0.5	0.9	0.9	0.8	0.6	mg/kg
beta-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/kg
Cadmium	0.0	0.1	0.0	0.0	ND	0.0	1.1	0.0	ND	0.1	0.1	0.0	mg/kg
Calcium	422.5	390.0	1117.5	262.5	102.0	265.0	2225.0	210.0	302.5	198.0	255.0	220.0	mg/kg
Chromium	9.9	10.5	13.7	7.5	24.3	4.4	32.5	5.4	3.8	3.2	4.4	2.6	mg/kg
Copper	2.3	4.9	8.0	2.3	2.2	1.5	33.2	1.7	1.3	0.9	1.5	0.8	mg/kg
Dalapon	ND	ND	ND	ND	ND	ND	ND	450.0	ND	550.0	ND	ND	ug/kg
delta-BHC	ND	ND	7.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/kg
Dicamba	ND	ND	57.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/kg
Dichloroprop	ND	ND	132	170	ND	20	13000	ND	38	24	20	ND	ug/kg

	RM 215	SC	RM 202	RM 198	HC	RM 190	BC	RM 185	RM 179	RM 148	RM 119	RM 61	units
Dieldrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/kg
Dinoseb	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/kg
Endosulfan I	ND	ND	2.2	ND	ND	ND	1.9	ND	ND	ND	ND	ND	ug/kg
Endosulfan II	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/kg
Endosulfan sulfate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/kg
Endrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/kg
Endrin aldehyde	ND	ND	ND	ND	ND	1.0	ND	ND	1.2	ND	ND	ND	ug/kg
Endrin ketone	ND	ND	ND	ND	ND	2.6	ND	ND	ND	ND	ND	ND	ug/kg
gamma-BHC (Lindane)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/kg
gamma-Chlordane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/kg
Heptachlor	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/kg
Heptachlor epoxide	1.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/kg
Iron	5400	7550	12500	4750	3025	3350	21375	3125	3225	2475	3650	2400	mg/kg
Lead	2.0	3.4	5.4	3.2	3.0	1.6	54.3	1.6	1.5	1.3	1.7	1.4	mg/kg
Magnesium	230.0	477.5	1377.5	425.0	130.0	108.7	1707.5	140.0	115.3	94.0	190.0	94.0	mg/kg
Manganese	1325.0	390.0	1555.0	735.0	73.8	465.0	1065.0	1375.0	1242.5	900.0	925.0	345.0	mg/kg
MCPA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/kg
MCPP	ND	ND	ND	4700.0	ND	ND	160000.0	ND	ND	ND	ND	ND	ug/kg
Mercury	ND	ND	ND	ND	ND	ND	0.5	ND	ND	ND	ND	ND	mg/kg
Methoxychlor	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/kg
Nickel	4.1	3.4	9.7	4.4	3.8	3.8	16.3	1.9	3.0	2.4	2.5	1.2	mg/kg
Potassium	170.0	327.5	1075.0	200.0	88.7	81.0	1177.5	105.3	88.5	73.0	123.5	50.0	mg/kg
Selenium	0.2	ND	0.4	0.3	ND	0.4	0.9	0.9	0.5	ND	ND	0.4	mg/kg
Sodium	50.0	93.0	133.0	89.5	95.0	84.0	623.3	82.7	76.7	88.0	30.5	61.0	mg/kg
TOC	145.0	1130.0	1400.0	1050.0	915.0	535.0	36145.0	450.0	8750.0	490.0	615.0	260.0	mg/kg
Toxaphene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/kg
Zinc	13.2	27.5	55.3	26.7	19.0	24.6	272.8	22.7	18.5	26.7	31.5	25.5	mg/kg

APPENDIX F

*River Vision Plan for the Savannah River for the City of Augusta, April
2019.*



River Vision Plan

for the Savannah River for the City of Augusta



April 2019

TABLE OF CONTENTS

I. RIVER VISION STUDY

Introduction Project

Goals Background

Historical Context and Existing Uses

River Activation and Upland River Reach Concepts

Community Benefits

Whitewater Concepts at NSBLD Next

Steps

II. APPENDICES

Appendix A – Concept 1 Whitewater Course with Dam

Appendix B – Whitewater Venue Concept

Appendix C – River Vision Concept

Appendix D – Economic Memorandum

SECTION I – River Vision for the Savannah River

INTRODUCTION

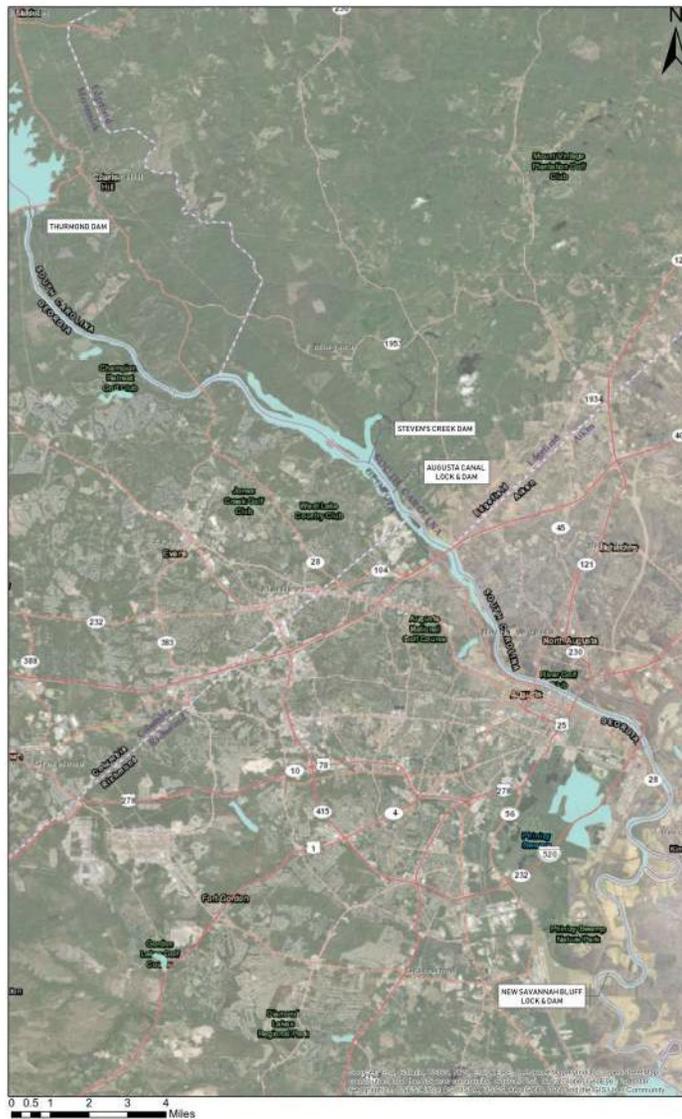
In 2018, The City of Augusta, Georgia engaged the Mclaughlin Whitewater Design Group and their team of consultants to develop a vision for the section of the Savannah River from the Thurmond Dam area down to the New Savannah Bluff Lock and Dam Park. This vision involves developing an in-river and river bank activation concept, focused on downtown Augusta, as well as evaluating the feasibility of adding a whitewater park to the New Savannah Lock and Dam Park (NSBLD Park). The park site itself is adjacent to the historic Lock and Dam structure. The United States Army Corps of Engineers (Corps) is proposing to remove the Lock and Dam and convert the NSBLD Park into a floodplain bench. The Corps's evaluation and work is ongoing, however the study of a whitewater venue at this location was evaluated prior to the release of the Corps's current preferred alternative. The Corps's current alternative eliminates most of the NSBLD Park and negates the opportunity of a whitewater venue at the NSBLD Park. The preservation of the park is keenly important to the overall vision plan described in this document. The park site is the anchor to the entire 36-mile vision plan, and it is our hope that through the Corps's process, the NSBLD Park will be maintained, and the future potential of the park can be realized.

The feasibility study and concept alternatives were developed with the following primary project goals:

- Healthy Ecosystem – connect upstream and downstream reaches and provide passage for sturgeon, shad, and bass.
- Safety – improve the safety of the river for all users.
- River/Whitewater Recreation – A basic objective identified was to connect upstream and downstream reaches for recreationalists. At the high end of the recreation spectrum, a “destination” whitewater park alternative was developed, with an objective to improve river access along the entire river reach.
- Utilize the Corps's Proposed Alternative – The Corps's objective at NSBLD is to create fish passage while maintaining current pool elevation and recreational components along the river reach. They have five (5) alternatives in total, with one (1) the preferred alternative. The City requested that we use a non-preferred alternative for the final concept.

PROJECT GOALS

The overarching goals of the River Vision Plan are to identify new recreation opportunities that capitalize on the benefits of the Savannah River as an underutilized asset for the city of Augusta. This vision plan will include nearly a 36-mile stretch of the Savannah River, beginning at Thurmond Dam area, then down through the heart of Augusta, continuing along a picturesque stretch of river to the NSBLD Park. This recreation corridor will identify new areas of connectivity to the river, highlight opportunities for enhanced recreation, and provide new social activities that utilize the river. The recreation corridor, once established, can have a significant impact on the city of Augusta by improving the economy and improving the quality of life for the residents and visitors through new ways to recreate, socialize and entertain. Figure 1 shows the stretch of river included in this vision.



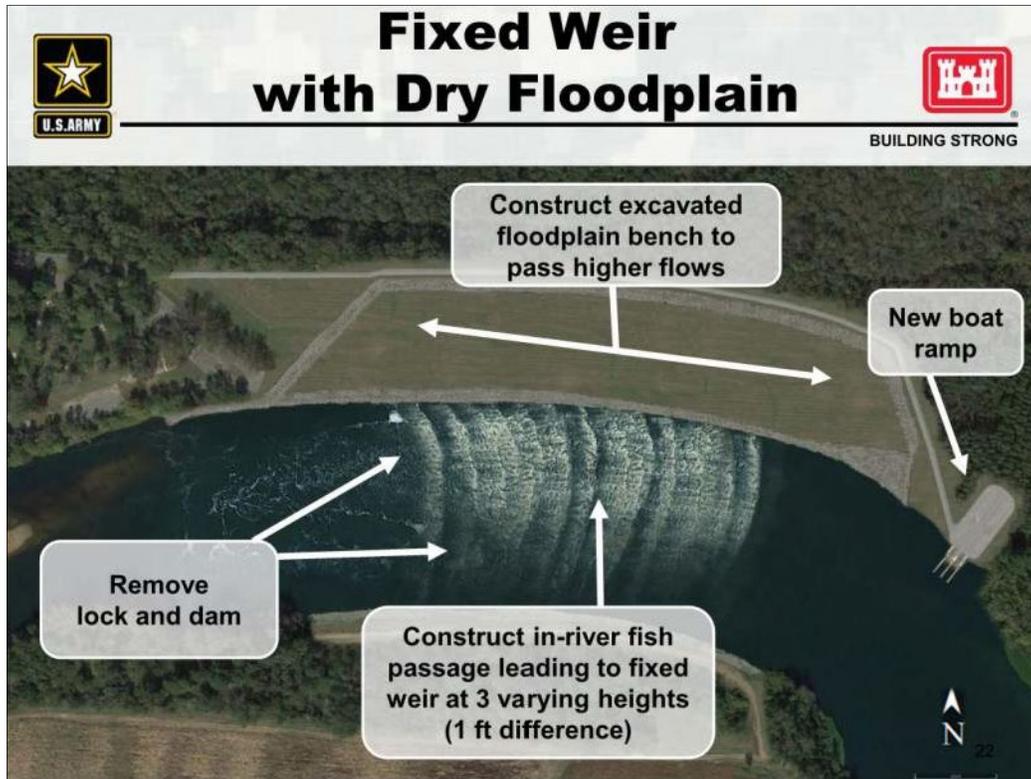
1. *Figure 1 - River Reach Vicinity Map*

BACKGROUND

Necessary elements for whitewater are flow, drop, and access. The stretch of river between Thurmond Dam and New Savannah Bluff Lock and Dam has all the required elements to create several world class whitewater courses. Along with current plans for modifications to the NSBLD, Steven’s Creek Dam and the Augusta Canal Diversion Dam are also slated for future modification that may include fish passage and river habitat restoration. These projects provide a regional wide opportunity to create a river recreational corridor from Thurmond Dam to New Savannah Bluff Lock and Dam.

With existing infrastructure along the reach, which includes river trails and docks, and potential future plans, some of which are discussed in this study, there is incredible potential to create a river recreationalist’s dream with multiple exit points along the way for users to explore the city, stop for food, and enjoy other activities along the shoreline. Additionally, the New Savannah Bluff Lock and Dam Park’s proximity to the Levee trail make it the perfect candidate for a unique destination for river recreation, outdoor adventure, and exploration. With Corps’s current plans for the NSBLD, the city of Augusta hopes to use the opportunity to improve the Park and turn it into a whitewater venue and implement some of the ideas explored in their Augusta Destination Blueprint Plan, Events Plan, and the 2016 Parks Master Plan.

The current Corps’s preferred plan is to remove the lock and dam and replace it with a fixed weir for fish passage. To maintain a similar pool elevation and mitigate flooding, the plan is to excavate the park and turn it into a dry floodplain. Their alternatives were designed to address required mitigation solutions due to SHEP and satisfy the WIIN Act. See Figure 2 below for a visual of the Corps’s preferred alternative (Alternative 2-6d).



2. Figure 2 – Corps’ Preferred Plan

This plan is seen to adversely impact the City of Augusta and they want to see an alternative plan chosen. The whitewater concept created for this study uses the Corps’s Alternative 1-1 design, which is discussed later in this study.

HISTORICAL CONTEXT AND EXISTING USES

The residents of Augusta enjoy the river reach though a variety of activities. There are a number of hike and bike trails, such as the Augusta Canal Historic Trail and River Levee Trail, and boating activities are a popular pastime on the water. A private marina and rowing center provide direct access to the river, and many people kayak at the shoals. An Iron Man race is also held each year in front of the Riverfront Marina Warehouse. Public access is limited to boat ramps at the NSBLD Park, which are an important historical and cultural space for the City.

In 1906 the Augusta Levee was constructed to control flooding in downtown Augusta, Georgia, and expanded in 1936. Initially, the Levee greatly restricted the public’s access to Augusta’s riverfront from downtown to the mouth of Butler Creek, but with the 1937 completion of the New Savannah Bluff Lock and Dam, and the adjacent, the Corps’s public Park provided direct access to the Savannah River.

The Corps’s creation of this public space allowed the locals a place to interact with the river for these past several decades. It has been a point of access for fishing, boat launching, and a gathering place for

the entire community. Indeed, its importance to the City, especially those who reside in South Augusta where fewer recreational amenities are available, cannot be understated.

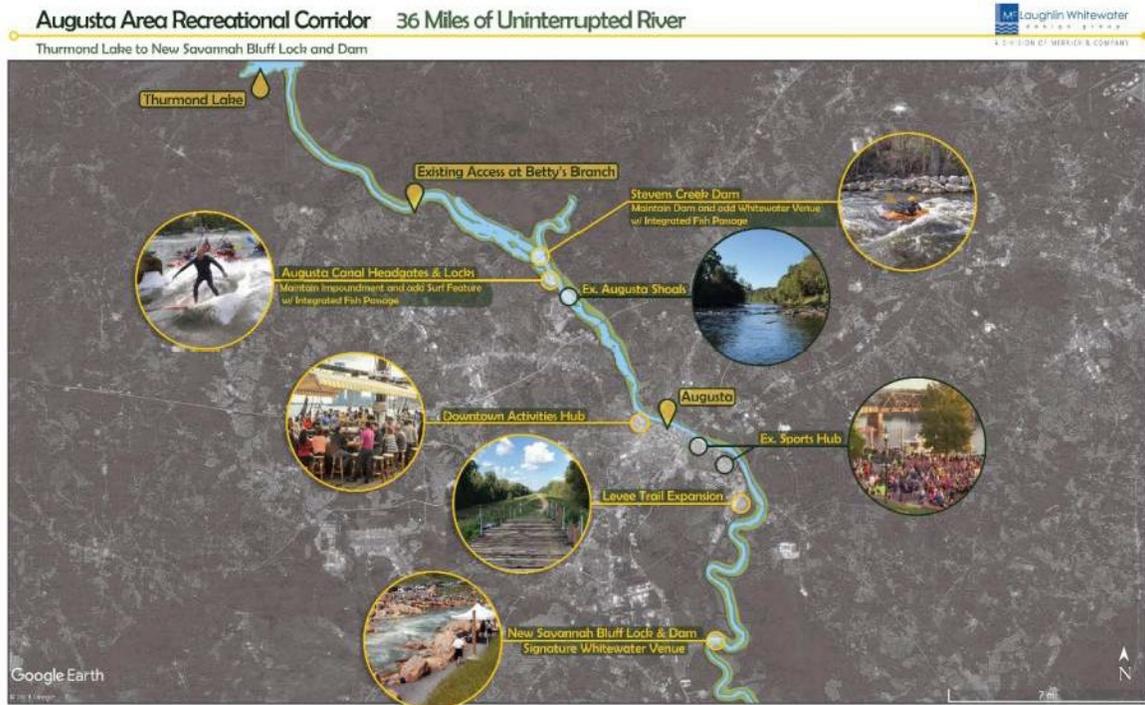
A key historical component to the inclusivity of the Park showed itself during the 1950-70s when the majority of the City of Augusta was segregated but the Park was not. It has served as a gathering place for all our citizens for over 65 years. Its pavilions have provided the location for hundreds, if not thousands, of family reunions, birthday parties, and civic meetings over time. It is an amenity that should remain with the community, and future plans must ensure the site's importance is recognized and maintained for future generations.

This site has been one of the main access points for bank fishing since at least the early 1950s, maintaining that access is imperative to the surrounding community to foster inclusivity and prevent gentrification. The two boat ramps that currently exist above and downstream of the dam are expected to undergo changes, however access to navigation between the current lock and dam site to the Lower Savannah Region, including to Savannah and the coast, should not be impeded.

Additionally, NSBLD Park sits on the confluence of two emerging bike/nature/walking trails whose development is ongoing. The levee, which starts above the remaining shoals approximately 20 miles upstream from the Park, creates an elevated path and contiguous trail through downtown Augusta ending at the Park. Over three-quarters of this levee has been converted into a trail with remaining miles slated for conversion in the next few years. The Butler Creek trail starts at Lombard Mill Pond near Fort Gordon Gate 5 and running the length of the creek ending at the NSBLD park. That trail is 20% completed and is slated to be finished in coming years.

RIVER ACTIVATION AND UPLAND RIVER REACH CONCEPTS

In developing an overall river vision concept plan for the Savannah River from Thurmond Dam, through Downtown Augusta and ending at the New Savannah Bluff Lock and Dam site potential ideas for community programming and activation were explored. Potential site locations focused on publicly owned property along the river within the city limits of Augusta. This plan would tie into the overall regional vision of the recreational corridor, providing both in-river and riverside activities along the entire reach for recreationalists and spectators. Main components of the vision include a whitewater course at Steven's Creek Dam, a surf feature at Augusta Canal, and a larger scale whitewater venue at New Savannah Bluff Lock and Dam. Recreationalists could put in above Steven's Creek Dam and float or boat all the way to New Savannah Bluff Lock and Dam or stop in downtown Augusta at the planned activities hub. See Figure 3 below.



3. Figure 3 - River Vision Concept

Three publicly owned sites were identified which include the Riverwalk, Marina Park, and the Lock and Dam site. Future redevelopment along Columbia Nitrogen Drive near the I-520 Bridge and the potential future redevelopment of the Depot Project near Marina Park may also bring increased activation east of downtown. These redevelopment sites are located along the Levee Trail and can provide an additional opportunity to connect to the river and a broader circulation connection along the riverfront.

Several potential programming and activation ideas were explored. The ideas were generated from community sessions held in September 2018 by Merrick and through background information including the Fall 2016 Report “Reshaping Augusta’s Relationship with the Savannah River”. Potential ideas include a whitewater course, ropes course, zipline, water taxi, river cruise, fireworks display, fishing access, boat access, event pavilion, gathering spaces, destination playground, trails, outdoor markets, disc golf course, and historic markers.

All of these ideas have potential compatibility with the lock and dam site and a potential synergy with the Pinizy Swamp Nature Park located just west of the Lock and Dam Park site. The water taxi, river cruise, zipline and fireworks display could be sited at the Riverwalk, Marina Park or the Lock and Dam site. These were explored in greater detail along with recommendations for markets and festivals at the Riverwalk and opportunities for the Levee Trail. See Figure 4 for a visual of the whitewater venue concept.

Water Taxi

- Potential to operate back and forth from North Augusta, SC to Augusta, GA as a privately operated service.
- Could connect the existing trail systems on both sides of the Savannah River.
- Potential stops at the Riverwalk, Marina, and Lock and Dam Park site.
- Could provide a regular service.
- A feasibility study should be conducted for further assessment and viability.

River Cruise

- Potential to operate between downtown Augusta and destinations along the river.
- Potential stops at the Riverwalk, Marina, and Lock and Dam park site.
- Could be rented/reserved for special events, such as a birthday party at the Lock and Dam Park, or day cruises on the weekend.
- A feasibility study should be conducted for further assessment and viability.

Zipline

- Potential location at the Riverwalk, Marina Park, or Lock and Dam park site.
- Operated privately by an outdoor recreation company.
- If located at the Riverwalk or Marina Park, it could operate as a standalone attraction that could provide connectivity across the river and a visual vertical element at the river.
- If located at the Lock and Dam Park, it could be combined with a ropes course/adventure destination.

Markets / Festivals

- Programming the Riverwalk could help bring people to the river.
- Potential redevelopment at the ‘Riverfront at the Depot’ may include a future entertainment venue that could attract people and visitors to the riverfront.
- Explore opportunities to enhance visual connection across the levee:
 - Enhance existing and/or building new pedestrian bridges and underpasses.
 - Provide more pedestrian access points through the levee. Would be required to have flood gates that would be closed during flood events.
 - Develop vertical elements along the Riverwalk that are visible from Downtown and draw attention and curiosity to the river side of the levees. Example might be art installations or pedestrian bridges with a strong vertical entrance.

Levee Trail

- Potential to be a city and regional destination.
- Create distinct character zones along the Levee trail as it passes through the urban areas to more rural and natural areas. Each zone could have its own identity and character that draws interest and a sense of discovery.
- Activation could draw people to the Downtown Riverwalk and encourage multi-modal transportation to the Lock and Dam park site.

Cities across the country are starting to look at infrastructure as opportunities for public space. Precedent examples include the Indianapolis Cultural Trail, Chicago’s 606, Atlanta’s Beltline, and New York’s Highline. An option was developed for potential site programming for the Lock and Dam site which includes the amenities and programs identified for the site from the overall river vision. This option creates a “River Island Destination”. The concept utilizes the Corps’s preferred concept of maintaining the existing lock and dam and providing an adjacent fish passage; and Merrick’s alternative of an adjacent whitewater course next to the fish passage. This alternative creates a destination island between the fish passage and whitewater course providing an ideal viewing area for the in-river recreation activities and the viewing of the fish passage channel. Two proposed pedestrian bridges connect to the island creating a walking and recreation loop through the site.

Access to the site could be via the water taxi or river cruise, via car, or via bicycle/pedestrian access along the Levee Trail.

A ‘Recreation Hub’ anchors the northern area of the site, creating an active focal point at the vehicular entrance. The pavilion is located in the center of the recreation hub and provides a gathering node for the event lawn, adventure play area, and zip line course. The pavilion would include restrooms and could include potential boat and tube rental for the whitewater course, concessions, and a small indoor event venue. The event lawn wraps the pavilion. A stage could be set up on the lawn for special events and performances along the river. The zip line crosses the river and meanders through the tree canopy adjacent to the adventure play area. The adventure play is also nestled in the tree canopy and could include a tree house theme, boardwalks, or ropes course. The adventure play is in close proximity to the Pinizy Swamp Nature Park and should complement the character and themes of the nature preserve. A camping area and disc golf course expands the recreation hub across the road to the north.

Parking is dispersed through the site along the entry road with a main parking and boat launch area at the upstream of the Lock and Dam. A picnic lawn and an ADA accessible fishing area is located in close proximity to the main parking area. A second picnic area is located along the creek near the entrance to the site.



4. Figure 4 - New Savannah Bluff Lock and Dam Whitewater Venue

COMMUNITY BENEFITS

There is tremendous opportunity with the modification of the dams to enhance the river system to restore natural function and habitat for the endangered sturgeon, to increase recreational use, improve safety, create economic development, and elevate the livability of the community. To achieve these objectives the project must improve access to the water, address existing safety hazards, enhance upland park spaces, make stronger connections into and through the river corridor, and create diverse and unique river recreation that will draw tourists and elevate the livability of the City.

River improvements that connect adjacent communities to the water and attract tourists have shown to create positive economic development. Economic Impact studies of river recreation projects in the USA show that the annual economic impact for a community can range from \$500k/yr to over \$40M/yr. There are many factors that influence these outcomes. Although an economic impact study has not been completed for this project, similar projects have produced annual economic impacts of over \$1M/yr. One example is in Columbus, GA where their local river was enhanced to improve ecology, access and water-based recreation. In 2016, an economic report was generated for Columbus, GA, and they showed considerable positive economic impact. The city has seen \$74 million in capital investment, along with 42 new businesses, several university extensions, 400 new jobs, and \$24 million in gross revenues, according to Uptown Columbus. Livability, city branding/image, attracting residents and retaining residents are additional positive economic impacts beyond these figures.

One unique aspect of this project is that modification to the dam to allow low hazard river passage would connect up to 36 miles of unimpeded river to be floated and paddled, which would be further enhanced by modification to Steven’s Creek Dam and the Augusta Canal. The recreational value and likely economic impact for Augusta would be significant. By connecting upstream and downstream reaches, the river could support guided float and fishing trips, as well as, provide a great recreational experience for local residents. Such a recreational amenity would be marketable to attract tourists, fisherman and other river users from the region.

MWDG recommends that if economic impact and development is identified as a primary project goal that an economic study be completed for the project. A shorter memorandum was completed for this vision and is included in Appendix D.

WHITEWATER CONCEPTS AT NSBLD

The concept created is based on Alternative 1-1 from the Corps. Alternative 1-1, removes the lock structure but retains the dam (and gates) to maintain pool elevation upstream. A fish ramp is added in place of the lock. A portion of the existing park area is also cut away to make room for the fish ramp. The whitewater concept demonstrates the possibility for an Olympic style whitewater park, with an overbank course and island for recreation and viewing. The course would be approximately 2000-feet long with a 1-percent slope, beginning just upstream of the fish ramp and ending towards Butler Creek. Several whitewater features can be placed along the course. See Figure 5 below.



5. Figure 5 - Concept 1 Whitewater Course with Dam

NEXT STEPS

The required modifications to the dam structures at NSBLD, Stevens Creek Dam and the Augusta Canal Head gates and Locks opens a 36-mile river passage. The City of Augusta, and the region at large have been given an enormous opportunity to redefine how the Savannah River is used and perceived. The River Vision plan described in this report identifies a number of ways to capitalize on the coming changes to the area. Augusta is in a prime position to capitalize on this vision, as the Savannah River runs through the Heart of the City and terminates along the southern end of the reach.

The River Vision is a long term plan that will require years to complete, but provides a new roadmap that will allow the city of Augusta to plan for the positive changes that are ahead. The current Corps process, specifically related to the NSBLD and park will need to be resolved in a positive manner for the city of Augusta. The current alternative presented by the Corps, Alternative 2-6d, negatively impacts the city of Augusta, as it negates the future use of the park as a future outdoor recreational hub.

The NSBLD is the first dam along the system that will be modified, and as such it will set the precedent for future work within the river corridor. The importance of getting the first one right, cannot be overstated. The first, next step, is to ensure the park is protected in modifications to the lock and dam structure. Preserving the park, which is to serve as the future anchor of the new river recreational system, is critical to the success of the entire River Vision Plan. If the City is successful in saving the park, then the future of the river corridor can be established and implemented over time. Setting the right precedent at this first opportunity will set the stage for the entire river reach and will allow the City to reap the economic benefits, social benefits and environmental benefits of a new vision for the Savannah River.

SECTION II - APPENDICES

Appendix A – Concept 1 Whitewater Course with Dam

Appendix B – Whitewater Venue Concept

Appendix C – River Vision Concept

Appendix D – Economic Memorandum

APPENDIX A – Concept 1 Whitewater Course with Dam



Number	Revision Description	By	Date

New Savannah Bluff Lock and Dam
Augusta, GA

Alternative # 1
Fish Passage and Overbank Whitewater Channel

Whitewater Layout Study

Loughlin Whitewater
A DIVISION OF MEADCO & COMPANY
200 N. 20th St.
Darien, GA 30128
770.484.3100
770.484.3100

DESIGN: BAN
DATE: 01/05/2019

PROJECT NUMBER
65419968

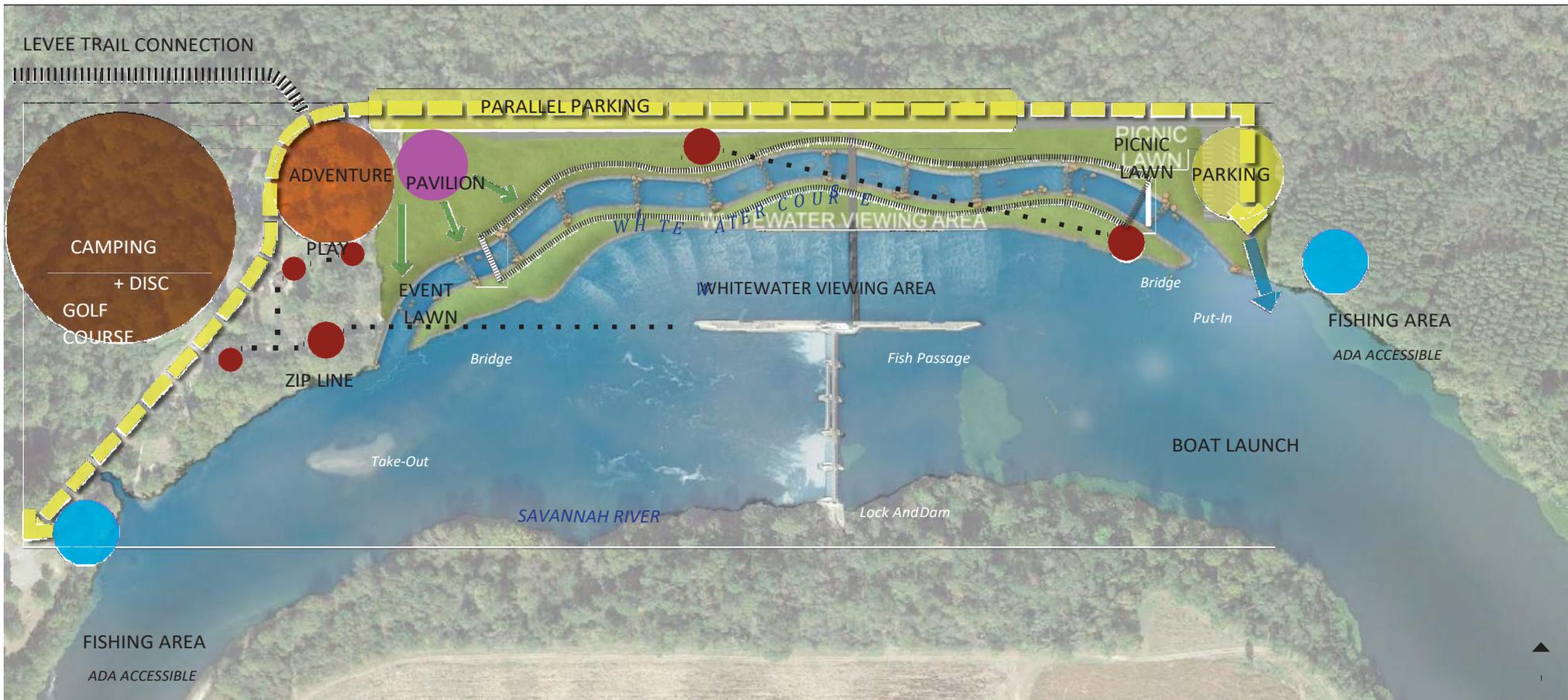
Drawing Number:
1

APPENDIX B – Whitewater Venue Concept

RIVER ISLAND DESTINATION

- Pavilion with boat rental and concessions
- Event Lawn for concerts and whitewater viewing
- Zipline over the whitewater course
- Destination Adventure Playground
- Camping Area and Disc Golf course
- Levee Trail Connection

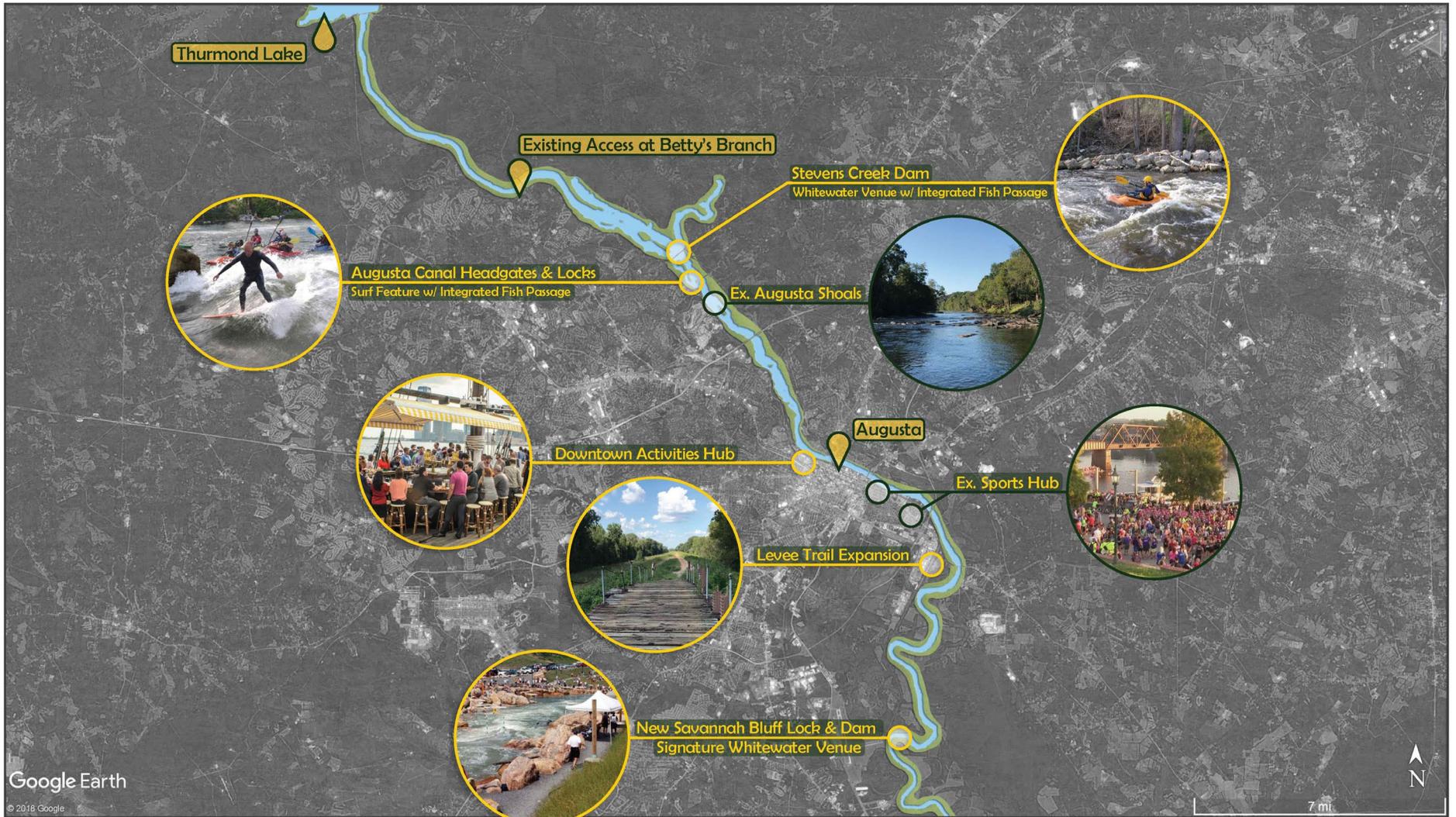
- Route traffic behind activity areas with parallel parking
- White Water Course with put in and take out areas
- Trail and bridges to viewing area on the island
- ADA accessible Fishing Area
- Lock and Dam structure remains
- Boat Launch above the Lock and Dam



APPENDIX C – River Vision Concept

Augusta Area Recreational Corridor 20 Miles of Uninterrupted River

Stevens Dam to New Savannah Bluff Lock and Dam



APPENDIX D – Economic Memo

Economic and Quality of Life Impacts Related the Proposed Savannah River Recreational Improvements

INTRODUCTION

From the late 19th through the mid-20th centuries, cities and communities throughout the United States located alongside rivers focused primarily on protecting themselves from the devastating impacts of flood events by isolating and often “walling” the rivers that ran through them. Rivers were channelized, leveed and dammed in order to control and contain them. They were largely seen as a solely an infrastructure asset that easily could be a threat to the community. Over the last 30 years, however, that paradigm has dramatically shifted as communities have come to recognize the tremendous natural asset their river can be for beautification, recreation, unique economic development opportunities, and enhancement to overall quality of life.

The proposed recreational improvements of the Savannah River near Augusta, Georgia, follow this same change in paradigm. This brief report provides an overview from an expert opinion on the nature and general order of magnitude of those potential impacts based on real and similar projects in Georgia and from around the United States.

PROPOSED RECREATIONAL IMPROVEMENTS

In 2018, McLaughlin Whitewater Design Group (MWDG), and division of Merrick & Company, completed a draft feasibility study and alternatives analysis for river and upland recreation improvements that would work in tandem with the Corps’s analysis of fish passage infrastructure enhancements at the NSBLD site on the Savannah River, approximately 19 miles downstream from the City of Augusta, Georgia. While primarily focused on the in-river enhancements, the MWDG analysis proposed recreational improvements that could support and allow for the following diverse amenities and experiences at and related to the site:

- Whitewater course
- Ropes course and zip-lines
- Water taxi
- River cruise
- Boat access
- Fishing access
- Event pavilion and gathering spaces
- Destination playground
- Trails
- Outdoor market area
- Disc golf course
- 36-miles of unimpeded river floats and paddling opportunities

A VIBRANT AND GROWING REGION

The Greater Augusta region already enjoys rich economic impact from recreation-based tourism being the home of the Masters Tournament. This event alone brings over 250,000 annual visitors to the area and creates over \$110 million in yearly economic impact. Additionally, the region is experiencing a significant growth in specific industries such as cyber security, advanced manufacturing and healthcare services, that is drawing a younger work force to the area.

In February 2017, a “Destination Blueprint” was presented to the Augusta Convention and Visitor’s Bureau that highlighted several priorities and opportunity areas to further establish the City as a regional and national tourism destination. Among those opportunity areas were “Connectivity to the Savannah River”, “Outdoor and Adventure”, “Amateur Sports”, and “Events and Festivals” as thematic areas of potential growth. While this blueprint was focused on opportunities specifically within the City of Augusta, the proposed recreational improvements at the NSBLD site would directly augment and enhance the efforts of developing the area as a regional and national tourism destination with broad and far-reaching appeal. The experiences made possible by these improvements would also support the quality of life attributes most attractive for new and relocating employers targeting a younger work force.

COMMUNITY IMPACTS OF RIVER / ADVENTURE RECREATION DEVELOPMENTS

River and adventure sport recreation developments have become popular enterprises for communities throughout the United States, where there are natural or built resources that can support them. These are unique additions and attractors to an area that bring a multitude of economic and social benefits, provides communities the opportunity to strengthen and diversify their economies, and enhances quality of life for local residents by enriching the recreational opportunities available to them, as well as serving as an attraction for destination tourism. The economic impacts of these developments include direct, indirect and induced impacts through direct visitor spending, job creation, supporting new business development, increases in personal income for local residents, and increases in local and state tax revenues generated. Some of the larger existing whitewater and adventure sport destinations are attracting more than 100,000 user days each year, not including spectators and ancillary participants.

One of the most relevant examples of what is possible and even probable with the proposed river and adventure recreation developments at the NSBLD site is that taken from the whitewater and adventure park developed in Columbus, Georgia. This park offers guided rafting at multiple skills levels, self-guided kayaking, and zip-line experiences. Since the opening of that park in 2013, which is operated by a third-party, private concessionaire, the City of Columbus has seen a 45% increase in annual gross receipt sales in its Uptown area reaching \$46.5 million in 2016. Additionally, 75 new business have opened in Uptown since the whitewater park opened, rental unit occupancy has increased to 98%, and over two million people visit the venue annually with the vast majority of those being spectators. Total guided rafting participation is now nearing 100,000 users annually.

A river and adventure recreation destination in the Augusta area has the possibility of even greater potential economic performance than the Columbus site due to a few distinguishing facts:

- Augusta is only a 30-minute drive further from Atlanta than Columbus, but has many other attractions and amenities to draw and enrich the visitor experience.
- The surrounding region within a three-hour drive of Augusta has more numerous, more populated, and more diversified target markets including Savannah, GA; Charleston, SC; Columbia, SC; and Greenville-Spartanburg, SC.
- The Masters Tournament already draws 250,000 visitors each year to the area.

There have been several economic impact analyses performed for whitewater recreation venues across the United States, most often with the same methodology. The process for determining total economic impact typically involves the following steps:

1. Evaluate national, state, and local trends with regard to whitewater recreation.
2. Determine total commercial user days, visitor expenditures, and multiplier effects of those expenditures.
3. Calculate total non-commercial user days, visitor expenditures and multiplier effects.
4. Investigate total formalized event use of the venue including competitions, classes, and private party equipment rentals, expenditures and multiplier effects.
5. Sum total economic impacts of whitewater recreation to the local economy.

The table below features data from economic impact analyses performed for other whitewater / river recreation destinations currently in operation or planned around the United States.

Site	Total Economic Impact	Total Job Support
U.S. National Whitewater Center, Charlotte, NC	\$36,678,700	690
Lower Animas, Durango, CO	\$19,397,633	268
Des Moines Water Trails, Des Moines, IA	\$27,991,000*	151*

**This is a projection provided by an analysis based on current plans and estimated Year 1 operations of the site.*

Finally, while the entire area and City of Augusta will be significant beneficiaries of the economic and social benefits of this potential project, the local neighborhoods and community within the immediate vicinity of the NSBLD site stands to benefit most. A destination of this nature will bring new energy, unique identity, and economic revitalization that is based in a context of recreation, outdoor fun, and family experiences. Visitor spending will fuel a cascading effect of new opportunities for the growth and development of boutique businesses, support services, public recreation opportunities, public infrastructure enhancements, and local beautification efforts.

Brian Trusty has enjoyed a 26-year career in parks and recreation, land and habitat management, tourism, and economic development that includes senior executive management responsibilities in private for-profit, private non-profit, and public organizations. Brian's career includes managing an outdoor adventure company he founded that operated in 22 U.S. states, Canada, and Mexico; managing Lower Colorado River Authority's system of nature parks in Texas; leading the development and operation of the premier adventure sports destination on the east coast; performing strategic planning and management consulting for parks and recreation agencies throughout the United States; and leading National Audubon Society's conservation and environmental education programs throughout the Central Flyway. His successful public/private partnership at the Adventure Sports Center International in Maryland earned him an "Innovator of the Year" award in 2007 given by the Daily Record, Maryland's leading legal and business journal. Brian currently serves as Chair of the Texas State Parks Advisory Committee and is on the advisory board of the Advanced Environmental Research Institute for the University of North Texas. In March 2019, Brian was recognized with the Leslie M. Reid Alumni Award from the graduate program of the Recreation, Parks and Tourism Sciences Department at Texas A&M University for distinguished service in the field.

Aside from constructing and operating the Adventure Sports Center International re-circulating whitewater park in Maryland, Brian has completed operations and market analyses for whitewater projects on the Mississippi River in Minneapolis, MN; Arkansas River in Tulsa, OK; Illinois River in western Oklahoma; and the Des Moines River in Des Moines, IA. He is widely regarded as an expert in whitewater and adventure park operations and the impacts these projects can have on their communities.

APPENDIX G

Detailed Comments on Corps Report Line by Line

DETAILED REVIEW COMMENTS

ON

SAVANNAH HARBOR EXPANSION PROJECT, GEORGIA AND SOUTH CAROLINA: FISH PASSAGE AT NEW SAVANNAH BLUFF LOCK AND DAM, INTEGRATED POST AUTHORIZATION ANALYSIS REPORT AND SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT PREPARED BY U.S. ARMY CORPS OF ENGINEERS, SAVANNAH DISTRICT, FEBRUARY 2019

PAGE BY PAGE REVIEW COMMENTS AND QUESTIONS

PREPARED BY

CRANSTON ENGINEERING GROUP, P.C.

Thomas H. Robertson, PE, AICP, RLS

Draft Finding of No Significant Impact (FONSI)

Page i, paragraph 1, last line – With the weir crest elevation at 108.2 and the flood plain bench (runaround) at 110, the water would rise 1.8 feet before engaging the bench.

Page i, second paragraph, fifth line – With the pool elevation at the weir fluctuating between 110.2 and 111.2 feet this would mean that the flood plain bench runaround would be engaged most of the time at depths from 0.2 to 1.2 feet deep.

Page i, second paragraph, last line – The boat ramp would require purchase of additional land and extinguishing and mitigating a conservation easement.

Page i, third paragraph, fifth line – Would the recommended plan not be expected to improve the existence of the federally listed species, not merely not jeopardize?

Executive Summary

Page i, second paragraph, ninth line – This Section (i) requires maintaining the pool as existed when the WIIN Act was enacted. This is misinterpreted by the Corps of Engineer’s guidance document. The Act says “the pool,” the Corps says “a pool.” This section requires allowing safe passage over the structure of the shortnose sturgeon, Atlantic sturgeon and other migratory

species. The Act provides expanded purposes for the project beyond the original navigation to include water supply and recreation.

Page i, second paragraph, last line – Note that this section (ii) states different purposes from (i) in that it is not required to maintain the pool for navigation, but only for the new purposes of water supply and recreational activities. Note also that this section of the Act does not require the structure to allow safe passage of any fish.

Page i, third paragraph, fourth line – Maintaining the functionality of the pool for written purposes is a major difference in interpretation between the plain language of the Act and the Corps interpretation which admits ready manipulation.

Page ii, third paragraph, third line – Passing fish is not required Section ii of the Act.

Page ii, third paragraph, last line – Why is alternative 2-6d classified under Section (ii)? The weir as actually being constructed over the dam; so, would the structure not be more properly classified as being under Section (i)?

Page ii, fifth paragraph, fifth line – The adjacent park and recreation area would contain the often-inundated flood bench that would not be an asset to the park, but rather a maintenance problem, for which the City of Augusta would be always responsible.

Page viii, Acronyms and Abbreviations – The acronym chart is not complete and limits the reader’s ability to comprehend the text of this report. For example, what do AM, CONUS, NLF, and others represent?

1.0 Introduction

Page 1, first paragraph, last line – Question the definition of functionality and also the WIIN Act requires passing fish under Section (i), not (ii).

Page 1, second paragraph, last line – Because this project is much different from the 2012 one, would it not be appropriate to have a new Environmental Impact Statement rather than Finding of No Significant Impact?

Page 1, third paragraph, last line – If the 2012 design is not consistent with the WIIN Act, then how can it be considered be considered as an actual No Action Alternative (NAA)? The conclusion that the original design should be used as the basic comparison is totally illogical and does not flow from the “inconsistency” sentence via the word “therefore.” Using an alternative that is inconsistent with the WIIN Act as the base masks the fact that it had effects on the water surface levels of the pool different from the actual existing elevations experienced by the communities every day. This choice will make the alternatives in the report look as if they have lesser effects than they really do.

1.1 Study History

1.1.1 New Savannah Bluff Lock and Dam

Page 2, third paragraph, last line – There are unauthorized purposes that were acquired by the New Savannah Bluff Lock and Dam due to other federal legislation. These have been enumerated

by Augusta Attorney Noel Schweers from legal research, and further study would be needed to quote the actual purposes and sources.

1.1.2 Savannah Harbor Expansion Project

Page 3, first paragraph, last line – If the WIIN Act does not authorize a bypass outside the federal channel, then how does it authorize a flood plain bench outside the federal channel, which, incidentally, ruins a very nice waterfront park?

1.1.3 Study Authority and Related De-Authorization*

Page 4, What does the asterisk in the section title refer to?

Page 7, second line – (A)(i) includes three purposes including navigation. The Corps interprets navigation as being only within the pool. A plain reading of the WIIN Act reveals the obvious intent that the lock should remain in place should include rehabilitation for navigation up and down the river, not just in the pool.

Page 7, seventh line – (A)(ii) has only two purposes (different from (A)(i)): water supply and recreational activities only. There is no mention of authority for a fish passage under Alternative (ii).

Page 7, tenth line – The park and recreation area to be conveyed ends up being a pretty poor park and requires significant on-going maintenance of a soggy and/or scoured flood runaround.

Page 7, nineteenth line – More information is needed to understand better the cost-sharing policy of the project, because it affects local communities and the position of various stakeholders who may stand have to pay, or gain various costs.

1.1.4 Study Sponsor

Page 7, first paragraph second line – Both Georgia Ports Authority (GPA) and Georgia Department of Transportation (GDOT) are the collective non-federal sponsors. Most stakeholders may not be aware that GDOT is a party to the project along with GPA.

1.3 Purpose and Need*

Page 9, Title – What does the asterisk refer to?

1.4 Problems, Opportunities, Objectives, and Constraints*

Page 9, Title – What does the asterisk refer to?

1.4.3. Objective

Page 10, second paragraph, last line – Note that Alternative 2-6d does not provide for the navigation objective.

1.4.6 Assumptions

First bullet, second line – This is a flawed assumption. Why would one assume a No Action Alternative that cannot be built? And, why is logical or why does it matter that the 2012 SHEP

Plan requires some form of mitigation? That makes no sense. The No Action Alternative, by contrast, should be the Existing Conditions.

Second bullet, fifth line – Selecting the 2012 SHEP plan as the No Action Alternative makes the pool elevations from that plan be the existing for comparison purposes. The SHEP plan levels are lower than the real no-action (existing) levels. This assertion should be quantified.

2.2 General Existing Conditions*

Page 13, first paragraph, sixth line – Even if one assumes that the navigation function is the only purpose for the dam (which it is contended that it is not), the project does not “incidentally” serve water supply and support water-related recreation and tourism. It may have “incidentally” at one time, but the WIIN Act 2016 specifically authorizes these purposes in addition to navigation. Therefore, the provision of these functions is not merely incidental.

Page 13, first paragraph, last line – It has been reported that the lockages were able to pass a majority of the migratory and anadromous fish species until the lock was closed. Operating the lock in this fashion and continuing to operate a restored lock in this fashion would be a low-cost method of accomplishing the fish passage purpose. ZEL Engineers has proposed some changes to the lock that would make it more desirable for sturgeon. These alterations need to be further explored.

Page 13, third paragraph, third line – The current condition of portions of the project are probably very poor, but the overall condition of the project is not entirely poor. In fact, previous inspection before 2014 did not classify it as being that bad. It was reported that previous inspections did not describe such dire circumstances in parts of the project other than the lock wall. The reported structural issues have been present for a very long time and do not appear to be as dire one might think upon looking at cracked concrete.

Page 14, last line – The Savannah District had previously refused to provide the cost estimate updated in 2017 of the SHEP project including the structural repairs necessary to reduce the risk of a catastrophic failure of the dam and insure proper hydraulic operation of the fish passage. Such cost estimates would be useful in making independent judgements about the future of the dam. They should be requested.

2.2.2 Hydrology and Floodplains

Page 17, second paragraph, sixth line – Why is the flood control benefit from J. Strom Thurmond Dam described as “limited”? That project has always been touted by the Corps as furnishing flood control as the major benefit for the Savannah River downstream.

Page 17, second paragraph, third to last line – The Augusta Canal Diversion Dam is also located upstream approximately one mile downstream of Stevens Creek Dam. It was built in 1876 and is maintained by the City of Augusta currently. It is a run of the river overflow weir structure. Note that the New Savannah Bluff Lock and Dam is the youngest of the three dams near the Augusta/North Augusta area and it is in the worst condition. Who is responsible for that?

Page 18, third paragraph, third line – The pool elevations of 111.2 and 114.2 NAVD88 are equivalent to elevation 112.0 and 115.0 in the NGVD 1929 datum, the original datum for the

construction of the lock and dam. Elevation of 115 is shown on the plans for the dam. Where does elevation 112 come from?

Page 19, first paragraph, last line – The two-year return interval flood is also a good proxy for the mean annual flood, the average flood discharge that might be expected every year.

Page 19, second paragraph, last line – The original design discharge was 550,000 cfs, lessened to 500,000 cfs to conform to more modern freeboard standards.

Page 19, fifth paragraph, first line – USGS reports that the 1929 flood had peak stages of 45.1 and 46.3 on September 27, 1929 and October 2, 1929. These figures are gauge readings and the NAVD88 has no meaning for them. That is there is no need to adjust gauge readings which are not related to the datum.

Page 19, fifth paragraph, third line – The USGS reported discharge rates of 343,000 and 350,000 cfs for these two flood peaks respectively. Note that the peaks occurred in different Water Years. Reference USGS Water Supply Paper 1673, *Magnitude and Frequency of Floods in the United States, Part 2-A South Atlantic Slope Basins, James River to Savannah River*, 1964, pages 318-19.

Page 19, fifth paragraph, seventh line – Where is the Butler Creek gauge located?

Page 20, second paragraph, first line – If one defines “flood control function” as controlling the discharge of waters downstream, this is correct. However, it is misleading because the New Savannah Bluff Lock and Dam does re-regulate flood flows from intermittent generation at Thurmond and from uncontrolled runoff from drainage basins upstream, particularly the large Stevens Creek watershed. The dam gates are adjusted numerous times per day to maintain the slack-water pool at Augusta within operational limits. More importantly, the gates are often raised entirely to pass floods equal to the bank-full stage flood or greater magnitudes. This function reduces the severity of smaller floods and while still being able to be manipulated to maintain the pool at existing levels.

2.2.3 Aquatic Resources and Aquatic Habitat

Page 21, third paragraph, last line – The Savannah Bluff Lock and Dam may have inundated a portion of the Augusta shoals, but it did not eliminate the habitat for the Rocky Shoals Spiderlily, as populations of those plants occur at various locations in the rocky shoals upstream and beyond the effect of the New Savannah Bluff Lock and Dam.

2.2.4 Wetlands

Page 23, Paragraph 2, first line – Country Highway should be County Highway. Is this road Gum Swamp Road?

2.2.6 Threatened and Endangered Species

Page 27, first paragraph, third line – Where did the gravel bar come from? And when? It did not exist in the 1960's and 70's. It blocks the former navigation channel now. It is speculated that the material for this bar may have come from the deep hole immediately under and downstream of the lock and dam.

2.2.9 Cultural Resources

Page 33, second paragraph, third line – Where are the lay-down and access areas on private property?

Page 33, Figure 14 – Red boundary is erroneous and does not encompass all the lands owned by the United States. The red boundary does not match the plat of leased lands included in Figure 33 NSBLD Park on page 110.

Page 35, first paragraph, last line – While steamboats may have hauled some cotton goods from the mills, most of the cargo was baled cotton from the major inland market at Augusta. Barge traffic in oil and timber also included major shipping for bricks manufactured in the Augusta/North Augusta area.

Page 37, Figure 16 – The National Register boundary should be adjusted to cover all of the areas impacted by the proposed alternatives including other areas on the Georgia side. The boundary should be enlarged to include the lock-tender's residence site, an adjacent colonial era cemetery, and the downtown lands to the end of the bluff. Also, there is a possibility of previous occupations of Native Americans. In the historical period the Chickasaw Indians were known to have occupied the site. Collections at the Augusta Museum of History include a fine shell gorget recovered from the borrow pits adjacent to this property, indicating that other remains might be discovered or disturbed.

Page 39, second paragraph, fifth line – There are two early to mid-19th Century railroad bridges across the Savannah River, but one is upstream of the Fifth Street Bridge and the other piers downstream. These are historic “rolling lift bridges.” In addition, there are stone pools from the former South Carolina Railroad bridge upstream of the Fifth Street Bridge. In addition, the Fifth Street Bridge itself, with a superstructure completed about 1935, is a historic property itself.

Page 40, first paragraph last line – The main training wall in the slack water pool extends from the South Carolina bank to the center of the river at the Norfolk Southern Railroad bridge at Sixth Street and extends roughly down the center of the river for a mile. This structure has been referred to as Gardner's Bar training wall or jetty. It was constructed by the Corps of Engineers prior to 1915 to divert the main flow of the river to the Georgia side to keep the docks at Augusta scoured out to prevent shoaling. This wall is constructed of timber piles, cribs and rock. At the existing water levels this training wall is not a major impediment to navigation and recreational use, but at lower stages of the pool the wall becomes a hazard to navigation and at the lowest level it even protrudes from the surface of the water. If water levels are to be lowered, the Corps should include in the project mitigation measures for the wall including selective demolition to lower the top elevation so that vessels might safely pass over in the future.

2.2.11 Recreation

2.2.11.1 Boat Docks

Table 5 – Shows the existing depths at boat docks. Is this existing the real existing conditions or does it reflect the No Action Alternative?

2.2.11.2 Special Events

Page 42, third paragraph, second line – Which datum do the elevations 113 and 115 refer to, NGVD 1929 or NAVD 1988? Do the measurements of the water stages at the Fifth Street Bridge refer to the physical staff gauge on the bridge pier or to the elevations from the recording gauge?

Page 42, third paragraph, third line – Where is the New Savannah Bluff Lock and Dam gauge physically located?

Page 42, third paragraph, last line – When and if the pool elevation is lowered, it is likely that sculls, sweep rowers, and rudders will impact the training wall.

2.2.13 Water Supply

Page 43, fourth paragraph, last line – It is likely that the NSBLD changes would have no effect as to raw water pumping station intake that leads to the Highland Avenue Treatment Plant.

Page 44, Table 6 – Why is the analysis of pump cavitation prevention based on pool elevations in NVGD 29? This is confusing with respect to the alternatives which are expressed in NAVD 88.

Page 45, Table 7 – Why is the analysis of pump cavitation prevention based on pool elevations in NVGD 29? This is confusing with respect to the alternatives which are expressed in NAVD 88.

3.0 Formulation of Alternative Plans

3.1 Planning Strategy

Page 48, fourth paragraph, last line – Using the SHEP2012GRR/EIS Fish Bypass Design as the NAA for comparison of alternatives is a completely flawed logic. Either the SHEP 2012 Plan should be considered as an actual alternative that could be constructed, or, in the alternative, it should be eliminated and actual existing conditions as of the date of enactment of the WIIN Act should be used instead. If the authorized project modifications include only the construction of an in-channel fish passage, moreover, then the modifications would not allow for the out of channel flood bypass either as proposed in several of the alternatives, including Alternative 2-6d.

3.1.1 Evaluation Criteria

Page 48, second bullet item – The impacts to water supply intakes should include not only the number of commercial water intakes affected, but also the cost implication of both first costs and ongoing operational costs.

Page 49, Table 14, second row – The dollar cost should also be a measure of the impacts. Then impacts from induced floods of various flood events, the depths of flooding and elevations should also be considered, not just the area inundated. Impacts for real estate, how are impacts measured? Dollars?

3.1.1.1 Rating Criteria

Page 49, second paragraph, fourth line – The initial assumption that each alternative would have the ability to pass fish equally was not held constant through the end of the analyses, even though

there is no additional scientific evidence to the contrary that was not already known at the outset. Therefore, the initial assumptions should be constant throughout.

3.1.1.1.1 Navigation

Page 50 first paragraph, last line – To say that an operational lock is not required is entirely to mis-interpret the clear language in the 2016 WIIN Act. The first option of the WIIN Act provides for navigation, and the fish passage over the dam does not take out the lock. Therefore, retention of the lock is to provide navigation around the fish passage structure is clearly the intent. Retaining the lock also would provide another means of passing fish upstream which has been successful in the past and which could be left as an adaptive management feature for the future in the likely event that the fish passage is not successful in passing the targeted species. ZEL Engineers, Inc. has proposed a method of accomplishing this passage for the sturgeon.

3.1.1.1.3 Recreation

Page 51, fourth paragraph, fourth line – Recreational boat docks are currently used by the owners under existing stages of the pool, not those theoretical ones that would occur under the No Action Alternative. Therefore, this analysis using the NAA as the base understates the adverse impacts of lowering the pool on the usefulness of these boat docks.

3.1.1.1.4 Flooding

Page 52, first paragraph, fifth line – The gates at the New Savannah Bluff Lock and Dam to reduce adverse impacts by high flows will be lost as a function under all alternatives, except Alternative 1-1.

Page 52, first paragraph, eleventh line – “rose” should be “raised.”

Page 52, second paragraph, eighth line – The detailed flood models should be made available to local interests and the Cities, so that independent evaluation of the effects can be made. Also, does the more detailed model result in differing flood elevations for the 100-year flood from that which is predicted by the FEMA hydraulic model? Note also that the FEMA effective hydraulic model was itself developed by the Corps of Engineers.

Page 52, second paragraph, last line – “asses” should be “assess.”

3.2 Management Measures

Page 53, first paragraph, last line – Neither a fish passage, floodplain bench, or bypass channel is authorized under (ii) of the WIIN Act.

3.2.1 Location of Fish Passage Structure along River

Page 53, second paragraph, last line – “projecting” should be “project.”

Page 53, third paragraph, last line – This paragraph indicates the recognition that you can’t have it both ways, keeping the pool and not causing flooding, or not causing flooding and lowering the pool. This is what local interests have been telling the Corps all along.

3.3 Formulation of the Initial Array of Action Alternatives

Page 54, fourth paragraph, last line – The term “in-channel” is an important manufactured word that allows the Corps of Engineers to distinguish among alternatives as to whether or not the fish channel occurs within the river or in a “bypass” channel. The approach is silent on whether or not other project features can be located on the side of the river, such as the flood bench and run-around channels. This in-channel definition would by their thought process eliminate the SHEP 2012 plan even though it is the NAA that the first two alternatives in Table 17 are authorized by paragraph (i) while the last three are authorized by paragraph (ii.). Completely different authorizations.

Page 55, third paragraph, thirteenth line – All of the six weir alternatives hold the South Carolina bank of the river as existing. Why? This selection seems arbitrary, especially because the 2012 plan is included as the No Action Alternative.

Page 55, fourth paragraph, second line – “a” pool and “the” pool are not the same thing. The WIIN Act refers to “the pool.”

Page 56, second paragraph, second line – The local interests should request both the HEC-RAS 2D model and the HEC-RAS 1D model for independent analysis as required by the Information Quality Act.

Page 56, fourth paragraph, last line – Why were reformulation refinements needed for the alternatives in the 1D HEC-RAS model? Was the model itself wrong, or were the input parameters wrong?

3.4 Alternatives Eliminated from Further Consideration

Page 58, Table 20 – It is important to note that both of the Corps of Engineers original plans on which the WIIN Act language was based were discarded. While this might indicate the success of the first stakeholder comments, it does point out that the value engineering proposals were flawed from the beginning and led to the passage of a flood WIIN Act in 2016. The 2016 WIIN Act Alternative 1-2 is one of the value engineering plans and the 2016 WIIN Act Alternative 2-5 is the other value engineering plan.

3.5 Final Array of Alternatives with Refinements

Page 59, Table 21 – As stated before the selection of the SHEP 2012 Plan A as the No Action Alternative is logical nor representative of existing and future conditions in a straight forward manner.

3.5.1 Description

3.5.1.1 No Action Alternative

Page 61, first paragraph, last line – Choosing the 2012 SHEP Plan as the No Action Alternative has been pointed out as not being logical several times earlier in these comments... but is it or is it not authorized now?

3.5.1.2 Alternative 1-1 – Repair Lock Wall Georgia Side Fish Passage (Recommended for further consideration)

Page 61, third paragraph, last line – This alternative does not provide for navigation as a strict reading of the WIIN Act provision would require.

Page 61, fifth paragraph, last line – The annual operation and maintenance costs that include the annual cost of a major rehabilitation of the structure at fifty years is not a valid cost to assign to this analysis. There will not be a sinking fund established for the project, just as there was not for the previous fifty years. Therefore, these costs should be considered in arrears as has been the case in the past and not in advance as these costs are proposed to be. In fact, they are not real costs, but they are figures which skew the decision among otherwise valid alternative plans.

3.5.1.3 Alternative 2-3 – Fixed Crest Weir (500' Wide at Elevation 106.2' NAVD88) (Recommended for further consideration)

Page 63, third paragraph, fourth line – How is siltation build-up behind the fixed weir to be handled for this alternative as well as all of the fixed weir alternatives considered?

3.5.1.4 Alternative 2-6a – Fixed Crest Weir (500' Wide at Elevation 109.2 NAVD88) with Bench (Recommended for further consideration)

Page 64, first paragraph, eighth line – These two sets of elevation figures indicate that the difference between the 1929 and 1988 elevation datums is either 0.78 feet or 0.80 feet.

3.5.1.7 Alternative 2-6d – Fixed Crest Weir (500' Wide at Elevation 108.2') with Bench (Recommended for further consideration)

Page 67, fourth paragraph, third line – Using the elevation difference from page 64 it appears that the base of the dam in the NGVD29 datum would be 92.00. What physical part of the dam does this represent? The plans for the Lock and Dam show the top of the downstream apron at elevation 90.5 (NVGD 1929) and the gate sills at about 99.0.

Page 67, fourth paragraph, eleventh line – The water in the floodplain bench would flow when water level is only 1.8 feet above the crest of the weir. ($110.0 - 108.20 = 1.8$ feet) The language states that the floodplain bench would be partially inundated for the one-year return interval flow; however, it seems likely that this run around bench would be inundated much more often than implied by the one-year flood. It would also be subject to scour.

3.6 Environmental Effects*

Page 70, first paragraph, last line – Why would the SHEP 2012 fish passage as the No Action Alternative not be included here, for comparison, but is elsewhere in the analyses?

3.6.1 Climate Change – Upstream River Effects

Page 70, second paragraph, sixth line – What is CONUS?

3.6.2 Hydrology and Floodplains

Page 70, fourth paragraph, sixth line. It is noted that the gates are operated to pass flood waters only and are not affected in adjusting daily flows in the pool, which are controlled by the fish passages.

Page 71, second paragraph, second line – Which HEC-RAS model is referred to here? 1D, 2D, FEMA Effective?

Page 71, third paragraph, sixth line – The two-year flood is similar to the mean annual flood or the flow rate that would occur on the average once per year. (Some sources in the literature refer to this as the 2.33-year flood.)

Page 71, fifth paragraph, fourth line – Note that the flood level differences among alternatives are greater at the dam site and converge upstream.

Page 71, fifth paragraph, last line – What is base elevation of the existing condition profile? Why was it not presented along with the alternatives, so that the real difference from current conditions on the date of enactment can be judged?

3.6.2.1 Future Conditions with No Action Alternative:

Page 73, first paragraph, first line – Is this HEC-RAS the 1B, 2B, or FEMA effective?

Page 73, first paragraph, eighth line – A comparison of the No Action Alternative elevations on the future conditions with Alternative 1-1 are inconsistent with elevations of existing conditions. Which are correct? If the pool is 114.2 NAVD 88 (0.8 feet lower than existing), then the 1988 elevation of the existing pool is elevation 115. If this elevation is converted to NGVD 29, the difference is approximately 0.8 feet or the 1929 elevation would be 115.8. See below for calculations under Alternative 1-1, which indicate a different existing elevation.

3.6.2.2 Future Conditions with Alternative 1-1:

Page 73, third paragraph, ninth line – If the elevation of the pool were to be 113.5 NAVD 88, then the existing pool would be elevation 114.3 and converted to 1929 datum would yield 115.1, this is approximately 0.7 feet different on the existing conditions between those described in these two alternatives. Which is correct?

3.6.2.3 Future Conditions with Alternative 2-3:

Page 73, fifth paragraph ninth line – Similar to the comments above if the existing 1988 elevation of the pool is calculated from the data given, the existing situation would be elevation 114.3 or in 1929 terms, 115.1. Therefore, it appears that the future conditions with No Action Alternative elevations in paragraph 3.6.2.1 are erroneous.

3.6.2.7 Future Conditions with Alternative 2-6d:

Page 75, third paragraph, ninth line – Similar to calculations above these figures indicate an existing elevation at Fifth Street of 114.3, which is consistent with most of the alternatives.

3.6.3 Aquatic Resources and Aquatic Habitat

3.6.3.1 Future Conditions with No Action Alternative

Page 76, fourth paragraph third line – The assertion that the challenge of finding the bypass structure under the No Action Alternative would be challenging is erroneous. All of the average flow of the Savannah River was trained to go through the fish bypass under this alternative so that there would be little or no flow going through the gates.

3.6.3.2 Future Conditions with Alternative 1-1

Page 77, third paragraph, last line – The same beneficial impact due to increased dissolved oxygen that are listed for Alternatives 2-3 and 2-6A-D in the section below could be included under Alternative 1-1, “Long term beneficial impacts could occur to aquatic species from the potential local increased dissolved oxygen due to turbulence at rock weir.” Also, the existing upland park habitat that will be converted to rocky shoals habitats said not to be rare or unique to the project area; however, the bluff land open to the public for recreational purposes along the river is pretty unique and the loss of the New Savannah Bluff park for mankind is also the loss of a valuable habitat.

3.6.3.3 Future Conditions with Project Alternatives 2-3 and 2-6a-d:

Page 77, sixth paragraph, third line – What does this sentence mean where the rock weir would also improve habitat in general by improving habitat diversity. That seems unsupported and illogical.

Page 78, fourth paragraph, last line – It has been stated above the existing upland park habitat is quite rare for the benefit of mankind in this area.

3.6.4 Wetlands

3.6.4.2 Future Conditions with Alternative 1-1

Page 80, table 23 – Alternative 1-1 has the least impact on wetlands of any of the alternatives.

3.6.6 Threatened, Endangered and Protected Species

Page 84, fifth paragraph, third line – What is PBF?

Page 85, first paragraph, last line – Why is it important that the area above New Savannah Bluff Lock and Dam was not designated a critical habitat? If it is not critical habitat, why is it important to pass the fish into it from the area below which is critical habitat?

3.6.6.2 Future Conditions with Alternative 1-1:

Page 86, second paragraph, last line – How is it concluded that Alternative 1-1 will not function as effectively as other designs being evaluated? How is it known that this alternative would be the most likely one to cause the downstream gravel bar to shift locations? It will be re-established. But, what difference would that make if the fish go upstream? The gravel bar has not always been there at all. It lies where the navigation channel used to be.

3.6.9 Cultural Resources

3.6.9.1 Future Conditions with No Action Alternative

Page 89, third paragraph, last line – It is not true that the existing pool operations would remain the same. The NAA elevations are lower than existing.

Page 89, last paragraph, third line – How do we know?

Page 89, fifth paragraph, last line – There is only railroad bridge downstream of downtown Augusta. There is one railroad bridge at Sixth Street in downtown Augusta and the stone pier remains of the South Carolina Railroad bridge and the adjacent Fifth Street Bridge.

Page 90, second paragraph, last line – A Phase I archaeological investigation is very important because the New Savannah Bluff was occupied by mankind for a very long time, including prehistoric occupations, Chickasaw Indians, colonial settlements, and post-colonial occupations, including the development of the New Savannah Bluff Lock and Dam and its appurtenant structures themselves. The entire bluff should be included.

Page 90, fifth paragraph, second line – Not true.

Page 90, fifth paragraph, eighth line – This is a Public Safety concern.

Page 90, fifth paragraph, thirteenth line – Lowering the pool exposes parts of the wall and kills water events.

3.6.11 Recreation

Page 91, third paragraph, last line – The reader needs to understand what is meant the “impact zones.”

Page 91, table 25 – What is the breakdown of existing docks by impact zone? There are 161 total existing docks, but the owner of each one would undoubtedly wish to know what the difference between the current conditions, i.e. existing, and not the fictitious SHEP Plan A (NAA). What about damages in dollars?

3.6.11.9 Future Conditions with No Action Alternative and Project Alternatives 1-1, 2-3, 2-6a-d, and 2-8:

Page 93, first paragraph, second line – The selection of Alternative 1-1, with modifications, could change or even lessen the flood impacts on special events. This benefit would not be present with the other alternatives.

3.6.12.2 Future Conditions with Project Alternatives 2-3, 2-6a-d, and 2-8:

Page 93, third paragraph, fourth line – The observations in this paragraph are entirely the opinions of the writer and may not be applicable to every reader.

3.6.13 Water Supply

Page 93, Table 27 – What are the low flow existing conditions for each of the water intakes? The only comparison given here is with the fictitious No Action Alternative. For example, the Hicks

Raw Water Intake requires modification under Alternative 2-6c but not under alternative 2-6d even though the water surface elevation is only 0.6 feet different. It seems that, given the uncertainty of the elevations in the alternatives, this difference might not be significant and to have an adequate factor of safety. Perhaps alterations might be needed for Alternative 2-6d also. This recommendation is included in the observation on Page 94. Moreover, the modification considers only the current withdrawal flow, but not the ultimate capacity of 60 mgd for which intake pipes are already in place. Who pays?

3.6.13.2 Future Conditions with Project Alternatives 2-3, 2-6b, and 2-6c:

City of Augusta Proposed Modifications:

Page 94, third paragraph, last line – Although the Corps of Engineers analysis as given in Table 28 does not require pump station modifications to be made, there are recommended modifications for Alternative 2-6d, which increase the safety factor for the operation.

3.6.16 Cumulative Impacts

Page 98, seventh paragraph, second line – The diversion dam of the Augusta Canal System does not currently have an operating license from Federal Energy Regulatory Commission (FERC).

Page 99, first paragraph, last line – What about negative cumulative effects, including the loss of the Lock and Dam Park itself, the loss of fishing, etc. The project eliminates a fine city park and hence possible additional whitewater feature for the selected plan.

3.7 Plan Selection

Page 100, table 29 – There are numerous scoring deficiencies in the final analysis. The fish passage is not even required for (ii) alternatives, which include 2-6d. The fish passage scoring of 1-1 and the No Action Alternative were scored as a zero, because the risk of failure to reach the spawning ground is an unacceptable risk. Documentation in the report did not establish that it is an unacceptable risk. And who says it is unacceptable? Under navigation both the NAA and 1-1 should be scored zero instead of one, because they do not provide for navigation even though it is a purpose of (i) alternatives. Conversely, 2-6d should be scored a negative one instead of a plus one, because navigation is not required for (ii) alternatives. All of the alternatives eliminate real navigation along the river up and down. If scored in this manner the No Action Alternative and Alternative 1-1 would come out with a score of three, and all other alternatives would be two or less. On the remaining cost comparison the No Action Alternative and 1-1 are virtually the same. In short, the selection matrix is flawed and should be re-evaluated.

Page 101, third paragraph, first line – The selection matrix is flawed and should be re-evaluated.

Page 101, sixth paragraph, second line – There are no reasons stated why Alternative 2-6d was selected as the recommended plan. What are the other reasons?

4.1 Plan Components

Page 102, second paragraph, third line – The 15 percent concept level design conflicts with 35 percent as shown in Section 4.4.1.

Page 102, second paragraph eleventh line – The elevation of 110 is only 0.8 above the weir. How often would the floodplain bench be engaged? Also, earlier in the report it says that crest of the weir would be at elevation 108.2. Why is there a difference?

Page 103, first paragraph, fifth line – What is TCPS?

Page 103, third paragraph, first line – Why is sales tax of 7 percent used, when the prevailing sales tax at the site of the new Savannah Bluff Lock and Dam is greater than that. Does the costing not consider Local Option Sales Taxes? Is this a loss of revenue to Augusta/North Augusta/Aiken County?

4.3 Cost Sharing

Page 104 – The reader needs to understand the cost sharing formulas better, as the provision of money will drive the positions of the non-federal GPA and GDOT and perhaps the local communities as well. Moreover, the formulas should be correctly applied.

Page 104, Table 31—What do the asterisks refer to?

Page 105, first paragraph, second line – The guidance documents refers to the provision of the WIIN Act that the cost of either alternatives shall not be greater than the share as provided WRDA 2014 for the most cost-effective fish passage structure. “Therefore the post-authorization document must also detail what would have been the cost of such fish passage structure.” This directive needs to be presented in the summary document, so that the reader may understand the cost-sharing arrangement. The costs must be updated to today’s dollars, also.

Page 105, first paragraph, last line – Once again, alternative (ii) do not require a fish passage nor navigation features.

4.4.1 Design Consideration

Page 105, second paragraph, second line – The 35 percent design effort conflicts with the 15 percent given in paragraph 4.1.

Page 105, fourth paragraph, second bullet – Are there to be new comfort stations as part of the new boat ramp facility?

4.4.2 Construction Methods

Page 107, second paragraph, first line – The reader needs to review in more detail the sequence of construction to understand its details.

4.5 Lands, Easements, Rights-of-Way, and relocations LERR

Page 108, first paragraph, second line – The NFS (non-federal sponsor) is made up jointly of Georgia Ports Authority and Georgia DOT.

4.5.1 Lands

Page 108, second paragraph, last line – Conservation easements released would need compensatory mitigation to be provided.

4.6 Operations

Page 111, third paragraph, fourth line – Eliminate “the.”

4.10 Risk and uncertainty

Page 112, fifth paragraph, tenth line – Modifying the slope to steepen it would seem to be counterproductive with making the fish passage more successful, as it would take more energy for fish to traverse the slope.

Page 112, fifth paragraph, fourteenth line – The statement that “It is anticipated that the proper design of this alternative will result in successful fish passage,” is questionable. Where is the proof that this type of structure will work, given that failures have occurred at the Cape Fear River passage which is usually cited as the model and is the only one? Currently the Cape Fear River Watch is asking the Army Corps of Engineers to let that organization overhaul the structure, because the passages are too narrow to serve the striped bass, which is much smaller than the Atlantic sturgeon (which are lazier, too).

Page 113, first paragraph, fourth line – The length of delay in fish looking for the passage was not determined and would require additional study and modeling effort. Nevertheless, the project final analysis used this fictitious anticipated delay, the unknown amount of delay, to assert that Alternative 1-1 and others were not as good in passing fish as 2-6d. This conclusion is totally without basis in scientific study or fact. Also, ZEL Engineers has suggested that the project could install an underwater wall to guide the bottom-travelling sturgeon toward a fish passage a modest cost. The borderline between the need for making modifications and the desirability is a very small change in elevation. If the modifications are desired by the city, they should be paid for by the SHEP project.

Page 113, third paragraph, last line – The web application tool which was published in 2018 as a measure of the effect of the pool lowering was not very helpful. It was difficult for the trained technical person to understand, much less the laymen and the owners of docks. It was not very helpful. By contrast the physical drawdown was more informative and very telling.

5.13 Public and Agency Review

Page 116, fourth paragraph, second line – Actually, the draft integrated report was issued on February 15, 2019 and thirty-day public review period was revised to 60 days.

Page 116, fourth paragraph, fifth line – What will the supplemental environmental assessment cover and when will it be available for review?

Page 116, fourth paragraph, last line – Why is a new Environmental Impact Statement not needed, as this project is materially different from the previously approved No Action Alternative presented?

5.4.1 Regulatory Compliance

Page 118, first bullet – The Finding of No Significant Impact (FONSI) is very questionable. It is likely that a new Environmental Impact Statement should be prepared.

Page 120, last paragraph, last line – This turbulence and air entrainment runs counter to the assertion elsewhere in this report that dissolved oxygen will be enhanced in fishway path.

Page 121, third paragraph, last line – The response for Alternative 2-6a seems adequate as far as it goes, but, how do Alternative 2-6d and the other alternatives change the response to this recommendation? Or do they?

Page 121, fifth paragraph, last line – It appears that the response does not answer the question posed by USWS. It appears that the bench will be engaged very often. How is that managed? How will grass grow and be maintained under these circumstances? Will it not scour out?

Page 122, first paragraph, fifth line – Are adaptive management strategies to be implemented within the project? If so, what are they?

6.0 Mitigation

Page 122, Title -- What is the meaning of the asterisk?

Page 122, eighth paragraph, first line – What is AM?

Page 123, first paragraph, fourth line – The “most cost-effective fish passage” is a requirement of the WIIN Act for alternatives under (ii).

Page 123, Table 33 – States that calculations for OMRRR are included in the current cost estimate. These costs are non-federal. How are they determined and how are they to be enforced? How are they to be funded? Although the calculations for these costs are not included herein in this table, they are included in plan comparisons elsewhere in the report. Why are they not in both places?

Page 123, last paragraph, ninth line – When and how will the agencies, parties and governments be advised of modifications and afforded opportunities to comment?

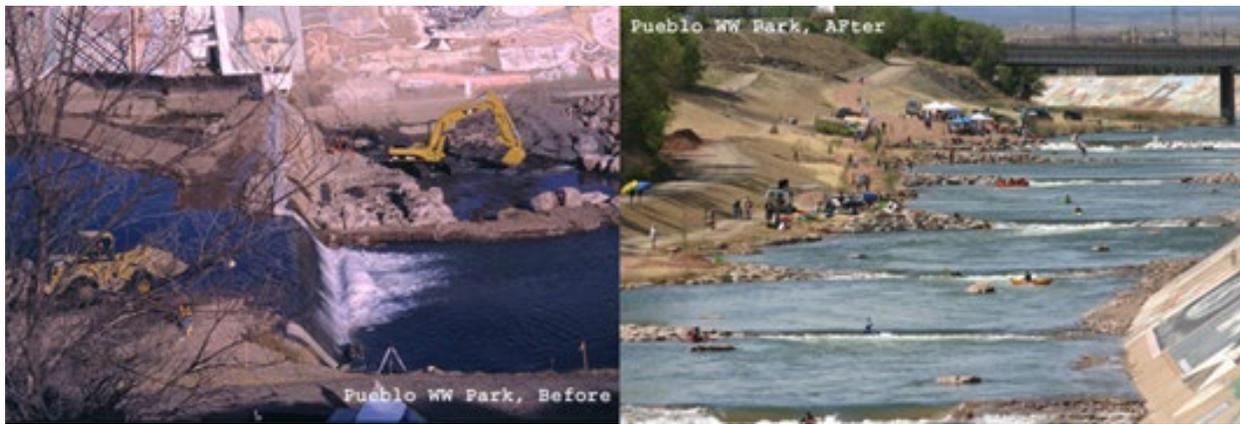
Appendix H
Other Alternatives That Have Been Proposed

Other Alternatives that Have Been Proposed

There are many other alternatives including those not-favored by the Corps and those proffered by Augusta/North Augusta citizens and groups. Four examples are included herein.

A. Proposed Rock Ramp with Crest Gates & Recreational Bypass Option

Integration and incorporation of recreational and safety features for in-river users into fish passages on rivers – particularly those that impact the full river width is not new. The project in the figure above is a full-river width fish passage project that was design and constructed by the Corps. The authors also designed the first FERC-regulated project in the 1990s that provided for fish passage, safety for a wide variety of powered and paddled craft, and created a recreational venue that has operated since its construction with no structural maintenance issues or serious mishaps – traits demonstrated in all of the integrated fish and recreational whitewater projects designed by the authors.



This Whitewater Park in Pueblo, CO was Designed and Built by the Corps for Passage of Fish

Incorporations of some type of hydraulic gates, crest gates, flashboard, etc. in projects that maintain an upstream pool elevation is commonplace on many impounding structures built in the US. While the author is not aware of any statistics, it is likely that the majority of man-made structures built in rivers to reliably maintain an upstream pool elevation have some type of hydraulic gate.

It is highly likely that any alternative will need to include gates and/or require a significantly widened rock ramp (much wider than the proposed 500 feet) to meet fish passage and maintenance of the upstream pool objectives. However, a gate type or configuration different from those currently installed at the NSBLD is advantageous to readily integrate with a rock ramp passage as proposed in most of the presented alternatives.

Automated crest gates (sometimes referred to as flashboards) are used on many different dam and fish passage projects across the country. These gates have proven quite durable and require relatively minimal maintenance costs – particularly compared to the existing gates. Furthermore, the controls and operating systems have shown to be low-

maintenance and easily automated. A proposed option using automated crest gates is proposed for consideration. This arrangement is shown schematically in the following illustration. This option would be a variation on the proposed rock-ramp alternatives. The major difference is that a series of crest gates in maybe 10 to 20-foot or more foot sections would be aligned along the crest of the rock ramp. The height of the gates would need to be determined as outlined below but could be on the order of 4 to 7 feet.

1. **Operational Approach.** The operational tactic entails that the crest gates not be significantly over-topped when raised. This is desired for both fish passage and safety concerns for in-river users. Rather, sections of crest gates would be raised or lowered so that flow over the crest of the rock ramp would be routed around the raised crest gates toward one or more parallel channels or sections of the downstream rock ramp. The individual sections of the crest gates would be raised or lowered to maintain more consistent depths and velocities over the crest and within the rock ramp for a wide range of flows.
2. **Potential Advantages.** This option has the potential to increase the water surface in the upstream pool during lower flows (as compared to a fixed crest rock ramp) while reducing the elevation of higher frequency flood flows providing some level of flood control. Overall the advantage of a crest gate system is adjustability and flexibility with demonstrated low life-cycle costs. From a fish passage perspective, crest gates could improve passage conditions in that they can maintain minimum target depths while effectively reducing passage velocities. Another benefit is that the addition of crest gates would reduce variations in peak velocities throughout a wider range of flows. The downstream rock ramp could be configured or “tuned” for much a wider variety of flow or passage conditions provided via control of the crest gates. This allows for adjustments by regulatory entities to accommodate changes in fish passage parameters based upon observational data and applying adaptive management concepts common to species protection. Crest gate operations could be adjusted over the year or on a much more frequent basis to optimize conditions for passage of different fish and/or seasons.
3. **Recreational Bypass.** A recreational whitewater bypass is proposed to be routed around the rock ramp through NSBLD Park. The bypass, along with a series of guide buoys and signage, would provide increased safety by encouraging users of the proposed water trail and other “flat-water” recreationalists to route around the rock ramp fish passage. The whitewater course would act as the anchor for the proposed outdoor adventure sports venue bring significant economic and quality of life improvements to the surrounding communities. This is outlined further in the *River Vision Plan*. The whitewater bypass may also provide for conveyance of additional higher flows and minor flow regulation to stabilize upstream water surface elevations. The outlet of the whitewater bypass could be extended further downstream (perhaps as far as if desired to further separate it from the rock ramp. Additionally, the outlet could be configured to discourage or perhaps prevent entrance of some species of fish from entering.
4. **Development and Refinements.** Analysis and configuration of this option needs to be further developed to demonstrate desired fish passage requirements, safety considerations, and recreational objectives. The height and width of the crest gates, corresponding “fixed” invert elevation of the crest of the rock ramp, configuration of the downstream

rock ramp, and orientation of the rock ramp in the river need to be determined by further refinement, analysis, and evaluation of:

- Water surface elevation criteria,
- Fish passage hydraulics,
- Safety considerations
- Hydraulic analysis for higher frequency flood flows and regulatory flood flows,
- Hydraulic analysis to avoid increased flooding at Lock and Dam Park.
- Avoidance of encroachment into Lock and Dam Park.

One design concern to be addressed is in preventing sturgeon ascending the rock ramp from getting stuck or trapped behind a raised crest gate. Attention to this potential issue is no different from other rock ramp design issues and particularly with alternatives maintaining upstream pool elevations. There are several ways and combination of ways this could be addressed. One approach would be to create a variety of parallel routes through the rock ramp that would “connect” to specific groups of crest gates. These routes could be optimized for specific lower flow ranges as well as fully inundated conditions. Specific sills in the rock ramp downstream of the crest gates could also be configured to route sturgeon toward lowered crest gates. Additional traditional fish exclusionary measures can be employed.

Another design related issue is localized velocities at the crest and adjacent to raised sections of gates. Arrangement of mid-stream features could be investigated to improve hydraulic and passage conditions. Concept development and verification of this area could be accomplished using a CFD hydraulic model (3-dimentional) or even physical model to evaluate depths and velocities over a wide range of flows and conditions.

Integration of the recreational bypass also needs further development to promote user safety, maintain objectives in the NSBLD Park, and integrate into the City of Augusta’s river corridor planning.

Summary

This option is similar to the alternatives presented in the Draft Report in that it is a full river-width rock ramp that spans the entire river. Crest gates and a bypass are included to maintain the upstream pool elevation, provide for safety, and can provide recreational uses to mitigate for lost recreation including the lock, and integrate with current recreational uses of the Savannah River and the City of Augusta’s river corridor and economic planning. Crest gates are used on a wide range of large and small river projects. They have proven cost effective on many hydropower, diversion, and projects that have included fish passages. Whitewater bypasses and promotion of whitewater and safety of in-river users have also been included on many in-river projects that include fish passage and impounding structures. A good example of this, is the fish passage venue built by the Corps in Pueblo, Colorado, which was designed and built for fish passage with accommodation of recreational whitewater users.

B. Proposed Fish Lift System

Thomas Brothers Hydro, Inc. has proposed retrofitting the existing lock with a modular fish lift to move fish similar to the process in place at the Holyoke Dam on the

Connecticut River. The company states that this facility could be installed instead of the rock weir or ramp at a fraction of the cost. See further details at www.savannahriver.org.

C. Proposed Reauthorization and Rehabilitation of Lock and Dam with Modest Fish Passage Similar to 2012 SHEP Fish Passage (or Fish Lift).

The Save the Middle Savannah River citizens group has proposed a “common sense” solution – reauthorization and repair of the Lock and Dam and construction of a modified structure such as a fish lift or modest-sized fish bypass to pass the sturgeon – that addresses all of the concerns outlined in these comments and protects the vital interests of both the CSRA and those of the SHEP project.

According to the group’s website, there is a solution that would align the environmental mitigation requirements of the Savannah Harbor Expansion Project (SHEP) with most of the goals of the Corps of Engineers, the Consortium for the Lock and Dam and the vital interests of both the Central Savannah River Area (CSRA) businesses and the broader Middle Savannah River communities under a commonsense, workable plan, at a reasonable, if not substantially lower, cost than the other solutions. It is already environmentally vetted, and is virtually shovel-ready. The solution includes the following major components:

- **Rehabilitation of the New Savannah Bluff Lock and Dam** consistent with the intent of the WIIN Act and the mitigation needs of the SHEP project, thereby protecting: navigation and recreation, control of the pool for some flood regulation, and to support the many events that depend on a pool that can be easier regulated, such as the Augusta Drag Boat Races, Iron Man, etc.
- **Construction of a Fish Bypass (or Fish Lift)** around the Lock and Dam as previously planned and approved for SHEP mitigation, similar to the already approved 2012 Fish Passage, along with the rehabilitation efforts listed above. Part and parcel to this, Save the Middle Savannah is asking the Corps to meet with South Carolina and Georgia DNR to ensure that the size of the bypass should be minimized to the amount necessary for sturgeon and other migratory fish, but no more, in an effort to control cost.
- **Evaluation of localized spawning habitat restoration projects** for endangered species downstream and elsewhere. There is much published material that neither a bypass or direct overpass will effectuate a facility that will be used by the sturgeon. Save the Middle Savannah is very much a proponent of using its influence to help ensure that, whatever alternative is decided for the sturgeon, that there is sufficient science to warrant success (versus simply checking a "mitigation box")

This common-sense solution would cost the least of all the alternatives heretofore proffered and would be the quickest to implement and the most beneficial for the SHEP initiative.

See <https://www.savethemiddleriver.com/>

D. Proposed Lock Modifications and/or Fish Lift and Downstream Fish Guiding Wall

ZEL Engineers, Inc. has proposed making modifications to the existing lock to take out the vertical steps in the floor levels and replace them with a sloping floor as a more suitable travel path for migrating sturgeon. The plan also includes installing a diagonal training wall submerged on the downstream side of the dam to shield bottom-travelling fish from the strong currents from the gates and to guide them toward the lock.³⁸

C. Other Alternatives to Be Considered

Consideration should also be given to other alternatives that meet the goals of SHEP and the Augusta and North Augusta communities, and the Central Savannah River Area.

³⁸ Letter from Jorge E. Jimenez, P.E. to Savannah District, U.S. Army Corps of Engineers, Planning Division, Attn: Ms. Robin Armetta (PM-P), dated March 12, 2019.

Appendix I
Transcript of City of Augusta Public Meeting, Lock and Dam
Meeting, March 31, 2019

In The Matter Of:
CITY OF AUGUSTA PUBLIC MEETING
LOCK AND DAM MEETING

March 31, 2019

Augusta Scribes Court Reporters, LLC
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1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

CITY OF AUGUSTA PUBLIC MEETING
LOCK AND DAM MEETING

March 31, 2019
Commencing at 5:00 p.m.

City of Augusta
Commission Chambers
535 Telfair Street
Augusta, Georgia 30901

Brittany N. Draper, CCR, CVR

PROCEEDINGS

MS. JACKSON: We welcome all of you to the commission chamber today for this very important occasion. This has been a topic of conversation in our community for many, many years. We're now at a critical juncture and it's very important that we have public input, and we can share with the decision makers and the federal government what the views really are -- people in our community.

Our park, Lock and Dam park, our river, all of the things that are associated with it have been tremendous assets for us. And we appreciate your concern for the protection of those assets. We appreciate you being here today.

We do have sign-in sheets, I think, at either podium. I know there's one over here for sure. So if you have not signed in already, you may still do so. We just wanted to do so we have record of everyone who has attended and who wanted to speak. We also have a court reporter with us so that we can record those comments and

we'll have a full text of all of the comments that have been made here today. However, before we get started with that, I would like to recognize all of the elected officials who are with us today. I notice a couple more have come into the room, so hopefully I will not miss anyone. I will start off with our elected officials from Augusta. Those include Mayor Hardie Davis, sitting up front, The Commissioner Sean Frantom from District 7, Commissioner John Clarke from District 10, Commissioner Dennis Williams from District 2, Commissioner Ben Hasan from District 6, Commissioner Elect Bobby Williams from District 5, Commissioner Sammie Sias from District 4, and Commissioner Bill Fennoy from District 1. Also, we're privileged to have representatives from our neighboring communities in South Carolina. Mayor Bob Pettit is here from North Augusta. Aiken County Chairman Gary Bunker, as well as Aiken County Councilman Chuck Smith are all in attendance, many of whom will have

remarks for us this evening. In addition, we are also pleased to have with us two members of Congress, one being Congressman Joe Wilson of South Carolina. I know he's in here somewhere -- there he is. Okay. And Congressman Rick Allen, who represents Augusta, is here as well. We thank all of you for being a part of this. We'll proceed now with a general overview and objective of our meeting by Tom Wiedmeier. He's our director of the Augusta Utilities Department. MR. WIEDMEIER: Good evening. Okay. So the original SHEP plan was to build a fish passage around the Lock and Dam. This was put forth in probably 2012. A problem with this was that it didn't touch the existing Lock and Dam, it did no repairs or upgrades to that. An interesting point is it's been pointed out that this, which is considered the no-action alternative by the Corps, this is what they compare all the alternatives to, could not be constructed

1 by the current legislation. What the Corps
2 arrived at as their preferred option is a
3 fixed weir with floodplain bench. This is
4 a rock dam spanning the river, it removes
5 the existing Lock and Dam, constructs a
6 rock dam with a fixed weir, and then it
7 excavates through the park a floodplain
8 bench which we essentially dig out about 10
9 feet. That bench would be about a foot
10 higher than the water surface.

11 So the Corps' modeling predicted that
12 the water depth at 5th Street would drop
13 from 11 and a half feet to 9 and a half
14 feet. A 1- to 2-foot impact is what they
15 were predicting by their modeling. This
16 is, in fact, what we saw, much, much
17 greater than a 2-foot drop, I would guess
18 4-plus feet.

19 So what the City has advocated, both
20 cities, Augusta and North Augusta are
21 advocating for is an alternative that they
22 consider and actually scored as high as
23 their recommended alternative, which is to
24 rehab the dam, build a fish passage on the
25 Georgia side. It would tear out the

1 existing lock and build a fish passage.
2 So in their evaluation, you'll notice
3 that both alternatives, 1-1 is what the
4 City is advocating for, 2-6d is what the
5 Corps arrived at. Both scored equally at a
6 four. At the time that they revealed their
7 evaluation back in November, Augusta's
8 preferred alternative was priced at \$61
9 million in capital costs and the Corps'
10 preferred alternative was 68.9.

11 The difference was the annual O&M
12 cost. They predicted \$950,000 a year would
13 be needed to maintain 1-1. Their
14 alternative, they projected \$45,000 a year.

15 Now, some new information was just
16 received this week by the letters to
17 mayors, both mayors, and the numbers have
18 changed dramatically. And they're using a
19 different basis. I thought that this was
20 in present value, Mayor Pettit doesn't
21 think that that's the case, but regardless,
22 the price for 1-1 for present value, or
23 something like that, is now \$380 million,
24 which includes all your O&M.

25 And by the way, they're doing this on

1 a 100-year lifecycle, so -- and their
2 preferred alternative has a present value
3 of \$105 million.

4 So I make that point to say that
5 we're kind of dealing with a lot of
6 changing numbers and we're trying to
7 respond to that.

8 I'd like Tom Robertson, who is a
9 consultant that's been retained by both
10 cities, to make a comment on the dilemma
11 that a fixed weir presents.

12 MR. ROBERTSON: Thank you, Tom.

13 I don't have any pictures of this,
14 but I'd like to just point out that -- sort
15 of how we got to where we are. That the
16 Corps came up with what they call two value
17 engineering alternatives, so before this
18 WIIN Act was put in place, one of those was
19 to construct a rock ramp or fish passage
20 over the top of the Lock and Dam, keeping
21 the lot, by the way. And then the second
22 alternative was to build a rock weir or
23 pile of rocks about a mile upstream. And
24 those two alternatives were what was used
25 to draft the legislation, either a rock

1 ramp over the dam or a separate structure
2 elsewhere. Well, those would be fixed so
3 you couldn't open the gates and let the
4 floodwaters through like you could before
5 on either one of those alternatives.

6 So of the alternatives that are now
7 before us, those two alternatives are two
8 that the Corps has summarily X'd out, so
9 neither one of those of the original
10 alternatives is even feasible. And the
11 reason for that is is that by the federal
12 regulations on floodplain, you can't raise
13 the 100-year flood, and the Act itself says
14 you can't lower the pool.

15 So if you put a pile of rocks in the
16 middle of the river and you can't open the
17 gates anymore, then, I mean, the hand of
18 God isn't going to reach down and pull that
19 out of the way when the flood came. So you
20 can't have it both ways. You're either
21 going to raise the floods or you're going
22 to lower the pool.

23 So that's why we think that the 1-1
24 is the superior -- or really the only
25 option that the Corps has on the table

1 today that actually can do what the WIIN
2 Act says, and that is to save the gates.
3 So I'd just like to point that out. And
4 I'll step down. Thank you.

5 MR. CAMPBELL: All right, ladies and
6 gentlemen. What we are about to do now is
7 have brief comments by our special guests
8 and our mayors.

9 Congressman Wilson, if you would like
10 to come up, and he'll be followed by
11 Congressman Allen, then Mayor Davis, Mayor
12 Pettit, and then Chairman Bunker.

13 CONGRESSMAN WILSON: And ladies and
14 gentlemen, it's really inspiring to see the
15 friends of the Savannah River of Georgia
16 and South Carolina together.

17 It was really inspiring to me to come
18 in with Roy Simkins. He was the person who
19 took me to the Lock and Dam years ago and
20 said -- and told me how important it was.
21 And I saw what a great asset that is, and
22 how it needs to be maintained.

23 And then I'm very grateful that Mayor
24 Davis and I met in Washington on this
25 issue. And we've had wonderful meetings.

1 And then Mayor Pettit, I'm really
2 grateful, mentioned to me that when he was
3 sworn in, one of the first topics that we
4 discussed was the importance of maintaining
5 the Lock and Dam, maintaining the pool.

6 And another person that I really want
7 to give so much credit to is Congressman
8 Rick Allen. There's not a day that goes by
9 that Congressman Allen and I, on the House
10 floor, do not strategize and plan letters
11 and different efforts to maintain the pool.

12 And we also have the opportunity to
13 work with Senator Tim Scott and Senator
14 Lindsey Graham. And they will be having
15 representatives actually visit the lock
16 tomorrow.

17 And the point is that we understand
18 that the congressional intent of the
19 language of the Water Infrastructure
20 Improvement for the Nation Act, the WIIN
21 Act, is to interpret that the pool must
22 maintain the physical level of the heighth
23 on the date of enactment, which was
24 December the 16th, 2016.

25 According to information from the

1 U.S. Geological Survey, the water level of
2 the Savannah River at the 5th Street bridge
3 varies between 113.5 feet and 114.5 feet.
4 And the pool should be maintained at 114.5
5 feet, which is largely what it is today.

6 The Corps' draft recommended plan
7 would lower the pool as a -- has been
8 indicated, but we know that it's
9 catastrophic what happened. This was not
10 just a minor 1- or 2-foot drop, but it was
11 a catastrophic drop.

12 And I believe that it's simply not
13 within the law because the WIIN Act
14 provides that the physical level be
15 maintained on the date of enactment.

16 I also believe that the water level
17 of 114.5 is what should be approved. It's
18 disappointing to me that the Corps of
19 Engineers has misinterpreted the intent of
20 the WIIN Act, but we know that the physical
21 level is what was intended.

22 I want everyone to know that our
23 office is available to help anyone on
24 comments. We have Martha Ruthven here.
25 Martha is at our office at the

1 administration building in Aiken and
2 assisting anyone with comments.

3 And then we have on the board that I
4 brought, that we have ways by postal mail
5 or by email to make comments, because I
6 just know that the Corps of Engineers has
7 already taken one step, which is good, by
8 providing for an additional 30 days to
9 comment, through Tuesday, April the 16th,
10 at 4:00 p.m.

11 And I'm just so hopeful that with the
12 persons who are here tonight, with the
13 messages that you will be providing, that
14 the Corps will pay attention to the
15 citizens of this community and in
16 particular see how incredible it is bistate
17 and, I understand, even bipartisan.

18 And so this is an amazing, remarkable
19 circumstance. I wouldn't want to point out
20 anybody who might be of a different party,
21 but hey, this has united the community in
22 such a positive way and the people who are
23 here can make a difference. God bless you.
24 Thank you.

25 CONGRESSMAN ALLEN: Joe also failed

1 to tell you, he's a ranking member on the
2 Armed Services Committee and has been very
3 generous with his time and efforts in
4 working.

5 This is under the United States Army.
6 You know, we fund the Department of Defense
7 and, of course, the SHEP funding is a
8 separate -- it's under the Transportation
9 and Infrastructure Committee and, of
10 course, that's how the work on the Lock and
11 Dam is going to be funded. So Joe has been
12 a great partner and, Joe, thank you for
13 everything.

14 In fact, we delivered, or hand
15 delivered, a letter to the -- Joe had a
16 meeting with the Secretary of the Army,
17 yeah, and we went right to the top and we
18 delivered a letter.

19 And, basically, the letter said that
20 the Corps had been very untruthful with two
21 members of Congress. We think that is
22 subordination and it should be dealt with.
23 And so we're hoping -- we've asked for a
24 follow-up meeting and we're hoping that we
25 get some results out of that 'cause,

1 frankly, I am absolutely tired.

2 As the President says often to me, he
3 said, this is just common sense, you know.
4 I mean, yeah, we have a pool of water we've
5 maintained since the '30s. This dam is an
6 engineering marvel. This thing works. I
7 mean, I've been down there, y'all, and the
8 water has been the same level on both sides
9 during this rainy season and the gates have
10 been wide open. So we know it works.

11 The fish -- the fish ladder, you
12 know, I have studied that and studied that
13 and studied that, and I -- you know, I
14 don't want to get into all the details on
15 that, but we have spoken with NOAA, we've
16 met with those folks, and frankly we think
17 we got some better ideas there, but let's
18 deal with this first.

19 We have got to get the Corps of
20 Engineers to understand that there will be
21 no exceptions, none whatsoever. That Lock
22 and Dam is going to stay in place. It's
23 going to be repaired and it's going to be
24 maintained, period.

25 I met with them in April of 2015 and

1 that was the words out of my mouth. They
2 went behind my back and somehow got this
3 legislation in a water bill that I could
4 not vote on because I knew nothing about
5 the legislation. But the good news is it
6 did maintain the level of the pool and I
7 was assured that that pool would be
8 maintained and we would look at some
9 option.

10 Well, folks, we're out of options.
11 And what I don't want to happen is for us
12 to -- we have to get that port deepened.
13 It's the number four port in the country.
14 We don't want to delay the deepening of
15 that port. What we want the Corps to do is
16 get this thing done, get the design done,
17 get the fish ladder done, and let's get
18 under construction and be done with it.

19 You know, the idea is we have got to
20 get this under construction by 2021. And,
21 you know, every time, you know, like 1-1
22 comes up, they say, okay, it's going to
23 delay the project. And we got NOAA to
24 commit to, like, 130-day review -- by the
25 way, this is Lauren Hodge, and Lauren,

1 this -- she has lived the life of this
2 thing since the -- since this -- since our
3 first meeting in April of 2015. So if you
4 need to know any details or want any
5 correspondence from our office and how
6 we're dealing with this thing, Lauren has
7 it all, and she has all the documentation
8 on it.

9 But the bottom line is, we have got
10 to get the Corps to go ahead, move forward
11 in this process. I do not trust their
12 numbers. In the first meeting, they came
13 to me, they said the fish passage was going
14 to cost 30 million and the repair to the
15 dam was going to cost 20 million. And I
16 said, well, what's the problem? They said,
17 we don't have the money to repair the dam.

18 I'm looking at numbers here. I don't
19 believe this. And if we have to, we will
20 remove the Corps from this project. We
21 will put the Georgia DOT in charge of this
22 thing and we will do it for a portion of
23 those funds.

24 So as you can tell, I'm a little
25 passionate about this because I just don't

1 like the way some of these agencies do
2 business, which is one of the biggest
3 problems the United States Congress had.
4 I can't -- I gotta tell you real
5 quickly, Roy called me one day and he said,
6 who in the heck is in charge up there? The
7 United States Congress or the Corps of
8 Engineers? I said, Roy, we're doing the
9 best we could do. And we are. We're
10 fighting it all the way.
11 Roy, thanks for all your work on
12 this, and your attorney who has done
13 wonderful work in helping us get through
14 this process.
15 But that's where we are. Thank you
16 for being here today. The reason you're
17 here today is to convince the Corps of
18 Engineers that we're right. And this is
19 just common sense.
20 Thank you for being here. Thank you
21 for sharing this with us. And just --
22 we've just got to get it done. That's just
23 all it is, just common sense. Thank you
24 very much.
25 MAYOR DAVIS: I do want the citizens

1 of Augusta to know that that's my
2 Congressman.
3 I want to, one, thank everybody for
4 coming out tonight. And these will be
5 generally referred to as my comments that
6 will go into the official record along with
7 the work that's being done by our team,
8 with Tom Wiedmeier, Robertson, and the
9 expert group who's helping them.
10 I want to direct these comments to
11 Governor Kemp, Lieutenant Governor Duncan,
12 Speaker Ralston, to our two senators on the
13 Georgia side who have been noticeably
14 absent in this conversation, Senators
15 Perdue and Isakson, and I wanted to direct
16 these comments to the Corps and the Georgia
17 Ports Authority and GDOT.
18 Governor Kemp, I'm sure that you're
19 aware of the situation in Augusta, Georgia,
20 regarding the New Savannah Bluff Lock and
21 Dam and the United States Army Corps of
22 Engineers' desire to replace the dam with a
23 lowered fixed crest weir with a dry
24 floodplain bench, that has been referred to
25 as Alternative 2-6d.

1 In February, the Corps conducted a
2 fixed weir pool simulation to allow members
3 of the public and stakeholders along the
4 Savannah River to experience the conditions
5 that accompany Alternative 2-6d.
6 The Army Corps of Engineers assured
7 the cities of Augusta and North Augusta
8 that our riverfront would not be
9 significantly impacted. The simulation
10 demonstrated that the Army Corps of
11 Engineers was wrong.
12 The leadership, the citizens, and the
13 stakeholders of Augusta, Georgia, North
14 Augusta, South Carolina, have made it clear
15 that the conditions of the river during the
16 simulation was not and is not what we want
17 to see every day, 24 by 7, 365 days of the
18 year.
19 The consolidated government of
20 Augusta, Georgia, and their citizens have
21 come to rely and depend on the pool of
22 water that the dam has created since 1937
23 when the dam originally when into service.
24 It is unacceptable for the Corps or
25 anyone to believe that it's morally or

1 ethically right or appropriate to sacrifice
2 our communities, our life, our health, our
3 welfare and safety, so that the Savannah
4 Harbor Expansion Project could continue
5 without any consideration for those of us
6 who are upstream.
7 And as a result of that, laws and
8 regulations across every level of
9 government have acknowledged the fact that
10 clean water is the first step along the
11 critical path for assuring the health of a
12 community.
13 The Savannah River's clean water has
14 financed healthy growth in Augusta for
15 hundreds of years. In Augusta, over a
16 thousand miles of pipeline deliver the
17 Savannah's water to folks as far away as
18 Fort Gordon. One of the only installations
19 that continues to grow as a part of the
20 DOE -- DOD complex, providing drinking
21 water, bathing water, and on-demand
22 resources for other uses.
23 The Georgia Environmental Protection
24 Division projects a 20 percent jump in our
25 area's population over the next 30 years.

1 As a result of that, by 2050, Mayor Pettit,
2 Augusta's water needs will increase by 34
3 percent. Augusta has incorporated these
4 projections into our new comprehensive plan
5 from last year that we're calling Envision
6 Augusta, a Plan for 2035. The Corps,
7 likewise, relies on EPD's 2050 numbers in
8 the management of their assets throughout
9 the water basin.

10 Despite all of this, the plan for
11 Augusta fails to take our future needs into
12 account. They've counted our intakes, they
13 reviewed our permits, and determined that
14 their plan will not have an adverse impact
15 on our water supply.

16 A legitimate analysis would reflect
17 the reality of stocking our drastically
18 downsized pool with two species of
19 endangered fish that to this very day I
20 still have not seen, and then asking that
21 same pool to support the needs for
22 withdrawal, discharges, recreation,
23 navigation, development, and special events
24 of a 20 percent larger population.

25 The Army Corps of Engineers is aware

1 that the river provides for nearly 90
2 percent of Augusta's water needs, and their
3 failure to legitimately address their
4 project's impact on our area is
5 unacceptable.

6 Their analysis should address head on
7 the very real possibility that their plan
8 should either compromise -- could either
9 compromise the health and well-being of our
10 growing city or cut that growth off at the
11 knees. That is unacceptable. And we will
12 not stand by silently, but we will pursue
13 every avenue to make amends and get this
14 corrected.

15 The City of Augusta and our
16 neighboring communities have stood silently
17 in support of an alternative that we did
18 not develop, but rather the Corps
19 themselves provided us, and that was
20 Alternative 1-1, which scored the same as
21 Alternative 2-6d on the Corps' matrix,
22 which as I might add, the numbers you see
23 there are astronomically different than
24 what we were provided during the matrix.

25 And so I close my comments with this:

1 We are one community, we are one river, and
2 we have been told we are one Georgia, not
3 two Georgias. We have been told that we
4 will put Georgians first, and I submit to
5 you that putting Georgians first includes
6 those of us in Augusta, not just in
7 Savannah.

8 MAYOR PETTIT: I've been mayor for
9 nearly 2 years and the thing I've gotten
10 best at is lowering microphones.

11 Thank you for the eloquence and the
12 passion, and I think I'm going to fall down
13 on the side of passion. I unfortunately or
14 fortunately am an engineer just like Mayor
15 Davis, and so I love details and becoming a
16 wonk when it comes to looking at all the
17 documents that are provided to us. But I
18 want to talk at a different level today.

19 You know, as -- I am the Mayor of
20 North Augusta, South Carolina. The impact
21 of what the Corps of Engineers is talking
22 about will be devastating to our cities.
23 And this is all for their harbor in
24 Savannah, Georgia, so it can be deepened,
25 and I understand the importance of that.

1 You know, the recent simulation was
2 advertised to prove to us that the Corps'
3 alternative would have minimal impact. In
4 fact, the Corps said before it started that
5 we would -- there wouldn't be any
6 noticeable difference really. You know,
7 obviously, that was far from what we saw.
8 That was far from reality.

9 We saw boat docks sitting on dry land
10 far from the water, riverfront homes
11 purchased with probably life savings now
12 without a river. I find it frightening,
13 quite honestly, to find that the Endangered
14 Species Act is being used to damage our
15 cities and this community.

16 And this isn't really about the WIIN
17 Act, it's about the Corps of Engineers
18 wanting to get rid of the Lock and Dam.
19 You know, the Corp's finally found a fish
20 to help get it done, even though in the
21 previous 14 years, there was not an effort
22 expended to get the money to help that
23 fish.

24 Now, SHEP will provide the money, but
25 in my opinion, North Augusta and Augusta

1 and you are paying the price. Thank you.
2 MR. BUNKER: Good afternoon,
3 everyone. I'm Gary Bunker, Chairman of the
4 Aiken County Council. And I've learned
5 every time I follow Mayor Pettit, I have to
6 raise the microphone on these.

7 I am very honored to be here
8 representing Aiken County, being able to
9 come over to this side of the river in
10 order to work on a project of mutual and
11 common interest here.

12 I do want to recognize my colleague
13 Chuck Smith, who serves District 4, Aiken
14 County Council, represents the City of
15 North Augusta, and has been also a very
16 strong advocate in regards to the Lock and
17 Dam issue.

18 I do intend to read into the record
19 the comments, and I'm going to submit a
20 hard copy in regards to this issue.

21 The recent drawdown of the Savannah
22 River to simulate the implementation of
23 option 2-6d on the New Savannah Bluff Lock
24 and Dam was a real eye-opener. My
25 understanding is that the estimated drop in

1 the water surface elevation between the
2 status quo at approximately 114.3 feet to
3 the simulated 112.4 feet for option 2-6d
4 should have totaled 1.9 feet. The observed
5 change was greater than predicted.

6 Is there an explanation for this
7 discrepancy, and what have we learned about
8 the reliability of these forecasting
9 models?

10 A small example of what we saw during
11 the drawdown occurred at the Horse Creek
12 Wastewater Treatment Plant in Aiken County.
13 We witnessed foaming conditions at the
14 outfall, which became level with the
15 surface of the pool. This didn't inhibit
16 plant operations, but it is not an optimal
17 solution.

18 If option 2-6d results in the pool
19 being lowered to this level, then Aiken
20 County taxpayers will foot the bill to
21 lower and extend this outfall structure.

22 The Aiken County Council has been
23 concerned about the future of the New
24 Savannah Bluff Lock and Dam for nearly 20
25 years. In the year 2000, it passed a

1 resolution requesting that the dam not be
2 closed. It cited the importance of the
3 current pool level for industrial users,
4 water utilities, recreation, and tourism.
5 And nearly 20 years ago, the millions spent
6 by the cities of Augusta and North Augusta
7 on riverfront development were already a
8 concern.

9 In 2017, the Aiken County Council
10 supported repair and rehabilitation of the
11 dam, including a fish passage to preserve
12 the pool to current level and to mitigate
13 flooding risks in Augusta and North
14 Augusta.

15 Council thought the primary
16 objectives under the Water Infrastructure
17 Improvements for the Nation, or WIIN, Act
18 included the maintenance of the pool for
19 water supply, recreation, flood control.

20 And this past January, the Aiken
21 County Council officially endorsed option
22 1-1 over option 2-6d. This option would
23 best meet the WIIN Act requirement that any
24 mitigation project must maintain the pool
25 at the elevation existing at the date of

1 its adoption.

2 On the other hand, any significant
3 lowering will create operational issues for
4 industry and local government along with
5 aesthetic and recreational issues, putting
6 at risk millions of dollars of investment
7 along the riverfront. North Augusta's
8 Riverfront Village doesn't want to become
9 North Augusta's mudflat village.

10 And in a further development, the
11 South Carolina General Assembly passed a
12 budgetary proviso prohibiting the South
13 Carolina Department of Health and
14 Environmental Control from assisting any
15 efforts on the New Savannah Bluff Lock and
16 Dam that are inconsistent with the existing
17 water quality and navigability conditions.

18 The proviso explicitly references the
19 114-foot elevation, quote, "for the
20 preservation of adequate and sufficient
21 water quality, navigation, water supply,
22 and recreational activities," unquote.

23 Aiken County favors option 1-1. From
24 what we've seen, the recent drawdown has
25 done nothing to convince us otherwise. If

1 this is what option 2-6d looks like, then
2 the Aiken County Council wants nothing to
3 do with it. Thank you very much.

4 MR. SMITH: Good afternoon. I'm
5 Chuck Smith and I represent District 4,
6 North Augusta, and thousands of people
7 along that river on the side of North
8 Augusta.

9 This would be a devastation to our
10 community I don't think we know the likes
11 of until it happens. The unintended

12 consequences of letting that river run dry
13 will be economically devastating to this
14 area for many, many, many years to come.

15 How many times do we have to learn
16 this lesson? In 2000, we let the river run
17 dry again to see what the damage would look
18 like, and it was devastating. The walls
19 started falling inside on each other, our
20 community lost millions of dollars of
21 property damage. How many times do we have
22 to learn it?

23 We did it again to look at the
24 drawdown. As the Corps said, there's not
25 going to be any damage. The damage was

1 tremendous, and if they would've allowed it
2 to go full -- the full test, the damage,
3 I'm sure, would've been just as bad as it
4 was in 2000 when they let it run dry.

5 The thousands of people that would
6 lose their livelihoods and their
7 investments in that river would be
8 tremendous. We have invested hundreds of
9 millions of dollars in that river, and
10 we're talking about \$275,000 of difference
11 after we get -- after we lose the \$8
12 million on the other plan to this option
13 2.6.

14 Option 1.1 is the only option.
15 Otherwise, we're going to lose hundreds of
16 millions of dollars over the years to come
17 and the unintended consequences the Corps
18 has no idea of.

19 So I think this is great that we have
20 everybody together to rally around. The
21 benefits of these communities and what that
22 river means to us. We gotta fight this
23 thing to the -- to the dire end. Thank
24 you.

25 MR. CAMPBELL: All right. So,

1 briefly, what I would like to do is just go
2 over what I like to call some rules of
3 engagement before the comment period.

4 If you'd like to provide public
5 comments, please completely fill out the
6 sign-in sheets located at each podium to my
7 left and to my right. Please speak into
8 the mic to be heard clearly. We have a
9 court recorder present, and we would like
10 for her to be able to capture everyone's
11 comments accurately.

12 In an effort to ensure everyone is
13 heard, each person will have no more than
14 three minutes to provide public comment.
15 Please do not interrupt the speaker until
16 their time has expired or they have
17 completed their statement.

18 To effectively use the time
19 permitted, please consider yielding your
20 opportunity to speak if someone before you
21 has clearly stated your comment.

22 Please use the forms in the back if
23 you would like to provide written comments,
24 or you can email your comments to
25 mayordavis@augustaga.gov. And last but not

1 least, be nice. Y'all have a good evening.

2 Also, when you come to the mic,
3 please state your first and last name and
4 the address of your residence. Thank you.

5 First -- first, we'll have a
6 Mr. Todd, Moses Todd.

7 MR. TODD: Good evening. I've
8 submitted comments to Mayor Davis, but I'll
9 read them for the record.

10 UNKNOWN SPEAKER: Name and address.

11 MR. TODD: My name is Moses Todd. My
12 address is 2115 Noland Connector, Augusta,
13 Georgia. And I'm in Representative Allen's
14 district.

15 So I'm a resident of Georgia who fish
16 the Savannah River. In addition to
17 fishing, we rely on the Savannah River for
18 water pool for drinking water, boating, and
19 recreation use. Georgia industrial --
20 industry rely on the Savannah River for
21 water for the production of their products.
22 Georgia Power, Southern Company rely on the
23 Savannah River for cooling water for four
24 nuclear reactors.

25 I am in support of keeping the Lock

1 and Dam. It's essential to the City of
2 Augusta that the pool level upstream from
3 the Savannah Bluff Lock and Dam be remained
4 at the average current level and the Lock
5 and Dam be repaired and kept as part of the
6 Savannah River infrastructure.

7 I represent today here 1,000 members
8 of Plumbers and Steamfitters Local 150. If
9 you know anything about plumbers or
10 pipefitters, steamfitters, without water,
11 you know, it's kind of like Mr. Wiedmeier
12 said, the director of our utilities, that
13 water is life and to us as pipefitters and
14 plumbers, water is life. And without that
15 river, without the support of the water for
16 industry, you know, we don't -- we don't
17 have jobs. We're talking about tens of
18 millions, if not hundreds of millions in
19 economical development on that river that
20 we rely on as blue collar workers, you
21 know, for jobs.

22 So I would like for the Corps to
23 consider that when they're considering
24 cost, that there's costs outside of the
25 hundred-year projection that they give us

1 and there's -- and they mention a cost, but
2 they didn't mention the revenue. You know,
3 that we understand that there's trust
4 funds, you know, for upstream and for the
5 harbors, and there's funds that's --
6 revenue that's raised, you know, over this
7 hundred-year period.

8 So we want them to be fair to
9 consider everything and consider the people
10 as well as the fish in that river. Thank
11 you.

12 MR. MONTGOMERY: My name is Erick
13 Montgomery. I live at 606 Overland Road in
14 Augusta. I'm also the Executive Director
15 of Historic Augusta, which is located at
16 415 7th Street.

17 The New Savannah Bluff Lock and Dam
18 is a historic structure completed in 1937
19 and has historic significance in both the
20 states of Georgia and South Carolina. The
21 Lock and Dam was determined eligible for
22 listing in the National Register of
23 Historic Places in both 1996 and again in
24 2001 by the Historic Preservation Division
25 of the Georgia Department of Natural

1 Resources under provisions of the
2 National Historic Preservation Act.

3 Brockington and Associates completed
4 an additional assessment in 2013
5 summarizing the history of the Lock and
6 Dam. This included revealing archival
7 photos and drawings as well as current
8 assessments. I have here with me a copy of
9 the relevant parts of that report.

10 These determinations and assessments
11 have consistently recommended preservation
12 and rehabilitation of the New Savannah
13 Bluff Lock and Dam, while introducing the
14 required fish passage in a sensitive manner
15 that would not detract from the historic
16 structure in any significant way.

17 Although the Brockington study was
18 commissioned to only assess the area
19 immediately surrounding the Lock and Dam,
20 we submit that the entire water impoundment
21 that was created by the structure is of
22 historical significance, having been in
23 place well over 50 years, now 82 years, and
24 this -- this would include the entire pool
25 up through downtown Augusta and North

1 Augusta.

2 The National Register of Historic
3 Places criteria calls for buildings, sites,
4 structures, objects, and districts to be at
5 least 50 years old, which means the New
6 Savannah Bluff Lock and Dam easily meets
7 the age requirement for the National
8 Register eligibility.

9 The Georgia State Historic
10 Preservation office has determined that the
11 Lock and Dam is eligible for the National
12 Register under criterion A and C of the
13 National Historic Preservation Act.

14 Criterion A says that properties that
15 are associated with the events that have
16 made a significant contribution to the
17 broad patterns of our history are eligible.
18 And according to the determination of
19 eligibility, the New Savannah Bluff Lock
20 and Dam meets this threshold because of its
21 association with transportation history due
22 to the locks and the water connection
23 between the upper Savannah River and the
24 Atlantic Ocean.

25 Under Criterion C is for -- which is

1 for properties that embody the distinctive
2 characteristics of a type, period, or
3 method of construction, or that represent
4 the work of a master, or that possess high
5 artistic values, or that represent a
6 significant and distinguishable entity
7 whose components may lack individual
8 destruction.
9 According to the determination of
10 eligibility, the New Savannah Bluff Lock
11 and Dam meets this threshold because of its
12 design as a significant -- as significant
13 examples of architecture and engineering,
14 as well as various structures associated.
15 To conclude, we urge the U.S. Army
16 Corps of Engineers to select the option
17 that will preserve the New Savannah Bluff
18 Lock and Dam, rehabilitated in such a way
19 that it can -- that it will continue to
20 maintain the historic pool level that
21 was -- that was -- that existed between
22 Richmond and Aiken counties for over 82
23 years, and allow that pool to continue to
24 serve the citizens of the United States for
25 the purposes of water supply, industrial

1 needs, recreation, and overall quality of
2 life amenities. Thank you very much.
3 MR. AMIN: Good evening, everyone.
4 My name is Parin Amin. I live at 3641
5 Foxfire Place, Columbia County, Martinez,
6 Georgia. And I just want to start by
7 addressing some of the things that have
8 been going on here.
9 I've been to a bunch of these
10 meetings, I've called some of my
11 representatives, and the Army Corps on
12 numerous occasions has told us that the way
13 the WIIN Act is being interpreted at 114.5
14 feet is not accurate.
15 There's nothing in the WIIN Act that
16 mentions any specific level that is
17 protected. It says specifically that the
18 uses of the pool are protected, and those
19 uses are water supply, navigation,
20 recreation.
21 So for those of us that think that
22 the specific level has to be the exact same
23 as it was on that date is just not an
24 accurate interpretation of the WIIN Act.
25 If any of us here had spent the time

1 before this body passed a resolution that
2 said that they were going to go on with
3 what the Save the Pool People wanted, had
4 done their due diligence, they would have
5 seen that that's the way it is.
6 Now, we have a couple of options
7 here. We don't have to take the Army Corps
8 option, but the option 1-1, when you saw
9 the -- the matrix up there, and they did
10 both score the same, but if you looked at
11 the very first category which said Fish
12 Passage, it was a zero for keeping the Lock
13 and Dam and the one for their alternative.
14 Now, the fish passage is the number
15 one goal of this project. That's why it's
16 funded. So repairing the Lock and Dam and
17 having a fish passage on one side simply
18 doesn't meet the requirements of the
19 lawsuit that was settled on by numerous
20 parties from both states, South Carolina
21 DNR, Georgia DNR, Savannah Riverkeeper,
22 Ducks Unlimited, and the many other groups
23 that sat down and discussed all these
24 options.
25 Now, we aren't stuck with the Army

1 Corps' only option. There are -- there is
2 another option that's being worked on, but
3 a lot of people haven't heard it. The
4 Savannah Riverkeeper is working on another
5 option, but a lot of us here, and I know
6 'cause I've seen these faces before, have
7 something against the Savannah
8 Riverkeeper's office.
9 I don't work for them. I don't
10 volunteer for them. I'm just a regular
11 person who's been following this. Nobody
12 wants to hear her option, which would give
13 us a higher pool, still pass the fish, and
14 still allow for recreation and water
15 supply.
16 MR. CAMPBELL: Sir, one minute.
17 MR. PARIN: One minute? Okay.
18 This option doesn't cost much. I
19 don't know the specifics of it, but it's a
20 modification of the rock weir design, and
21 it would work. And it will also allow us
22 to save the park and have a whitewater
23 park, should we choose to fund that in the
24 future. It doesn't mean we have to do that
25 right now, but we could keep the park and

1 not make it a floodplain bench.
2 So I just wanted to point out there's
3 a lot of information out here that a lot of
4 people aren't -- just aren't willing to go
5 dig down into or find the details about
6 this. And I understand there's going to be
7 some people that want to keep their docks
8 the way they are, but I don't think it's
9 very unfeasible to ask somebody to move
10 their dock to a river that still exists.
11 As we could see in the pictures, the
12 river didn't dry up and go anywhere. It
13 just moved a couple of feet over.
14 (Comments from the audience.)
15 MR. AMIN: I've seen the pictures,
16 y'all. It's okay. It's all right.
17 UNKNOWN SPEAKER: Dreamer.
18 UNKNOWN SPEAKER: That picture is my
19 property.
20 MR. AMIN: Yeah.
21 UNKNOWN SPEAKER: That picture is my
22 property.
23 MR. AMIN: That one?
24 UNKNOWN SPEAKER: I have 5 feet on my
25 dock. I don't have water there if this

1 happens; okay? I've invested my life
2 savings. For 15 years, I've invested my
3 life savings. I'm left with nothing.
4 That's my property. Everybody look at that
5 picture. This is my face. I own that
6 property. Explain to me why I should have
7 to move my dock out with a permanent
8 (inaudible).
9 UNKNOWN SPEAKER: Why did you build
10 in a hundred-year floodplain anyway?
11 MR. CAMPBELL: Excuse me. Ladies and
12 gentlemen. Ladies and gentlemen. Ladies
13 and gentlemen. Let's collect ourselves.
14 We know this is a passionate and emotional
15 topic. Please limit your comments to three
16 minutes; okay?
17 Next person that is up is Ashley
18 Holmes.
19 MS. HOLMES: Hey guys, I'm Ashley
20 Holmes. I was born and raised here in
21 Augusta, Georgia. Grew up fishing on the
22 Savannah River with my father. Have seen
23 an abundance of species throughout that,
24 and my interactions as an undergraduate at
25 Augusta University in ecology, this is my

1 background. I've gotten pretty muddy in
2 our area in research and in volunteer work.
3 I have thousands of hours of volunteer work
4 in our area. And that's just my
5 background.
6 My interests here are to try to unify
7 us as a community, try to engage with --
8 there are not a lot of people my age and
9 younger who are engaging on this topic
10 right now. I feel like that's a -- that's
11 a travesty because whatever we decide is --
12 30, 40, 50 years into the future, folks
13 younger than me are going to be dealing
14 with the ramifications of those decisions.
15 And so that's part of why I'm here.
16 I'm not particularly good at public
17 speaking. I don't have to do it very
18 often, so bear with me if I kind of get
19 lost in it.
20 So we need to consider options that
21 benefit our whole community. We're
22 experiencing a strong interest in
23 recreation. That is a growing -- growing
24 economic boom in our area. We have a lot
25 of kayaking companies popping up, fishing,

1 tourism, all kinds of stuff that's kind of
2 coming up in our area. We need to consider
3 that. Safe non-motorist boat passage is
4 part of that, so kayakers who would like to
5 maybe go down the full length of the river
6 from maybe up, you know, above Savannah
7 Rapids Pavilion or in there, all the way
8 down past the locks, if they want to, you
9 should be able to do that, and I think that
10 that's something that we can work into,
11 whatever option we decide.
12 I do want to touch up on, as an
13 ecologist, we have to do the fish passage
14 by law, but it's not just one species we're
15 talking about. Sturgeon is the poster
16 child for this. We have dozens more -- or
17 more of fish species to consider, bass,
18 mullet. We used to have a thriving shad
19 commercial fishery on our Savannah River
20 before we started damming it up. If you
21 guys haven't thought of that, that's
22 something we need to consider.
23 We want to push for a fish passage,
24 pool level maintenance, safe boat passage,
25 fishing access, park improvement at the

1 Lock and Dam park, maybe even whitewater.
2 These are all things that would benefit our
3 community. So I just want to make sure
4 that everyone considers all the options.

5 We don't have to settle for those two. We
6 can come together; okay? Thank you.

7 MS. SANCKEN: Thank you. I'm not
8 very good at public speaking, but I thank
9 Rick Allen, I thank South Carolina, Mayor,
10 I thank you all for our representatives. I
11 do not live on the river today. I used to
12 live on the river. I am at the River Club.

13 UNKNOWN SPEAKER: Name and address.

14 MS. SANCKEN: Joyce A. Sancken. 373
15 East Shoreline Drive.

16 This river, to keep it as high as it
17 is, is so important. We don't -- I don't
18 really care about these fish; okay? Fish
19 is one thing. People, their livelihood,
20 you know, their lives, they -- they've
21 worked all their lives to be and to own
22 this property and I don't agree with the
23 riverkeepers. Thank you.

24 MS. HANNER: Hello, I'm Susan Hanner.
25 I live at 1315 Waters Edge Drive. I do

1 live on the river, and as we were
2 discussing the drawdown with the
3 Savannah -- well, I guess he's really the
4 Corps of Engineers Representative, he gave
5 us the information that they took the boat
6 and they measured at each one of these
7 docks, and at our dock, it was 2 feet lower
8 than what they had said. Exactly what fell
9 into their plan. However, we were 6 feet
10 of dry land before we got to our dock, only
11 because we have a long catwalk.

12 So I don't feel comfortable with the
13 measurements that they've given us, but
14 regardless, if it's going to happen, it's
15 going to happen. I'll do everything I can
16 to keep it from happening.

17 The things that I think that are most
18 important is that the tourism in Augusta
19 will be significantly impacted by a
20 riverwalk that does not have an adjacent
21 river.

22 The other -- the other areas that I
23 think are important is the health issues
24 with pest control. If you take the water
25 away, we're going to have nothing but

1 mosquitos.

2 And recreation, regardless of what
3 you say, we try to put everybody in this
4 much water instead of this much water, it's
5 going to -- it will diminish.

6 I do believe that we can repair the
7 locks for navigation, not just for people
8 who live on the river, but also for people
9 maybe in Savannah, people want to come up
10 this way. I think it would be a good idea
11 to have the locks repaired and the dam
12 rehabilitated. Thank you.

13 MR. HANNER: Hi, I'm Alfred Hanner.
14 I too live at 1315 Waters Edge Drive in
15 Augusta. And for me, it's a question of
16 what's right. What solution allows
17 everything to happen?

18 With option 2-6, how does the Corps
19 of Engineers believe that the same level of
20 recreation and economic activity will be
21 maintained with almost no water running
22 down the middle of the Savannah, with
23 substantial number of docks sitting on the
24 ground, with no room to pass boats going
25 through the navigable channels.

1 The pool level is critical, critical
2 for the economic viability of downtown
3 areas, both North Augusta and Augusta, as
4 well as for the entire CSRA. River
5 activities such as the Rowing Regattas, the
6 Ironmen bring in millions of dollars into
7 our economic sear. Thus, the solution to
8 maintain the current pool is critical.
9 It's just common sense to keep the economic
10 development viable within our region.

11 Option 1.1 may be slightly more
12 expensive to build, and a big portion of
13 the cost is the O&M cost long term, so
14 we'll have to cover those later on in life.
15 But how can we trust the assessments of the
16 Corps of Engineers when they say they're
17 going to draw the river down and it's not
18 going to affect anything and those of us
19 who saw the river go, so this is nothing.
20 It was an unmitigated disaster, with
21 extensive property damage, recreational
22 damage.

23 So the question I ask is, what is the
24 solution that allows the deepening of the
25 Savannah Harbor, which is a viable economic

1 need, and maintaining our economic
2 development within the region of Augusta
3 and the CSRA? There has to be a solution.
4 Both are viable, both are critical, and
5 both need to be addressed. Thank you.
6 MR. SYMMS: Hello. Andrew Symms,
7 Andrew Fitz-Symms, Augusta, Georgia. Born
8 and raised in National Hills. Currently
9 reside at 1128 Magnolia Drive.
10 I live, train, and fish in the
11 Savannah River. I was a Marine from 1990
12 to '98. I became an Ironman last year.
13 And I'll tell you this, I had no idea --
14 and I'm ashamed of this fact. Born and
15 raised in National Hills right across the
16 street from the Augusta National, of
17 course, I am very much aware of what our
18 number one economic impact is, the first
19 full week in April.
20 The second largest impact to the CSRA
21 is Augusta Half Ironman, last year at an
22 estimated \$4.8 million. I do not believe
23 that Ironman will sign another contract. I
24 believe we have two more years on the
25 contract. 2000 -- 2020, they -- they're

1 gone.
2 And Parin, to address your -- your
3 level comment, the WIIN Act does actually
4 state in black and white that the pool will
5 be maintained at the level that the WIIN
6 Act was signed into law, December 16th,
7 2016. It does. It actually does. It
8 actually does.
9 (Comments from the audience.)
10 MR. CAMPBELL: Ladies and gentlemen,
11 if you can focus your comments to the
12 public, not to each other; okay? Thank
13 you.
14 MR. SYMMS: And I'd like to end in --
15 in this. We, in years past and growing up
16 here in Augusta, we -- unfortunately, I
17 believe we were two separate communities.
18 We were Augusta, North Augusta, Georgia,
19 South Carolina.
20 I've got many friends and many family
21 members that live across the river, and I
22 am so very, very proud of the two
23 communities and the fact that we have
24 come -- been able to come together in our
25 two governments, and I am very, very

1 pleased, and I thank y'all very, very much.
2 MR. GREENBAUM: Ladies and gentlemen,
3 elected officials, I too must praise the
4 governments of North Augusta and Augusta
5 for coming together --
6 MR. CAMPBELL: Sir, can you give your
7 name and address, please?
8 MR. GREENBAUM: Oh, I'm sorry.
9 Lowell Greenbaum, 1343 Waters Edge Drive.
10 Gloria and I have been involved in
11 this situation way back since 2000. At
12 that time, we also were threatened by the
13 Corps of Engineers, and Gloria and I
14 organized SOS, Save Our Savannah. We had
15 people from both South Carolina -- over a
16 hundred people together from South Carolina
17 and from Augusta.
18 Gloria and I went to Washington and
19 spoke with Charlie Norwood at the time and
20 the current senator from South Carolina.
21 They were impressed, especially when we
22 held up the hundred people who had signed
23 on the SOS petition.
24 They went to President Clinton, who
25 approved it, and it was sent to Congress,

1 where it died. Appropriation was not
2 submitted to the Congress for the fix of
3 the Lock and Dam.
4 So what is very important is the
5 legislation and our legislators, who we saw
6 here today together, and who must pound on
7 the -- on the rostrum that they have to get
8 funds to fix the Lock and Dam from the
9 Congress. Thank you.
10 MR. GARDINER: Good evening, ladies
11 and gentlemen. My name is Thomas Gardiner,
12 2837 Tobacco Road.
13 Now, I moved to Augusta whenever I
14 was stationed here with the United States
15 Marine Corps at Fort Gordon, and I stayed
16 here. I'm not a South Carolina or an
17 Augusta native, but I stayed here. I lived
18 in South Carolina for a number of years and
19 I moved across here. And I would like to
20 address a couple of things first.
21 Our economic viability is something
22 that keeps coming up. And we mentioned --
23 we heard mentioned earlier something about
24 the -- the Ironman, the Half Ironman that
25 comes here; right? So whenever that

1 drawdown happened, it didn't affect
2 actually any of the channels that they use.
3 Didn't affect any of them.

4 Our economic viability for folks and
5 any of our businesses along the river, they
6 don't depend on the few docks that happen
7 to be dropped down; right? Our economic
8 viability is so much more than that. It is
9 so much more than that.

10 There are options on the table other
11 than 1.1 that could help boost our economic
12 viability. It could help bring tourism and
13 help bring other dollars into the state
14 from other regions and other places all the
15 way around.

16 Now, the Army Corps of Engineers, who
17 many of you don't like, and I hate to be
18 the bearer of bad news for many of you, but
19 they posted on a post on their website this
20 week that 1.1 was no longer a viable option
21 for them. Was no longer a viable option.

22 So all of these arguments about 1.1
23 are really just blowing against the wind.
24 That is out. We need to take a look at
25 some of these other options that are on the

1 table.

2 Now, this started as a conversation
3 about whether we could start and have a
4 fish passage for endangered species. And
5 I've heard several people say they don't
6 care about fish. You don't care about some
7 fish. Well, guess what, we eat fish. We
8 need wildlife to live. We need those
9 things to sustain our own viability.

10 And if we don't do what we need to do
11 to protect what we have and what our
12 resources are, then how are we going to
13 survive and sustain ourselves; right?
14 That's -- that's a big part of it.

15 So some people here are fighting for
16 1930's technology that is designed to serve
17 1930's purposes. This community is growing
18 and it is getting younger and we are
19 bringing people here for cyber and for
20 other issues that are 21st century issues,
21 and it's time that we take a look at other
22 options and that we develop technology and
23 take advantage of the river for 21st
24 century purposes, not 1930's purposes.
25 Thank you.

1 MR. LASHER: Good evening. Thank you
2 for taking the time to hear me. I --

3 UNKNOWN SPEAKER: Name -- name and
4 address, please.

5 MR. LASHER: My name is Lawrence
6 Lasher. I'm at 746 Riverfront Drive, which
7 is Goodale Landing, which isn't on the
8 river. You've probably heard of it. And,
9 also, I am a member of the Augusta Rowing
10 Club, have been for years, so I have some
11 interest in the river.

12 Before I start, I do just want to say
13 one thing. You know, we heard about Save
14 Our Savannah. Thought that was -- I didn't
15 know about that, but almost 30 years ago,
16 there was another saying. Anybody
17 recognize that? Archibald Butt, 15th
18 Street Bridge? Well, this is ours now,
19 Raise Our River or Save Our Savannah.

20 We need to get behind our
21 legislators, our people in office that
22 can -- that can help push this forward.
23 And we, as citizens, need to -- need to be
24 involved in this.

25 I called -- is it Lauren; right?

1 She's in D.C. I called Allen's office.
2 And she listened to me for probably 30
3 minutes rambling on about different things.
4 She said it's important for us to call our
5 constituents -- I mean, the people that
6 represent us, so...

7 So I had a little something here
8 written up and it says -- it says, in our
9 previous meeting with the U.S. Corps of
10 Engineers, I talked with Colonel Daniel
11 Hibner and his related managers, engineers,
12 and specialists, and it was related to me
13 that the only way they would switch from
14 the rock weir to the dam, with a fish
15 passage, would be if there is a significant
16 human impact from the weir due to an effect
17 from one or more of the following effects
18 on the environment.

19 So, in other words, the only way
20 they're going to switch from the weir to --
21 to what we want, where we can raise our
22 water pool level, was some -- an effect on
23 the human environment, and he listed the
24 water supply, he listed the navigation, he
25 listed recreation.

1 And just me personally being involved
2 with the Augusta Rowing Association, we
3 hold the -- you know, they mentioned about
4 the triathlon. Well, ours, I think,
5 generates the fourth most amount. It's an
6 event here. We have a regatta, and that
7 comes once a year.

8 The -- if we have this drawdown, it's
9 going to narrow the passage to where if --
10 we won't be able to sufficiently or safely
11 have our regatta. We would probably have
12 to move it down river where it is wider,
13 but then the people that come to see it,
14 over thousands of people come to see it,
15 they -- they wouldn't be able to observe
16 it, so there -- that would be not adequate.

17 There's other recreation impacts,
18 kayaking along the Savannah River, the
19 powerboat races. We mentioned the
20 triathlon. These are one of those three
21 things, recreation, that are being
22 affected, and I wanted to submit that to be
23 submitted to the Corps. Thank you.

24 MAYOR DAVIS: All right. I'm going
25 to ask, before that individual comes, I

1 have a very good friend in the room, our
2 representative from across the river,
3 Representative Bill Hixon, I want to ask
4 him to come and give some comments.

5 MR. HIXON: Thank y'all. Yeah, I am
6 Bill Hixon. I have House District 83 in
7 Edgefield and Aiken County. I represent
8 all of North Augusta.

9 That was my proviso that I put in the
10 South Carolina budget, along with the rest
11 of the Aiken County delegation. I can tell
12 you, South Carolina, I'm proud of them,
13 what we're trying to do over there. We
14 have some other ideas that I will let you
15 know later, but we have some other ideas
16 that we're working on.

17 I'm proud of North Augusta and I'm
18 proud of Augusta, and it's been said
19 before, I think this is one of the greatest
20 times we had to work together, with North
21 Augusta and Augusta. And I'm proud of you,
22 Mayor Hardy and Mayor Pettit, and all of
23 the people in Aiken County and Edgefield
24 County and Richmond County and Columbia
25 County, what we're trying to do.

1 My main goal is to keep South
2 Carolina's riverfront, not South Carolina's
3 creek front, and I want to keep Augusta's
4 riverfront, not Augusta's creek front. So
5 we have some more stuff that we'll be doing
6 in South Carolina. I'm not at liberty to
7 say, but our Attorney General and our
8 Governor is dead on it.

9 And we have a meeting tomorrow with
10 some high-powered folks coming from
11 Washington, and so we will be -- we're
12 working on it in South Carolina.

13 And, Georgia, I appreciate what y'all
14 are doing, too. And thank you very much.
15 Thanks.

16 MR. BRAUN: My name is Erich Braun.
17 I live at One 7th Street, Unit Number 1203,
18 which is the pink building, as everybody
19 refers to it. My wife and I have been
20 there two years. Prior to that, we lived
21 at Waters Edge for 12 years. We're
22 transplants from Florida. We've been here
23 a total of 15 years, and I've never ever
24 had such a desire to get involved as I have
25 after hearing and reading and conflicting

1 and not knowing who to believe, what to
2 believe, looking at convenient numbers that
3 I -- I just can't trust.

4 And I'd really like to ask our
5 officials if they could get grassroots with
6 us and tell us what we can do. Can we
7 write, can we email? Sure we can. But I
8 would ask everybody in here, who has
9 emailed or written on this subject to
10 somebody in our elected officials?

11 Great. I've gotta tell you, I
12 haven't yet, but this motivates me to think
13 that we really can make a difference. And
14 guys, we thank you very much. Just lead us
15 and tell us what we need to do.

16 MR. ARNOLD: Hello. My name is Steve
17 Arnold. I live 316 Cherokee Drive, North
18 Augusta. I don't have property on the
19 river, but I do own property, I'm a
20 taxpayer, so I have an interest in it.

21 Many of y'all enjoy the river, just
22 being on the surface, fishing, swimming.
23 Mine's a little different. I'm on the
24 Richmond County Dive Team. I SCUBA dive on
25 the river for over 20 years now. I'm the

1 one that's at the bottom of the river
2 waving at y'all when you pass by. It's not
3 an alligator, it's me.

4 I get called out there to help out
5 with a lot of different things, the Ironman
6 race, the Rowing Regatta. Quite frankly,
7 I'll be very blunt, I don't give a damn
8 about the stupid fish. There's a lot of
9 others out there.

10 Also, too, whatever we need to do,
11 the river needs to stay at its full pool.
12 Yeah, the -- if we lower the river, the
13 Ironman course will still be the same, but
14 the support boats that are out there for
15 safety and security, they won't be able to
16 get out there. And this is not just a
17 little race, this is the second largest
18 Ironman race in the world, and every year,
19 it gets bigger because it's that good.

20 Same with the Rowing Regatta. The
21 passage will be smaller, so the boats that
22 are out there, like mine, for safety and
23 backup, we won't be able to get out there.
24 It'll be a narrow pool. And that's going
25 to be more millions lost every year.

1 Thing is, though, I'm at the bottom
2 of this river. I go out there
3 recreationally. I look for stuff people
4 have lost. We go digging for old bottles
5 and things, and there's a lot of things in
6 that river that y'all don't know about that
7 if we lower it down, it's going to make the
8 river even more impassable.

9 Now, something else, too. There's
10 several boat ramps out there. There's a
11 boat ramp at 5th Street Marina, Riverfront
12 Drive, the warehouse facility, Waters Edge,
13 North Augusta. Practically every boat ramp
14 is going to be unusable; okay? They're
15 going to have to be extended. Who do you
16 think's going to foot bill for that? You
17 know it's not going to be the Corps.
18 That's going to fall on taxpayers, both in
19 Georgia and Carolina.

20 Now, along with that -- excuse me --
21 when they lowered the river back in 2000,
22 it damaged the wall at Water -- at Goodale
23 Landing. At that point, the Corps said,
24 well, we gave people ample opportunity to
25 move any property that was going to be

1 damaged. Someone asked the Corps, said,
2 how are you going to move the jetty wall?
3 They said, that's your problem, not ours.

4 This last time when they lowered it,
5 they said the wall was not properly
6 designed, which is why it was damaged. I
7 can promise you any property that is
8 damaged, destroyed, or left unusable, the
9 Corps will find an excuse to not pay for
10 it. It's going to fall on everybody else.

11 So whatever we need to do, that river
12 needs to stay at the level it is. Thank
13 y'all.

14 MR. PENIX: David Penix, 724 Greene
15 Street, Apartment 1415 in the downtown.
16 I'm a Clemson graduate. I have 12 courses
17 completed to get me a designation in
18 commercial marketing, commercial real
19 estate. I come to you from that
20 perspective.

21 The annual visitor's and convention's
22 income for the year for Augusta is
23 something like \$400 million. Folks, you're
24 going to negatively impact that if you
25 don't keep the Lock and Dam. Homes --

1 homes on the river from 5th Street up to
2 the rock where you can walk across the
3 river, I'd estimate over \$100 million.
4 That's a lot of power. Maybe another 50
5 million on the -- on the Georgia side, same
6 distance. That gives it a lot of power.
7 Those people are not going to give up on
8 the river level.

9 The present Lock and Dam, you know,
10 we used to put boats in the -- in the locks
11 and lower the level and let them out the
12 bottom level. Why can't we leave the
13 bottom level docks open and set up a
14 program to attract the fish and take the
15 water level up and let them go at the
16 higher level? Save 25-, \$30 million on
17 a -- on a rock passage, period.

18 But that is a program to let the fish
19 come upstream. And an ongoing program
20 could be maintained continually to justify
21 getting rid of the -- or to justify the
22 rock weir.

23 Maybe \$150 million a year, recreation
24 use and what have you and -- and associated
25 with -- with the use of the river and its

1 attachments or its relationship to the
2 annual visitation, parts of that 400
3 million.
4 That's it, folks. I just -- I come
5 at it from a commercial market standpoint,
6 and money is very important to us, and that
7 river level up where it should be, a
8 hundred -- it's a hundred -- it's 16 feet
9 now. I went by and looked at it a little
10 while ago. Is a main item in that equation
11 of success and continued economic viability
12 for Augusta.
13 MR. WILLIFORD: Hey, y'all. I'm Josh
14 Williford. I live in -- I live at 65
15 Century Circle, Greenville, South Carolina,
16 and I've been following this for quite a
17 while as well. I'm a river user, I'm a
18 kayaker, fisherman, river guide up on the
19 Chattooga.
20 And, initially, when I heard about
21 all this, tell you the truth, I didn't care
22 much about it. I'm not a big fan of dams.
23 I actually studied them quite a bit,
24 hydrology, environmental science, that type
25 of stuff. But the more I learned about how

1 it affected people around here and how much
2 y'all care about it, I started reading more
3 about this specific structure, and I
4 definitely support the rock weir, although
5 I think that there's definitely ways to
6 make it taller so that the level could be
7 raised.
8 Like, if you look at certain
9 hydroelectric structures, they've got
10 sluiceways, where big flood comes, you can
11 let it out the gates through the bottom or
12 through the sides around the dam. So the
13 rock weir doesn't have to be several feet
14 lower to accommodate big floods. It could
15 still be at the same -- relatively the same
16 height and allow more flows to come
17 through, because, believe me, I think some
18 of y'all know the river does flood.
19 And if you study dam failures from
20 the past, pretty much all of them happen
21 because of situations where people did
22 nothing, and that was driven by greed or a
23 lack of interest, and environmentalism
24 wasn't even a part of that conversation.
25 So I definitely support fish passage.

1 The reason why you don't see them is 'cause
2 they're in danger, and we do depend on
3 them, even if we don't all know why.
4 So I support a compromise. I support
5 the City working with the Corps and
6 figuring out a way that they can make a
7 taller rock weir so that everybody can be
8 happy and move on, right, 'cause this thing
9 is definitely a bullet train headed for
10 your town. And the City is going to lose
11 money either way. Whether you do plan one
12 or plan two, it's going to lose money, but
13 at the very least, you can salvage
14 what's -- what's salvageable and do the
15 right thing. Thank you.
16 MR. STEPHENS: My name's Bucky
17 Stephens. I live at 820 Riverfront Drive.
18 Thank you, gentlemen.
19 I don't know if anybody saw what
20 actually happened when the drawdown just
21 happened. It looks like we had earthquakes
22 around our seawall. I don't think anybody
23 put that on TV. Channel 12 did.
24 But we need people to pay attention
25 to what property's being damaged, and

1 that's some serious accolades there. I
2 mean, the seawall, it was given to us, but
3 now it's hanging out 3 feet. The Corps'
4 not going to come back and fix it. What's
5 going to happen?
6 There's some serious property damage.
7 I don't believe there's been fish up the
8 river since '37, has it? I think they
9 survived quite well since then, hadn't
10 they? Thank you.
11 MR. JIMENEZ: Hello. My name is
12 Jorge Jimenez. I own 435 Telfair Street in
13 Augusta. I've been here 55 years.
14 I'm concerned about a lot of the same
15 things you're concerned, and I don't want
16 to repeat what everybody else has said, but
17 at the meeting that the Corps had, they let
18 us know that the only way that the Corps
19 could proceed meant that they were -- I
20 mean, they are obliged to choose the
21 alternative with the highest probability of
22 meeting the goal of passing the sturgeon
23 species above New Savannah Lock and Dam.
24 That is the purpose, the only purpose,
25 really, that counts.

1 Now, I -- I have some background in
2 this stuff. Since 1978, I've been working
3 in the Augusta area in the Savannah River
4 being the FERC liaison for Augusta in their
5 pursuit of a license, working in the canal,
6 and we have to do the in-stream fish. IFIM
7 is the initials. And we know that if the
8 fish come up, then they'll have a place to
9 spawn, if the surgeon come up.

10 The question, though, is, how do you
11 get that done? And the only real way to do
12 it is to get rid of the dam altogether.
13 They've been after that for 20 some years.

14 Unfortunately, that causes a lot of pain.

15 Now, it would seem that a solution
16 with the highest probability -- one minute?

17 MR. CAMPBELL: Yes, sir.

18 MR. JIMENEZ: Oh, man, that's bad.

19 A solution should necessarily have
20 succeeded somewhere. Their solution hasn't
21 succeeded anywhere. Zero fish have passed
22 that rock dam at Cape Fear. Even the
23 striped bass won't pass it. You know they
24 move pretty good, so -- and then the only
25 other thing I have to say is this, but I

1 know I'm out of time, but, you know, I'm
2 Cuban. I don't understand how the
3 Riverkeeper got standing to file a suit
4 against the Georgia Ports Authority and
5 Augusta doesn't have standing to file a
6 suit against the Corps of Engineers.

7 MR. NIXON: Well, I'm a returnee to
8 Richmond County. I've been gone for 50
9 years in -- in that city called Atlanta
10 for 46. My name's Hudson Nixon. I live at
11 2349 Williams Street in Augusta and a proud
12 member of the community since the end of
13 October.

14 And Mayor Davis, I -- and Mayor
15 Pettit, I'd like to thank y'all for your
16 interest in helping save the Lock and Dam.

17 I'm a financial person by background,
18 and I looked at the -- I've been told, for
19 all the family members that are interested
20 in what's going on here today, that the
21 estimates have sort of gone all over the
22 board for repairing the dam -- I mean,
23 the -- well, the Lock and Dam and possibly
24 making a fish ladder out of part of it.
25 And I recall something like a \$60 million

1 number and now I see a \$380 million number.

2 Mayor, when was this building that
3 we're in right now built, around late '50s,
4 early '60s?

5 MAYOR DAVIS: Around '68.

6 MR. NIXON: Did they -- when they
7 budgeted to build this building, did they
8 allocate the money, you think, for how much
9 was spent on redoing this building
10 recently? About 70?

11 MAYOR DAVIS: No. About 32.

12 MR. NIXON: 32? Okay.

13 Back in 1960, if you'd put \$32
14 million on the game plan for, what, 60
15 years, you wouldn't have built this
16 building. So I don't know where the
17 rationale is coming from.

18 I have heard a lot of people talk
19 about recreation, aesthetics, and so forth.
20 The one thing -- and I understand you can't
21 just have the government pay for repair and
22 replacement of things. You can do it for
23 the fish, but you can't do it for the
24 people.

25 And you -- you also -- but if

1 something that is for the people is
2 supposedly -- well, what about a flood?
3 And just 'cause we have Clark Hill doesn't
4 mean you can -- what about the development
5 of the waterfront of -- oh, both sides of
6 the river.

7 Anyway, I just -- I'm a concerned
8 citizen and I just wanted to say my peace.
9 Thank you.

10 MR. SCHAEFER: Thank you, Mayor
11 Davis, for this opportunity. Good evening,
12 everybody. I'm Keith Schaefer. I live at
13 712 Riverfront Drive. I represent 48
14 owners and the board of directors of the
15 Goodale Landing Homeowners Association. We
16 have personal experience with the Corps, as
17 is in our pocketbooks.

18 We have owners that have had to spend
19 upwards of \$10,000 on their homes to have
20 the cracks that were done from the last
21 drawdown repaired. Some of them still
22 haven't been repaired.

23 We object to everything the Corps is
24 doing with this. They don't want the Lock
25 and Dam. That's been very clear. We'd

1 like it replaced or rebuilt. We'd like the
2 lock working. We'd like a fish lift or a
3 fish ladder. They can make all this happen
4 if they choose to, but they chose not to
5 because they don't like the Lock and Dam.
6 They don't want to be bothered by it.
7 We'd like it because they can use it
8 for flood control. They've admitted they
9 use it for flood control now. Their rock
10 pile that they want to put across the river
11 does not provide for flood control. It
12 also takes a huge section of the New
13 Savannah Bluff Lock and Dam park, which is
14 a beautiful park, needs to be improved.
15 We're in favor of maximizing the City
16 of Augusta's opportunity at the Lock and
17 Dam, whether it's rebuilt, replaced, but we
18 need flood control, we need fish migration,
19 and there are lots of ways. The Corps is
20 aware of them. They've only chosen one.
21 There are many more other than that. We
22 are hopeful that we could have power
23 generation from that dam. It's set up
24 right now for power generation.
25 The Corps has in their plans

1 apparently, as the last speaker said, added
2 the cost of replacing the dam in 50 years
3 to their figures. Well, if that's true,
4 I'm very nervous about Thurmond. I mean,
5 that's coming up on 50 now. Are they going
6 to replace that? So if it's not good for
7 50 years, we're in kind of a problem with
8 the Corps.
9 So Goodale Landing owners who have
10 had to personally pay for the Corps'
11 irresponsible drawdown of the river back 15
12 years ago, we don't want to see it happen
13 again. We want the pool raised, and we'd
14 like the Corps to do what this community
15 would like to see done, which is maximize
16 our beautiful riverfront. Thank you very
17 much.
18 MR. GRIFFIN: I'm Griff Griffin. I
19 live it Riverwood Manor on Greene Street.
20 I'm your former National Guard Combat
21 Engineer Nominee of the Year. I'm your
22 current crime stopper who set a record of
23 lowering crime from 2010 to 2015. I
24 recommend you conveying grand juries to
25 look into this matter because of all the

1 tax money that is being used that looks
2 very much like a bribe.
3 I sit on the river all the time, and
4 we have seen seismic activity break out
5 each time we dropped our river. The last
6 time we dropped our river, a fire truck
7 fell into a sinkhole, a Harley fell into a
8 sinkhole, a lady in a car fell into a
9 sinkhole. You're going to suffer sinkholes
10 all through your city. Some of your
11 building foundations are going to split.
12 You are going to have chasms open all over
13 your city.
14 Right now, you have a water table.
15 If you want to see your work table, go to
16 the river, look at the river. That's your
17 water table. That water table goes out in
18 a straight line -- right, Tom -- all the
19 way from here to Hephzibah, all the way up
20 through the region, everywhere.
21 When we drop our water table, we drop
22 the hydraulic supports that are in the
23 chambers below the ground, and those
24 chambers will fall in again.
25 We can use locks right now. For 80

1 years, the locks have passed all of the
2 up-river migratory fish that I'm aware of.
3 And the Coast Guard, other people have
4 studied these migratory fish, and they have
5 been documented as coming through the Lock
6 and Dam.
7 Let's use the Lock and Dam. There's
8 a washout down river in a down river wall.
9 You give me my National Guard unit back
10 with my equipment and I'll have you fixed
11 up so fast your head will swim.
12 I'm a National Guard combat engineer
13 and I'm here to make it happen; okay? Use
14 the locks. The fish will spawn. SHEP will
15 finish. Bring billions many years earlier,
16 this is a no-brainer. Thank you for your
17 time.
18 MS. WILHELMI: My name is Marcie
19 Wilhelmi and I live at 2928 Bransford Road
20 in Augusta, nowhere near the river. My
21 perspective is as so many others are here
22 different than others. I have worked on
23 economic development, different projects
24 around our city for four decades. I can
25 assure you everything was focused around

1 our river.
2 And so we now have two amphitheatres
3 between two cities. We have two states
4 working together. What a novel idea. And
5 while I'm not as up on the particulars, I
6 happen -- I know Mr. Robertson leading the
7 charge will do a fine job, Mr. Wiedmeier
8 and all the others involved.

9 I think I agree with the speaker that
10 said first order of business is call and
11 call and call and call, two state senators,
12 your local representatives, both sides of
13 the river, the two mayors, and anybody else
14 you can think of. It's worth an hour and a
15 half of your lifespan, because we have got
16 hundreds of millions of dollars, and future
17 generations just discovering this river for
18 the first time.

19 It is a crime to think we have a
20 bunch of bureaucrats and not unforeseen
21 fish knocking us out of the saddle.
22 Clearly, Washington has lost their damn
23 mind. And the day when bureaucrats can't
24 listen to Congressman, the only way that's
25 ever going to change is if people will get

1 serious about it, start blasting them out
2 of their socks.

3 It's worked before. I remember when
4 Doug Barnard went to have the locks -- the
5 pieces in the levy so that we could develop
6 Riverwalk. That's 40 years ago, 35 for
7 sure. But it took a hell of a lot of
8 people hammering on them.

9 And so for all of you sitting here,
10 for all future generations, if you give a
11 damn about kids, you want to keep them
12 home, if we want to see everything this
13 community is pouring into cyber, we need to
14 preserve our river. So everybody, knock
15 them dead.

16 MR. CAMPBELL: Ladies and gentlemen,
17 the sign-up list is now closed. Next will
18 be Stephen Schroeder.

19 MS. BALL: Hello, everyone. Thank
20 you for your time today. Representatives,
21 thank you both so much for your time.
22 My name is Melinda Ball and I live at 165
23 River North Drive.

24 My reason for coming tonight is
25 because I am concerned about our river and

1 we need to save our river park -- river
2 pool. My concern is for my family sitting
3 right over there, my daughter Melanie and
4 my husband Landon Ball.

5 Melanie is my reason for being here.
6 I'm concerned for her and for her future.
7 And for her future, we need to have a
8 river, we need to have a river pool,
9 because our cities depend on it.

10 I am a meteorologist. I can predict
11 the weather. We cannot make the weather,
12 but I can tell you that if we put this rock
13 weir in, we are not going to have any way
14 of controlling our river level.

15 I have sat and watched it pour down
16 rain, and I have sat and watched that river
17 rise because of all the -- more rainfall
18 that has fall across the -- fallen, excuse
19 me, across the region, and we need some way
20 of controlling our floodplain and
21 controlling our river levels. And that is
22 one of the reasons why we have a dam there
23 in the first place.

24 So damn those damn fish. Forget the
25 fish. God put us humans at the top of the

1 food chain for a reason, and there is no
2 reason why we should put the fish above our
3 needs. Thank you very much.

4 MR. CAMPBELL: We have two more names
5 remaining.

6 MR. SCHROEDER: Good evening. My
7 name's Steve Schroeder. I live at 75
8 Alberclaus Drive right there on the river.
9 So I just recently moved down to the river
10 and one of the reasons, 'cause it's very
11 beautiful.

12 And there's several comments that
13 have been said, and I'm trying not to
14 repeat any of them, but, you know, even if
15 the Corps of Engineers decides to
16 compensate for damages or for lost property
17 value, let's just say they do, who cares?
18 We want to live down on the river and we
19 come there for the view, not to see a
20 stream; okay?

21 And the gentleman right there, I do
22 not understand why they just can't raise
23 the elevation of this new damn. Why does
24 it have to drop the water? And on top of
25 that, property value. Property value will

1 drop. And what does that mean? Tax base
2 goes down. There will be less taxes going
3 into Augusta, less taxes going in North
4 Augusta. And we have to look at that cost;
5 okay? It goes beyond just all the damages
6 and everything else.

7 Flood control, I mean, what do we do
8 for flood control then? It's kind of like
9 when you get the economy going and you --
10 and keep on dropping the -- the interest
11 rates, you can only drop them so far. And
12 if that economy crashes on you, then you
13 have nothing to do. So that's the same
14 thing with this new dam proposal.

15 And then the last thing is is the
16 website with the Corps of Engineers. I
17 read that plan. A third grader could have
18 came up with a better plan than that. It's
19 like, here's a Google map, here's the
20 old -- the current dam, and we're going to
21 put a new dam there.

22 They have no detail what it looks
23 like, what the flow is going to be. I am
24 completely clueless of what they're going
25 to do. And if they didn't -- if they were

1 more upfront and more clear what they want
2 to do, I think there would be a little bit
3 less resistance, maybe a little bit more
4 input from the public, but they've kind of
5 done it to themselves. Thank you.

6 MR. DONOHUE: I'm Steve Donohue. I
7 live at 316 East Shoreline Drive, North
8 Augusta. Excuse me. Thank you, Mayor
9 Davis, for putting this on.

10 Who's missing here? They're not
11 here. Almost feel like we're spinning our
12 wheels, although I appreciate what the
13 Mayor did.

14 Colonel Hibner, don't come back here
15 again unless you're willing to listen to
16 all of us. Don't come back.

17 In my prior life, I used to be a
18 lobbyist, I hate to admit it, and I know
19 how the sausage is made, so here's how the
20 fix went in. The Corps of Engineers for a
21 long time doesn't want that Bluff and Dam,
22 they don't want it, and they didn't want to
23 repair it, so they had an opportunity to
24 kill two birds with one stone.

25 They want to deepen the Savannah

1 Harbor. I got an idea. Let's justify it
2 on bringing the sturgeon up 180 miles back
3 to Augusta and we'll rip down the dam so we
4 can make a fish passage.

5 I want you to think about it. If you
6 were concerned about sturgeon -- I am, by
7 the way. I'm concerned about it. I guess
8 it's endangered. Would you make them swim
9 180 -- I don't care if they were here 80
10 years ago. By the way, most of them have
11 died. They don't remember where they were
12 born. Would you bring them 180 miles,
13 alligators, birds of prey, and all the
14 other things, looking for the rope?

15 You know, think about it, being a
16 male sturgeon. It's about time to spawn.
17 Hey, honey, you want to go 180 miles?
18 There's about 10 miles up the river and
19 would work pretty good for me.

20 Think about that. If you're
21 concerned about the sturgeon, put them at
22 less risk. Come up 10 miles, 15 miles.
23 That's A.

24 B, Augusta, Georgia, is the second
25 largest city in Georgia, and they're making

1 the deepening of the Savannah Harbor --
2 they're putting it on the backs of
3 everybody in this room and people in North
4 Augusta.

5 And I'm calling on Senator Isakson,
6 Senator Perdue, Lindsay Graham, Tim
7 Scott, Joe Wilson, who was here earlier.
8 The law got by y'all. Corps put the fix
9 in, 'cause now they say, that's what the
10 law requires. You know, the fix is in.

11 You know, how do you want to die?
12 You want poison, a noose, a gun? The
13 premise is, oh, do I have to die? So the
14 premise is wrong. They put it into the law
15 and now they stand before you and say,
16 that's what the law requires, that it all
17 happened right here.

18 It's wrong and the only thing they're
19 going to listen to is a lawsuit; okay? The
20 riverkeeper filed one, they settled it for
21 \$99 million, to oxygenate the harbor in
22 Savannah. \$99 million would've gone a long
23 way up here; okay? That money is probably
24 now exhausted.

25 The only thing they're going to

1 listen to is a lawsuit. You're going to
2 have to sue them for violating the National
3 Environmental Policy Act or something else.
4 They're not going to listen to anybody else
5 unless you file a lawsuit, like the
6 riverkeeper did. They got their 99
7 million. We should get ours. Thank you
8 very much.

9 MR. CAMPBELL: Ladies and gentlemen,
10 we'll have closing remarks by Ms. Janice
11 Jackson, our City Administrator.

12 MS. JACKSON: Just briefly, we just
13 want to thank everyone for coming out,
14 particularly those of you who have stayed
15 for the entire time to listen to the
16 comments of your neighbors. We also
17 appreciate, obviously, the opportunity to
18 exercise our right to free speech. So we
19 appreciate all of you being here.

20 There are a couple of next steps that
21 we want to make you aware of. First, we
22 have engaged a technical team comprised of
23 Tom Wiedmeier, our utilities director, who
24 you heard from earlier; Tom Robertson,
25 local engineer who you also heard from

1 earlier; as well as a firm that specializes
2 in water resources management. That team
3 will advise our elected officials in terms
4 of what the possibilities are for us in our
5 next steps. We expect to have their report
6 back on April 10th.

7 The end of the comment period, as was
8 referenced earlier, for the Corps of
9 Engineers is April 16th, so we'll have our
10 comments -- our technical team will have
11 comments prepared for submission during
12 that period as well.

13 With that, I think we are closing
14 out. If there's anything else you all
15 would like to say, we appreciate again
16 hearing from you, and we'll continue to try
17 to represent your interests as best we can.

18
19 [Meeting concluded at 7:00 p.m.]

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1 C E R T I F I C A T E

2
3 E OF GEORGIA:
4 TY OF RICHMOND:

5
6 I hereby certify that the foregoing
7 proceedings were taken down, as stated in
8 the caption, and reduced to typewriting under
9 my direction, and that the foregoing pages 1
10 through 86 represent a true, complete,
11 and correct transcript of said proceedings.

12 This, the 9th day of April, 2019.

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BRITTANY N. DRAPER, CCR, CVR

	abundance (1) 42:23	73:8	12,18,19;76:1;77:8;78:9, 10;79:17;81:5;82:16; 83:13;84:16;85:19;86:14	ample (1) 62:24
\$	access (1) 44:25	adoption (1) 28:1		An (32) 4:21;5:21;12:8,18; 14:5;21:14;22:17;23:14; 24:21;26:6,16;31:12; 35:4;38:23;42:23,24; 44:12;46:20;48:20;49:12, 21;52:16;56:16,22;57:5; 60:20;61:3;63:9;64:19; 77:14;82:23;83:1
\$10,000 (1) 72:19	accolades (1) 68:1	advantage (1) 54:23	Allen (6) 4:7;9:11;10:8,9;12:25; 45:9	
\$100 (1) 64:3	accommodate (1) 66:14	adverse (1) 21:14	Allen's (2) 32:13;56:1	
\$105 (1) 7:3	accompany (1) 19:5	advertised (1) 24:2	alligator (1) 61:3	
\$150 (1) 64:23	According (3) 10:25;36:18;37:9	advise (1) 86:3	alligators (1) 83:13	analysis (2) 21:16;22:6
\$275,000 (1) 30:10	account (1) 21:12	advocate (1) 25:16	allocate (1) 71:8	and (506) 2:7,8,9,12,15,23,25; 3:17;4:6,11,16,19;5:5,6, 13,13,20,22;6:1,9,17,18, 25;7:1,6,20,21,23;8:3,10, 13,16,18;9:2,3,5,8,10,12, 13,13,16,19,19,20,21,21, 23,24,25;10:1,5,6,9,10, 11,12,13,14,17;11:3,4,12; 12:1,3,11,15,17,18,22; 13:2,3,7,9,9,10,12,17,17, 19,22,23,24;14:7,9,12,13, 13,16,22,23,25;15:2,6,8, 11,17,18,20,23,25;16:5,7, 14,15,19,22;17:5,9,12,18, 21;18:4,8,15,15,16,17,20, 21;19:3,7,12,16,20,21; 20:3,7,7,21;21:13,20,23; 22:2,9,11,13,15,19,25; 23:1,4,9,11,12,15,15,23, 25;24:15,16,18,25;25:1,4, 10,15,16,19,24;26:7,21, 24;27:4,5,6,10,12,13,20; 28:4,5,10,13,15,17,20,22; 29:5,6,18;30:1,6,9,17,21; 31:7,9,25;32:3,3,10,13, 18;33:1,3,4,5,5,8,13,13, 14;34:1,1,4,5,9,17,19,20, 21,23;35:3,5,7,10,12,13, 19,23,25;36:4,6,11,12,18, 20,22,23;37:6,11,13,18, 22,23;38:1,6,11,18;39:9, 13,13,16,16,22,23;40:5, 13,14,20,21,22,25;41:6, 12;42:11,12,13,14,20,24; 43:2,4,8,15;44:9;45:1,13, 21,22;46:1,6,7;47:2,11, 15,20;48:3,12,17,18;49:1, 3,4,8,10,13,14,14;50:2,4, 10,14,15,20,21,23,25; 51:1,2,4,7,10,13,13,17,18, 18,19,25;52:3,5,6,8,11, 15,18,19,22;53:4,12,14, 17;54:3,4,10,11,13,18,18, 19,21,22,22;55:3,8,23; 56:2,8,11,12,12,23;57:1, 6,22;58:4,7,17,18,21,21, 22,22,23,24,24;59:3,7,9, 11,13,14,19,23,25,25; 60:1,4,6,13,15;61:15,16,
\$30 (1) 64:16	accurate (2) 38:14,24	advocated (1) 5:19	allow (5) 19:2;37:23;40:14,21; 66:16	
\$32 (1) 71:13	accurately (1) 31:11	advocating (2) 5:21;6:4	allowed (1) 30:1	
\$380 (2) 6:23;71:1	acknowledged (1) 20:9	aesthetic (1) 28:5	allows (2) 47:16;48:24	
\$4.8 (1) 49:22	across (9) 20:8;49:15;50:21; 52:19;58:2;64:2;73:10; 79:18,19	aesthetics (1) 71:19	almost (3) 47:21;55:15;82:11	
\$400 (1) 63:23	Act (19) 7:18;8:13;9:2;10:20, 21;11:13,20;24:14,17; 27:17,23;35:2;36:13; 38:13,15,24;50:3,6;85:3	affect (3) 48:18;53:1,3	along (10) 18:6;19:3;20:10;28:4, 7;29:7;53:5;57:18;58:10; 62:20	
\$45,000 (1) 6:14	activity (2) 28:22;48:5	affected (2) 57:22;66:1	already (3) 2:21;12:7;27:7	
\$60 (1) 70:25	activity (2) 47:20;75:4	after (4) 30:11,11;59:25;69:13	also (18) 2:24;3:19;4:2;10:12; 11:16;12:25;25:15;32:2; 34:14;40:21;47:8;51:12; 55:9;61:10;71:25;73:12; 85:16,25	
\$61 (1) 6:8	actually (9) 5:22;9:1;10:15;50:3,7, 8;53:2;65:23;67:20	afternoon (2) 25:2;29:4	alternatives (8) 4:25;6:3;7:17,24;8:5,6, 7,10	
\$8 (1) 30:11	add (1) 22:22	against (4) 40:7;53:23;70:4,6	Although (3) 35:17;66:4;82:12	
\$950,000 (1) 6:12	added (1) 74:1	age (2) 36:7;43:8	altogether (1) 69:12	
\$99 (2) 84:21,22	addition (2) 4:2;32:16	agencies (1) 17:1	am (15) 14:1;23:14,19;25:7; 32:25;45:12;49:17;50:22, 25;55:9;58:5;78:25; 79:10;81:23;83:6	
[additional (2) 12:8;35:4	ago (7) 9:19;27:5;55:15;65:10; 74:12;78:6;83:10	amazing (1) 12:18	
[Meeting (1) 86:19	address (10) 22:3,6;32:4,10,12; 45:13;50:2;51:7;52:20; 55:4	agree (2) 45:22;77:9	amends (1) 22:13	
A	addressed (1) 49:5	ahead (1) 16:10	amenities (1) 38:2	
able (8) 25:8;31:10;44:9;50:24; 57:10,15;61:15,23	addressing (1) 38:7	Aiken (17) 3:22,24;12:1;25:4,8,13; 26:12,19,22;27:9,20; 28:23;29:2;37:22;58:7, 11,23	AMIN (5) 38:3,4;41:15,20,23	
about (51) 5:8,9;7:23;9:6;15:4; 16:25;23:22;24:16,17; 26:7,23;30:10;33:9,17; 41:5;44:15;45:18;52:23; 53:22;54:3,6,6;55:13,15; 56:3;57:3;61:8;62:6; 65:20,22,25;66:2,3; 68:14;71:10,11,19;72:2, 4;74:4;78:1,11,25;83:5,6, 7,15,16,18,20,21	adequate (2) 28:20;57:16	Alberclaus (1) 80:8	amount (1) 57:5	
above (3) 44:6;68:23;80:2	adjacent (1) 46:20	Alfred (1) 47:13	amphitheaters (1) 77:2	
absent (1) 18:14	administration (1) 12:1	all (55) 2:2,13;3:1,4,24;4:9,24; 6:24;9:5;14:14;16:7,7; 17:10,11,23;21:10;23:16, 23;30:25;39:23;41:16; 44:1,7;45:2,4,10,21; 53:14,22;57:24;58:8,22; 65:21;66:20;67:3;70:19, 21;73:3;74:25;75:3,10,		
absolutely (1) 14:1	Administrator (1) 85:11			
	admit (1) 82:18			
	admitted (1) 14:1			

<p>18,22,24;62:5,5,19;63:21,25;64:9,11,11,13,14,15,19,24,24,24,25;65:6,6,9,11,16,20;66:1,3,16,19,22,23;67:2,5,8,10,14,25;68:4,15,23;69:6,7,11,24;70:4,11,14,14,16,18,23,23,25;71:1,19,20,21,25;72:3,8,14,25;73:5,13,16,19;74:13;75:3,23;76:3,4,6,7,10,13,19;77:2,4,8,10,11,11,13,14,16,20,23;78:9,16,22,25;79:3,6,7,15,16,16,19,20,21;80:1,10,12,13,18,21,24;81:1,4,6,9,10,11,15,20,25;82:1,18,21,22;83:3,13,18,25;84:3,5,15,15,18;85:9;86:16</p> <p>Andrew (2) 49:6,7</p> <p>annual (3) 6:11;63:21;65:2</p> <p>another (6) 10:6;40:2,4;49:23; 55:16;64:4</p> <p>any (19) 7:13;16:4,4;20:5;24:5; 27:23;28:2,14;29:25; 35:16;38:16,25;53:2,3,5; 62:25;63:7;79:13;80:14</p> <p>anybody (6) 12:20;55:16;67:19,22; 77:13;85:4</p> <p>anymore (1) 8:17</p> <p>anyone (4) 3:7;11:23;12:2;19:25</p> <p>anything (3) 33:9;48:18;86:14</p> <p>anyway (2) 42:10;72:7</p> <p>anywhere (2) 41:12;69:21</p> <p>Apartment (1) 63:15</p> <p>apparently (1) 74:1</p> <p>appreciate (7) 2:15,17;59:13;82:12; 85:17,19;86:15</p> <p>appropriate (1) 20:1</p> <p>Appropriation (1) 52:1</p> <p>approved (2) 11:17;51:25</p> <p>approximately (1) 26:2</p> <p>April (6) 12:9;14:25;16:3;49:19; 86:6,9</p> <p>Archibald (1)</p>	<p>55:17</p> <p>architecture (1) 37:13</p> <p>archival (1) 35:6</p> <p>are (66) 2:10,13;3:5,24;4:2; 5:20;7:15;8:6,7;9:6; 12:12,22;17:9,15;20:6; 22:23;23:1,1,2,17;25:1; 28:16;36:15,17;38:18,19; 40:1,41:8;43:6,8,9,13; 45:2;46:17,23;49:4,4; 53:10,23,25;54:12,12,15, 18,20;57:20,21;59:14; 61:14,22;63:2;64:7; 68:20;70:19;73:19,21,22; 74:5;75:11,12,22;76:21; 79:13;85:20;86:4,13</p> <p>area (8) 22:4;29:14;35:18;43:2, 4,24;44:2;69:3</p> <p>area's (1) 20:25</p> <p>areas (2) 46:22;48:3</p> <p>aren't (2) 39:25;41:4</p> <p>aren't (1) 41:4</p> <p>arguments (1) 53:22</p> <p>Armed (1) 13:2</p> <p>Army (11) 13:5,16;18:21;19:6,10; 21:25;37:15;38:11;39:7, 25;53:16</p> <p>ARNOLD (2) 60:16,17</p> <p>around (10) 4:16;30:20;53:15;66:1, 12;67:22;71:3,5;76:24,25</p> <p>arrived (2) 5:2;6:5</p> <p>artistic (1) 37:5</p> <p>as (59) 3:23,23;4:7;5:2,22,22; 11:7;14:2;16:24;18:5,25; 20:7,17,17,19;21:1; 22:20,22;23:19;29:24; 30:3,3;33:5,13,20;34:10, 10;35:7,7;37:12,12,14, 14;38:23;41:11;42:24; 43:7;44:12;45:16,16; 46:1;48:3,4,5;54:2;55:23; 59:18,24;65:17;72:16; 74:1;76:5,21;77:5;86:1,1, 7,12,17</p> <p>ashamed (1) 49:14</p> <p>Ashley (2)</p>	<p>42:17,19</p> <p>ask (6) 41:9;48:23;57:25;58:3; 60:4,8</p> <p>asked (2) 13:23;63:1</p> <p>asking (1) 21:20</p> <p>Assembly (1) 28:11</p> <p>assess (1) 35:18</p> <p>assessment (1) 35:4</p> <p>assessments (3) 35:8,10;48:15</p> <p>asset (1) 9:21</p> <p>assets (3) 2:15,16;21:8</p> <p>assisting (2) 12:2;28:14</p> <p>associated (4) 2:14;36:15;37:14; 64:24</p> <p>Associates (1) 35:3</p> <p>association (3) 36:21;57:2;72:15</p> <p>assure (1) 76:25</p> <p>assured (2) 15:7;19:6</p> <p>assuring (1) 20:11</p> <p>astronomically (1) 22:23</p> <p>at (89) 2:6,19;5:2,12;6:5,5,6,8; 11:2,4,25,25;12:10;15:8; 16:18;22:10;23:10,16,18; 26:2,11,13;27:25,25; 28:6;29:23;31:6;33:4; 34:13,15;36:4;38:4,13; 39:10;42:4,24;43:16; 44:25;45:8,12,25;46:6,7; 47:14;49:9,21;50:5; 51:11,19;52:15;53:24; 54:21;55:6;59:6,17,21; 60:2;61:1,2,11;62:1,11, 22,22,23;63:12;64:15; 65:5,9,14;66:8,15;67:13, 17;68:17;69:22;70:10,18; 72:12;73:16;75:16; 76:19;78:22;79:25;80:7; 81:4;82:7;83:21;86:19</p> <p>Atlanta (1) 70:9</p> <p>Atlantic (1) 36:24</p> <p>attachments (1) 65:1</p> <p>attendance (1)</p>	<p>3:25</p> <p>attended (1) 2:23</p> <p>attention (2) 12:14;67:24</p> <p>attorney (2) 17:12;59:7</p> <p>attract (1) 64:14</p> <p>audience (2) 41:14;50:9</p> <p>Augusta (77) 3:9,22;4:7,13;5:20,20; 18:1,19;19:7,7,13,14,20; 20:14,15;21:3,6,11; 22:15;23:6,20;24:25,25; 25:15;27:6,6,13,14;29:6, 8;32:12;33:2;34:14,15; 35:25;36:1;42:21,25; 46:18;47:15;48:3,3;49:2, 7,16,21;50:16,18,18;51:4, 4,17;52:13,17;55:9;57:2; 58:8,17,18,21,21;60:18; 62:13;63:22;65:12; 68:13;69:3,4;70:5,11; 76:20;81:3,4;82:8;83:3, 24;84:4</p> <p>Augusta's (8) 6:7;21:2;22:2;28:7,9; 59:3,4;73:16</p> <p>Authority (2) 18:17;70:4</p> <p>available (1) 11:23</p> <p>avenue (1) 22:13</p> <p>average (1) 33:4</p> <p>aware (6) 18:19;21:25;49:17; 73:20;76:2;85:21</p> <p>away (2) 20:17;46:25</p>	<p>81:1</p> <p>basically (1) 13:19</p> <p>basin (1) 21:9</p> <p>basis (1) 6:19</p> <p>bass (2) 44:17;69:23</p> <p>bathing (1) 20:21</p> <p>be (83) 4:25;5:9;6:13;8:2;9:10, 22;10:14;11:4,14,17; 12:13,20;13:11,22;14:20, 23,23;15:7,18;18:4;19:8; 23:22,24;24:5;25:7;27:1; 29:9,13,25;30:7;31:8,10; 32:1;33:3,5;34:8;36:4; 38:22;41:6;43:13;44:9; 45:21;46:19;47:10,20; 48:11;49:3,5;50:5;53:7, 17;55:23;56:15;57:10,15, 16,22;59:5,11;61:7,13,15, 21,23,24,25;62:14,15,17, 25;64:20;65:7;66:6,13, 15;67:7;73:6,14;78:18; 81:2,23;82:2,17</p> <p>bear (1) 43:18</p> <p>bearer (1) 53:18</p> <p>beautiful (3) 73:14;74:16;80:11</p> <p>became (2) 26:14;49:12</p> <p>because (18) 11:13;12:5;15:4;16:25; 36:20;37:11;43:11; 46:11;61:19;66:17,21; 73:5,7;74:25;77:15; 78:25;79:9,17</p> <p>become (1) 28:8</p> <p>becoming (1) 23:15</p> <p>been (41) 2:4,14;3:2;4:21;7:9; 11:7;13:2,11,20;14:7,8, 10;18:13,24;23:2,3,8; 25:15;26:22;30:3;35:22; 38:8,9;40:11;50:24; 51:10;55:10;58:18;59:19, 22;65:16;68:7,13;69:2, 13;70:8,18;72:22,25; 76:5;80:13</p> <p>before (16) 3:3;7:17;8:4,7;24:4; 31:3,20;39:1;40:6;44:20; 46:10;55:12;57:25; 58:19;78:3;84:15</p> <p>behind (2) 15:2;55:20</p>
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<p>being (20) 2:17;4:4,9;17:16,20; 18:7;24:14;25:8;26:19; 38:13;40:2;57:1,21; 60:22;67:25;69:4;75:1; 79:5;83:15;85:19</p> <p>believe (13) 11:12,16;16:19;19:25; 47:6,19;49:22,24;50:17; 60:1,2;66:17;68:7</p> <p>below (1) 75:23</p> <p>Ben (1) 3:14</p> <p>bench (5) 5:3,8,9;18:24;41:1</p> <p>benefit (2) 43:21;45:2</p> <p>benefits (1) 30:21</p> <p>best (4) 17:9;23:10;27:23; 86:17</p> <p>better (2) 14:17;81:18</p> <p>between (5) 11:3;26:1;36:23;37:21; 77:3</p> <p>beyond (1) 81:5</p> <p>big (5) 48:12;54:14;65:22; 66:10,14</p> <p>bigger (1) 61:19</p> <p>biggest (1) 17:2</p> <p>Bill (6) 3:17;15:3;26:20;58:3, 6;62:16</p> <p>billions (1) 76:15</p> <p>bipartisan (1) 12:17</p> <p>birds (2) 82:24;83:13</p> <p>bistate (1) 12:16</p> <p>bit (3) 65:23;82:2,3</p> <p>black (1) 50:4</p> <p>blasting (1) 78:1</p> <p>bless (1) 12:23</p> <p>blowing (1) 53:23</p> <p>blue (1) 33:20</p> <p>Bluff (13) 18:20;25:23;26:24; 28:15;33:3;34:17;35:13;</p>	<p>36:6,19;37:10,17;73:13; 82:21</p> <p>blunt (1) 61:7</p> <p>board (3) 12:3;70:22;72:14</p> <p>boat (7) 24:9;44:3,24;46:5; 62:10,11,13</p> <p>boating (1) 32:18</p> <p>boats (4) 47:24;61:14,21;64:10</p> <p>Bob (1) 3:21</p> <p>Bobby (1) 3:15</p> <p>body (1) 39:1</p> <p>boom (1) 43:24</p> <p>boost (1) 53:11</p> <p>born (4) 42:20;49:7,14;83:12</p> <p>both (20) 5:19;6:3,5,17;7:9;8:20; 14:8;34:19,23;39:10,20; 48:3;49:4,4,5;51:15; 62:18;72:5;77:12;78:21</p> <p>bothered (1) 73:6</p> <p>bottles (1) 62:4</p> <p>bottom (6) 16:9;61:1;62:1;64:12, 13;66:11</p> <p>Bransford (1) 76:19</p> <p>BRAUN (2) 59:16,16</p> <p>break (1) 75:4</p> <p>bribe (1) 75:2</p> <p>bridge (2) 11:2;55:18</p> <p>brief (1) 9:7</p> <p>briefly (2) 31:1;85:12</p> <p>bring (5) 48:6;53:12,13;76:15; 83:12</p> <p>bringing (2) 54:19;83:2</p> <p>broad (1) 36:17</p> <p>Brockington (2) 35:3,17</p> <p>brought (1) 12:4</p> <p>Bucky (1)</p>	<p>67:16</p> <p>budget (1) 58:10</p> <p>budgetary (1) 28:12</p> <p>budgeted (1) 71:7</p> <p>build (7) 4:15;5:24;6:1;7:22; 42:9;48:12;71:7</p> <p>building (7) 12:1;59:18;71:2,7,9,16; 75:11</p> <p>buildings (1) 36:3</p> <p>built (2) 71:3,15</p> <p>bullet (1) 67:9</p> <p>bunch (2) 38:9;77:20</p> <p>Bunker (4) 3:23;9:12;25:2,3</p> <p>bureaucrats (2) 77:20,23</p> <p>business (2) 17:2;77:10</p> <p>businesses (1) 53:5</p> <p>but (58) 6:21;7:14;11:8,10,20; 12:21;14:15,17;15:5; 16:9;17:15;22:12,18; 23:17;24:24;26:16; 31:25;32:8;34:1;39:8,10; 40:2,5,19,25;41:8;44:14; 45:8;46:13,25;47:8; 48:15;52:17;53:18; 55:15;57:13;58:15;59:7; 60:7,12,19;61:13;64:18; 65:25;67:12,24;68:2,16; 69:25;70:1;71:23,25; 73:4,17;78:7;79:12; 80:14;82:4</p> <p>Butt (1) 55:17</p> <p>by (39) 4:11,23;5:1,15;6:16,25; 7:9,21;8:11;9:7,10;10:8; 12:4,5,7;15:20,24;18:7; 19:17;21:1,2;22:12;27:6; 34:24;35:21;38:6;39:19; 44:14;46:19;51:12;61:2; 65:9;66:22;70:17;73:6; 83:6,10;84:8;85:10</p>	<p>61:4;70:9</p> <p>calling (2) 21:5;84:5</p> <p>calls (1) 36:3</p> <p>came (4) 7:16;8:19;16:12;81:18</p> <p>CAMPBELL (10) 9:5;30:25;40:16;42:11; 50:10;51:6;69:17;78:16; 80:4;85:9</p> <p>can (42) 2:8,25;9:1;12:23; 16:24;23:24;31:24; 37:19;44:10;45:6;46:15; 47:6;48:15;50:11;51:6; 55:22,22;56:21;58:11; 60:6,6,7,7,13;63:7;64:2; 66:10;67:6,7,13;71:22; 72:4;73:3,7;75:25;76:24; 77:14;79:10,12;81:11; 83:4;86:17</p> <p>can't (10) 8:12,14,16,20;60:3; 64:12;71:20,23;77:23; 80:22</p> <p>canal (1) 69:5</p> <p>cannot (1) 79:11</p> <p>can't (1) 17:4</p> <p>Cape (1) 69:22</p> <p>capital (1) 6:9</p> <p>capture (1) 31:10</p> <p>car (1) 75:8</p> <p>care (6) 45:18;54:6,6;65:21; 66:2;83:9</p> <p>cares (1) 80:17</p> <p>Carolina (22) 3:21;4:5;9:16;19:14; 23:20;28:11,13;34:20; 39:20;45:9;50:19;51:15, 16,20;52:16,18;58:10,12; 59:6,12;62:19;65:15</p> <p>Carolina's (2) 59:2,2</p> <p>case (1) 6:21</p> <p>catastrophic (2) 11:9,11</p> <p>category (1) 39:11</p> <p>catwalk (1) 46:11</p> <p>cause (7) 13:25;40:6;67:1,8;</p>	<p>72:3;80:10;84:9</p> <p>causes (1) 69:14</p> <p>century (3) 54:20,24;65:15</p> <p>certain (1) 66:8</p> <p>chain (1) 80:1</p> <p>Chairman (3) 3:23;9:12;25:3</p> <p>chamber (1) 2:3</p> <p>chambers (2) 75:23,24</p> <p>change (2) 26:5;77:25</p> <p>changed (1) 6:18</p> <p>changing (1) 7:6</p> <p>Channel (1) 67:23</p> <p>channels (2) 47:25;53:2</p> <p>characteristics (1) 37:2</p> <p>charge (3) 16:21;17:6;77:7</p> <p>Charlie (1) 51:19</p> <p>chasms (1) 75:12</p> <p>Chattooga (1) 65:19</p> <p>Cherokee (1) 60:17</p> <p>child (1) 44:16</p> <p>choose (3) 40:23;68:20;73:4</p> <p>chase (1) 73:4</p> <p>chosen (1) 73:20</p> <p>Chuck (3) 3:24;25:13;29:5</p> <p>Circle (1) 65:15</p> <p>circumstance (1) 12:19</p> <p>cited (1) 27:2</p> <p>cities (8) 5:20;7:10;19:7;23:22; 24:15;27:6;77:3;79:9</p> <p>citizen (1) 72:8</p> <p>citizens (6) 12:15;17:25;19:12,20; 37:24;55:23</p> <p>City (15) 5:19;6:4;22:10,15;</p>
--	--	---	--	--

<p>25:14;33:1;67:5,10;70:9; 73:15;75:10,13;76:24; 83:25;85:11 Clark (1) 72:3 Clarke (1) 3:12 clean (2) 20:10,13 clear (3) 19:14;72:25;82:1 clearly (3) 31:8,21;77:22 Clemson (1) 63:16 Clinton (1) 51:24 close (1) 22:25 closed (2) 27:2;78:17 closing (2) 85:10;86:13 Club (2) 45:12;55:10 clueless (1) 81:24 Coast (1) 76:3 collar (1) 33:20 colleague (1) 25:12 collect (1) 42:13 Colonel (2) 56:10;82:14 Columbia (2) 38:5;58:24 Combat (2) 74:20;76:12 come (26) 3:6;9:10,17;19:21; 25:9;29:14;30:16;32:2; 45:6;47:9;50:24,24; 57:13,14;58:4;63:19; 64:19;65:4;66:16;68:4; 69:8,9;80:19;82:14,16; 83:22 comes (6) 15:22;23:16;52:25; 57:7,25;66:10 comfortable (1) 46:12 coming (10) 18:4;44:2;51:5;52:22; 59:10;71:17;74:5;76:5; 78:24;85:13 comment (7) 7:10;12:9;31:3,14,21; 50:3;86:7 comments (25) 2:25;3:2;9:7;11:24;</p>	<p>12:2,5;18:5,10,16;22:25; 25:19;31:5,11,23,24; 32:8;41:14;42:15;50:9, 11;58:4;80:12;85:16; 86:10,11 commercial (4) 44:19;63:18,18;65:5 commission (1) 2:3 commissioned (1) 35:18 Commissioner (7) 3:11,12,13,14,15,16,17 commit (1) 15:24 Committee (2) 13:2,9 common (5) 14:3;17:19,23;25:11; 48:9 communities (6) 3:21;20:2;22:16;30:21; 50:17,23 community (16) 2:5,11;12:15,21;20:12; 23:1;24:15;29:10,20; 43:7,21;45:3;54:17; 70:12;74:14;78:13 companies (1) 43:25 Company (1) 32:22 compare (1) 4:24 compensate (1) 80:16 completed (4) 31:17;34:18;35:3; 63:17 completely (2) 31:5;81:24 complex (1) 20:20 components (1) 37:7 comprehensive (1) 21:4 comprised (1) 85:22 compromise (3) 22:8,9;67:4 concern (3) 2:16;27:8;79:2 concerned (9) 26:23;68:14,15;72:7; 78:25;79:6;83:6,7,21 conclude (1) 37:15 concluded (1) 86:19 conditions (4) 19:4,15;26:13;28:17 conducted (1)</p>	<p>19:1 conflicting (1) 59:25 Congress (7) 4:3;13:21;17:3,7; 51:25;52:2,9 congressional (1) 10:18 Congressman (10) 4:4,6;9:9,11,13;10:7,9; 12:25;18:2;77:24 connection (1) 36:22 Connector (1) 32:12 consequences (2) 29:12;30:17 consider (9) 5:22;31:19;33:23;34:9, 9;43:20;44:2,17,22 consideration (1) 20:5 considered (1) 4:22 considering (1) 33:23 considers (1) 45:4 consistently (1) 35:11 consolidated (1) 19:19 constituents (1) 56:5 construct (1) 7:19 constructed (1) 4:25 construction (3) 15:18,20;37:3 constructs (1) 5:5 consultant (1) 7:9 continually (1) 64:20 continue (4) 20:4;37:19,23;86:16 continued (1) 65:11 continues (1) 20:19 contract (2) 49:23,25 contribution (1) 36:16 control (9) 27:19;28:14;46:24; 73:8,9,11,18;81:7,8 controlling (3) 79:14,20,21 convenient (1) 60:2</p>	<p>convention's (1) 63:21 conversation (4) 2:5;18:14;54:2;66:24 conveying (1) 74:24 convince (2) 17:17;28:25 cooling (1) 32:23 copy (2) 25:20;35:8 Corps (61) 4:23;5:1;6:5;7:16;8:8, 25;11:18;12:6,14;13:20; 14:19;15:15;16:10,20; 17:7,17;18:16,21;19:1,6, 10,24;21:6,25;22:18; 23:21;24:4,17;29:24; 30:17;33:22;37:16; 38:11;39:7;46:4;47:18; 48:16;51:13;52:15; 53:16;56:9;57:23;62:17, 23;63:1,9;67:5;68:17,18; 70:6;72:16,23;73:19,25; 74:8,14;80:15;81:16; 82:20;84:8;86:8 Corps' (8) 5:11;6:9;11:6;22:21; 24:2;40:1;68:3;74:10 Corp's (1) 24:19 corrected (1) 22:14 correspondence (1) 16:5 cost (10) 6:12;16:14,15;33:24; 34:1;40:18;48:13,13; 74:2;81:4 costs (2) 6:9;33:24 could (19) 4:25;8:4;15:3;17:9; 20:4;22:8;40:25;41:11; 53:11,12;54:3;60:5; 64:20;66:6,14;68:19; 73:22;78:5;81:17 couldn't (1) 8:3 Council (7) 25:4,14;26:22;27:9,15, 21;29:2 Councilman (1) 3:24 counted (1) 21:12 counties (1) 37:22 country (1) 15:13 counts (1) 68:25</p>	<p>County (21) 3:23,24;25:4,8,14; 26:12,20,22;27:9,21; 28:23;29:2;38:5;58:7,11, 23,24,24,25;60:24;70:8 couple (5) 3:6;39:6;41:13;52:20; 85:20 course (4) 13:7,10;49:17;61:13 courses (1) 63:16 court (2) 2:24;31:9 cover (1) 48:14 cracks (1) 72:20 crashes (1) 81:12 create (1) 28:3 created (2) 19:22;35:21 credit (1) 10:7 Creek (3) 26:11;59:3,4 crest (1) 18:23 crime (3) 74:22,23;77:19 criteria (1) 36:3 criterion (3) 36:12,14,25 critical (6) 2:6;20:11;48:1,1,8; 49:4 CSRA (3) 48:4;49:3,20 Cuban (1) 70:2 current (9) 5:1;27:3,12;33:4;35:7; 48:8;51:20;74:22;81:20 Currently (1) 49:8 cut (1) 22:10 cyber (2) 54:19;78:13</p>
D				
<p>Dam (71) 2:12;4:16,19;5:4,5,6, 24;7:20;8:1,9;19:10,5; 13:11;14:5,22;16:15,17; 18:21,22;19:22,23;24:18; 25:17,24;26:24;27:1,11; 28:16;33:1,3,5;34:17,21; 35:6,13,19;36:6,11,20;</p>				

37:11,18;39:13,16,45:1; 47:11;52:3,8;56:14; 63:25;64:9;66:12,19; 68:23;69:12,22;70:16,22, 23;72:25;73:5,13,17,23; 74:2;76:6,7;79:22;81:14, 20,21;82:21;83:3	deepen (1) 82:25 deepened (2) 15:12;23:24 deepening (3) 15:14;48:24;84:1 Defense (1) 13:6 definitely (4) 66:4,5,25;67:9 delay (2) 15:14,23 delegation (1) 58:11 deliver (1) 20:16 delivered (3) 13:14,15,18 demonstrated (1) 19:10 Dennis (1) 3:13 Department (4) 4:13;13:6;28:13;34:25 depend (4) 19:21;53:6;67:2;79:9 depth (1) 5:12 design (3) 15:16;37:12;40:20 designation (1) 63:17 designed (2) 54:16;63:6 desire (2) 18:22;59:24 Despite (1) 21:10 destroyed (1) 63:8 destruction (1) 37:8 detail (1) 81:22 details (4) 14:14;16:4;23:15;41:5 determination (2) 36:18;37:9 determinations (1) 35:10 determined (3) 21:13;34:21;36:10 detract (1) 35:15 devastating (3) 23:22;29:13,18 devastation (1) 29:9 develop (3) 22:18;54:22;78:5 development (8) 21:23;27:7;28:10; 33:19;48:10;49:2;72:4;	76:23 did (12) 4:19;15:6;22:17;29:23; 39:9;42:9;66:21;67:23; 71:6,7;82:13;85:6 didn't (9) 4:18;26:15;34:2;41:12; 53:1,3;55:14;65:21;82:22 didn't (1) 81:25 die (2) 84:11,13 died (2) 52:1;83:11 difference (5) 6:11;12:23;24:6;30:10; 60:13 different (10) 6:19;10:11;12:20; 22:23;23:18;56:3;60:23; 61:5;76:22,23 dig (2) 5:8;41:5 digging (1) 62:4 dilemma (1) 7:10 diligence (1) 39:4 diminish (1) 47:5 dire (1) 30:23 direct (2) 18:10,15 director (4) 4:12;33:12;34:14; 85:23 directors (1) 72:14 disappointing (1) 11:18 disaster (1) 48:20 discharges (1) 21:22 discovering (1) 77:17 discrepancy (1) 26:7 discussed (2) 10:4;39:23 discussing (1) 46:2 distance (1) 64:6 distinctive (1) 37:1 distinguishable (1) 37:6 District (11) 3:11,12,13,14,16,17,18; 25:13;29:5;32:14;58:6	districts (1) 36:4 Dive (2) 60:24,24 Division (2) 20:24;34:24 DNR (2) 39:21,21 do (59) 2:18,21,22;9:1,6;10:10; 15:15;16:11,22;17:1,9, 25;25:12,18;29:3,15,21; 31:1,15;40:24;43:17; 44:9,12,13;45:11,25; 46:15;47:6;49:22;54:10, 10;55:12;58:13,25;60:6, 15,19;61:10;62:15;63:11; 67:2,11,14;69:6,10,11; 71:22,23;74:14;77:7; 80:17,21;81:7,7,13,25; 82:2;84:11,13 dock (5) 41:10,25;42:7;46:7,10 docks (6) 24:9;41:7;46:7;47:23; 53:6;64:13 documentation (1) 16:7 documented (1) 76:5 documents (1) 23:17 DOD (1) 20:20 DOE (1) 20:20 does (10) 46:20;47:18;50:3,7,7,8; 66:18;73:11;80:23;81:1 doesn't (9) 6:20;28:8;39:18;40:18, 24;66:13;70:5;72:3; 82:21 doing (5) 6:25;17:8;59:5,14; 72:24 dollars (7) 28:6;29:20;30:9,16; 48:6;53:13;77:16 don't (46) 7:13;14:14;15:11,14; 16:17,18,25;29:10;33:16; 39:7;40:9,9,19;41:8,25; 43:17;45:5,17,22;46:12; 53:6,17;54:5,6,10;60:18; 61:7;62:6;63:25;67:1,3, 19,22;68:7,15;70:2; 71:16;72:24;73:5,6; 74:12;82:14,16,22;83:9, 11 done (14) 15:16,16,17,18;17:12, 22;18:7;24:20;28:25;	39:4;69:11;72:20;74:15; 82:5 Donohue (2) 82:6,6 don't (2) 33:16;45:17 DOT (1) 16:21 Doug (1) 78:4 down (20) 8:18;9:4;14:7;23:12; 39:23;41:5;44:5,8;47:22; 48:17;53:7;57:12;62:7; 76:8,8;79:15;80:9,18; 81:2;83:3 downsized (1) 21:18 downtown (3) 35:25;48:2;63:15 dozens (1) 44:16 draft (2) 7:25;11:6 dramatically (1) 6:18 drastically (1) 21:17 draw (1) 48:17 drawdown (10) 25:21;26:11;28:24; 29:24;46:2;53:1;57:8; 67:20;72:21;74:11 drawings (1) 35:7 Dreamer (1) 41:17 drinking (2) 20:20;32:18 Drive (13) 45:15,25;47:14;49:9; 51:9;55:6;60:17;62:12; 67:17;72:13;78:23;80:8; 82:7 driven (1) 66:22 drop (10) 5:12,17;11:10,11; 25:25;75:21,21;80:24; 81:1,11 dropped (3) 53:7;75:5,6 dropping (1) 81:10 dry (7) 18:23;24:9;29:12,17; 30:4;41:12;46:10 Ducks (1) 39:22 due (3) 36:21;39:4;56:16 Duncan (1)
---	---	---	--	---

18:11 during (5) 14:9;19:15;22:24; 26:10;86:11	36:8,19;37:10 eligible (3) 34:21;36:11,17 eloquence (1) 23:11 else (8) 62:9;63:10;68:16; 77:13;81:6;85:3,4;86:14 elsewhere (1) 8:2 email (3) 12:5;31:24;60:7 emailed (1) 60:9 embody (1) 37:1 emotional (1) 42:14 enactment (2) 10:23;11:15 end (4) 30:23;50:14;70:12; 86:7 endangered (4) 21:19;24:13;54:4;83:8 endorsed (1) 27:21 engage (1) 43:7 engaged (1) 85:22 engagement (1) 31:3 engaging (1) 43:9 engineer (4) 23:14;74:21;76:12; 85:25 engineering (3) 7:17;14:6;37:13 Engineers (23) 11:19;12:6;14:20;17:8, 18;19:6,11;21:25;23:21; 24:17;37:16;46:4;47:19; 48:16;51:13;53:16;56:10, 11;70:6;80:15;81:16; 82:20;86:9 Engineers' (1) 18:22 enjoy (1) 60:21 ensure (1) 31:12 entire (4) 35:20,24;48:4;85:15 entity (1) 37:6 environment (2) 56:18,23 Environmental (4) 20:23;28:14;65:24; 85:3 environmentalism (1)	66:23 Envision (1) 21:5 EPD's (1) 21:7 equally (1) 6:5 equation (1) 65:10 equipment (1) 76:10 Erich (1) 59:16 Erick (1) 34:12 especially (1) 51:21 essential (1) 33:1 essentially (1) 5:8 estate (1) 63:19 estimate (1) 64:3 estimated (2) 25:25;49:22 estimates (1) 70:21 ethically (1) 20:1 evaluation (2) 6:2,7 even (9) 8:10;12:17;24:20;45:1; 62:8;66:24;67:3;69:22; 80:14 evening (9) 4:1,14;32:1,7;38:3; 52:10;55:1;72:11;80:6 event (1) 57:6 events (2) 21:23;36:15 ever (2) 59:23;77:25 every (8) 15:21;19:17;20:8; 22:13;25:5;61:18,25; 62:13 everybody (12) 18:3;30:20;42:4;47:3; 59:18;60:8;63:10;67:7; 68:16;72:12;78:14;84:3 everyone (8) 2:23;11:22;25:3;31:12; 38:3;45:4;78:19;85:13 everyone's (1) 31:10 everything (8) 13:13;34:9;46:15; 47:17;72:23;76:25; 78:12;81:6	everywhere (1) 75:20 exact (1) 38:22 Exactly (1) 46:8 example (1) 26:10 examples (1) 37:13 excavates (1) 5:7 exceptions (1) 14:21 Excuse (5) 42:11;62:20;63:9; 79:18;82:8 Executive (1) 34:14 exercise (1) 85:18 exhausted (1) 84:24 existed (1) 37:21 existing (5) 4:19;5:5;6:1;27:25; 28:16 exists (1) 41:10 Expansion (1) 20:4 expect (1) 86:5 expended (1) 24:22 expensive (1) 48:12 experience (2) 19:4;72:16 experiencing (1) 43:22 expert (1) 18:9 expired (1) 31:16 Explain (1) 42:6 explanation (1) 26:6 explicitly (1) 28:18 extend (1) 26:21 extended (1) 62:15 extensive (1) 48:21 eye-opener (1) 25:24	face (1) 42:5 faces (1) 40:6 facility (1) 62:12 fact (6) 5:16;13:14;20:9;24:4; 49:14;50:23 failed (1) 12:25 fails (1) 21:11 failure (1) 22:3 failures (1) 66:19 fair (1) 34:8 fall (5) 23:12;62:18;63:10; 75:24;79:18 fallen (1) 79:18 falling (1) 29:19 family (3) 50:20;70:19;79:2 fan (1) 65:22 far (5) 20:17;24:7,8,10;81:11 fast (1) 76:11 father (1) 42:22 favor (1) 73:15 favours (1) 28:23 Fear (1) 69:22 feasible (1) 8:10 February (1) 19:1 federal (2) 2:9;8:11 feel (3) 43:10;46:12;82:11 feet (18) 5:9,13,14,18;11:3,3,5; 26:2,3,4;38:14;41:13,24; 46:7,9;65:8;66:13;68:3 fell (4) 46:8;75:7,7,8 Fennoy (1) 3:17 FERC (1) 69:4 few (1) 53:6 fight (1)
E			F	

<p>30:22 fighting (2) 17:10;54:15 figures (1) 74:3 figuring (1) 67:6 file (3) 70:3,5;85:5 filed (1) 84:20 fill (1) 31:5 finally (1) 24:19 financed (1) 20:14 financial (1) 70:17 find (4) 24:12,13;41:5;63:9 fine (1) 77:7 finish (1) 76:15 fire (1) 75:6 firm (1) 86:1 first (17) 10:3;14:18;16:3,12; 20:10;23:4,5;32:3,5,5; 39:11;49:18;52:20;77:10, 18;79:23;85:21 fish (51) 4:16;5:24;6:1;7:19; 14:11,11;15:17;16:13; 21:19;24:19,23;27:11; 32:15;34:10;35:14;39:11, 14,17;40:13;44:13,17,23; 45:18,18;49:10;54:4,6,7, 7;56:14;61:8;64:14,18; 66:25;68:7;69:6,8,21; 70:24;71:23;73:2,3,18; 76:2,4,14;77:21;79:24, 25;80:2;83:4 fisherman (1) 65:18 fishery (1) 44:19 fishing (5) 32:17;42:21;43:25; 44:25;60:22 Fitz-Symms (1) 49:7 fix (6) 52:2,8;68:4;82:20; 84:8,10 fixed (7) 5:3,6;7:11;8:2;18:23; 19:2;76:10 flood (12) 8:13,19;27:19;66:10,</p>	<p>18;72:2;73:8,9,11,18; 81:7,8 flooding (1) 27:13 floodplain (7) 5:3,7;8:12;18:24;41:1; 42:10;79:20 floods (2) 8:21;66:14 floodwaters (1) 8:4 floor (1) 10:10 Florida (1) 59:22 flow (1) 81:23 flows (1) 66:16 foaming (1) 26:13 focus (1) 50:11 focused (1) 76:25 folks (8) 14:16;15:10;20:17; 43:12;53:4;59:10;63:23; 65:4 follow (1) 25:5 followed (1) 9:10 following (3) 40:11;56:17;65:16 follow-up (1) 13:24 food (1) 80:1 foot (3) 5:9;26:20;62:16 for (161) 2:3,5,15,16,20;4:1,9; 5:21;6:4,22,22;8:11; 10:20;12:8;13:12,23; 15:11;16:22;17:11,16,20, 21;18:3;19:24;20:5,11, 14,22;21:6,10,21;22:1; 23:8,11,23;26:3,6,24; 27:3,17,18;28:3,19; 29:14;31:10;32:9,17,18, 20,21,23,23;33:15,21,22; 34:4,4,21;36:3,7,11,25; 37:1,22,24;38:21;39:12, 13;40:9,10,14;42:2; 44:16,23;45:5,10;47:7,7, 8,15;48:2,4;51:5;52:2,18; 53:4,18,21;54:4,15,19,19, 23;55:2,10;56:2,4;59:21; 60:25;61:14,22;62:3,4, 16;63:9,22,22;65:12,16; 67:9;69:4,13;70:8,10,15, 18,22;71:8,14,21,22,23;</p>	<p>72:1,11;73:8,9,11,24; 74:6,10;75:25;76:16,24; 77:17;78:6,9,10,20,21,24; 79:2,5,6,6,7;80:1,16,16, 19;81:8;82:9,20;83:14, 19;84:20;85:2,13,15; 86:4,8,11 forecasting (1) 26:8 Forget (1) 79:24 former (1) 74:20 forms (1) 31:22 Fort (2) 20:18;52:15 forth (2) 4:17;71:19 fortunately (1) 23:14 forward (2) 16:10;55:22 found (1) 24:19 foundations (1) 75:11 four (4) 6:6;15:13;32:23;76:24 fourth (1) 57:5 Foxfire (1) 38:5 frankly (3) 14:1,16;61:6 Frantom (1) 3:11 free (1) 85:18 friend (1) 58:1 friends (2) 9:15;50:20 frightening (1) 24:12 from (55) 3:9,11,12,13,14,15,16, 18,20,22;5:13;10:25; 16:5,20;21:5;24:7,8,10; 28:14,23;33:2;35:15; 39:20;41:14;44:6;46:16; 49:11,16;50:9;51:15,16, 17,20;52:8;53:14;56:13, 16,17,20;58:2;59:10,22; 63:19;64:1;65:5;66:19; 71:17;72:20;73:23; 74:23;75:19;82:4;85:24, 25;86:16 front (3) 3:10;59:3,4 full (6) 3:1;30:2,2;44:5;49:19; 61:11</p>	<p>fund (2) 13:6;40:23 funded (2) 13:11;39:16 funding (1) 13:7 funds (4) 16:23;34:4,5;52:8 further (1) 28:10 future (8) 21:11;26:23;40:24; 43:12;77:16;78:10;79:6,7</p>	<p>16:10;17:13,22;22:13; 24:18,20,22;30:11;43:18; 52:7;55:20;59:24;60:5; 61:4,16,23;63:17;69:11, 12;77:25;81:9;85:7 gets (1) 61:19 getting (2) 54:18;64:21 give (9) 10:7;33:25;40:12;51:6; 58:4;61:7;64:7;76:9; 78:10 given (2) 46:13;68:2 gives (1) 64:6 Gloria (3) 51:10,13,18 go (14) 16:10;18:6;30:2;31:1; 39:2;41:4,12;44:5;48:19; 62:2,4;64:15;75:15;83:17 goal (3) 39:15;59:1;68:22 God (3) 8:18;12:23;79:25 goes (4) 10:8;75:17;81:2,5 going (62) 8:18,21,21;13:11; 14:22,23,23;15:22;16:13, 15;23:12;25:19;29:25; 30:15;38:8;39:2;41:6; 43:13;46:14,15,25;47:5, 24;48:17,18;54:12;56:20; 57:9,24;61:24;62:7,14, 15,16,17,18,25;63:2,10, 24;64:7;67:10,12;68:4,5; 70:20;74:5;75:9,11,12; 77:25;79:13;81:2,3,9,20, 23,24;84:19,25;85:1,4 gone (4) 50:1;70:8,21;84:22 Good (20) 4:14;12:7;15:5;25:2; 29:4;32:1,7;38:3;43:16; 45:8;47:10;52:10;55:1; 58:1;61:19;69:24;72:11; 74:6;80:6;83:19 Goodale (4) 55:7;62:22;72:15;74:9 Google (1) 81:19 Gordon (2) 20:18;52:15 got (16) 7:15;14:17,19;15:2,19, 23;16:9;17:22;46:10; 50:20;66:9;70:3;77:15; 83:1;84:8;85:6 gotta (3) 17:4;30:22;60:11</p>
--	---	--	---	---

G

game (1)
 71:14
GARDINER (2)
 52:10,11
Gary (2)
 3:23;25:3
gates (5)
 8:3,17;9:2;14:9;66:11
gave (2)
 46:4;62:24
GDOT (1)
 18:17
general (3)
 4:10;28:11;59:7
generally (1)
 18:5
generates (1)
 57:5
generation (2)
 73:23,24
generations (2)
 77:17;78:10
generous (1)
 13:3
gentleman (1)
 80:21
gentlemen (11)
 9:6,14;42:12,12,13;
 50:10;51:2;52:11;67:18;
 78:16;85:9
Geological (1)
 11:1
Georgia (29)
 5:25;9:15;16:21;18:13,
 16,19;19:13,20;20:23;
 23:2,24;32:13,15,19,22;
 34:20,25;36:9;38:6;
 39:21;42:21;49:7;50:18;
 59:13;62:19;64:5;70:4;
 83:24,25
Georgians (2)
 23:4,5
Georgias (1)
 23:3
get (32)
 3:3;13:25;14:14,19;
 15:12,16,16,17,17,20;

gotten (2) 23:9;43:1	gun (1) 84:12	3:14	hearing (2) 59:25;86:16	35:2,15;36:2,9,13;37:20
government (5) 2:10;19:19;20:9;28:4; 71:21	guys (3) 42:19;44:21;60:14	hasn't (1) 69:20	heck (1) 17:6	historical (1) 35:22
governments (2) 50:25;51:4	H	hate (2) 53:17;82:18	height (1) 66:16	history (3) 35:5;36:17,21
Governor (4) 18:11,11,18;59:8	had (18) 9:25;13:15,20;17:3; 38:25;39:3;46:8;49:13; 51:14,22;56:7;58:20; 59:24;67:21;68:17; 72:18;74:10;82:23	have (159) 2:8,14,18,20,22,24;3:1, 2,6,19,25;4:3;6:17;7:13; 8:20;9:7;10:12;11:24; 12:3,4;14:4,9,12,15,19; 15:12,19;16:9,17,19; 18:13;19:14,20;20:9; 21:14,20;22:16;23:2,3; 24:3;25:5;26:4,7;29:15, 21;30:8,19;31:8,13,16; 32:1,5;33:17;35:8,11; 36:15;38:7;39:4,6,7;40:6, 22,24;41:24,25;42:6,22; 43:3,17,24;44:13,16,18; 45:5;46:11,20,25;47:11; 48:14;49:24;50:23; 51:10,52:7;54:3,11; 55:10,10;57:6,8,11,11; 58:1,6,14,15;59:5,9,19, 24;60:18,20;62:4,15; 63:16;64:24;66:13;69:1, 6,8,19,21,25;70:5,21; 71:15,18,21;72:3,16,18, 18,19;73:22;74:9;75:4, 12,14;76:1,3,4,10,22; 77:2,3,15,19;78:4;79:7,8, 13,15,16,22;80:4,13,24; 81:4,13,17,22;83:10; 84:13;85:2,10,14,22; 86:5,9,10	heighth (1) 10:22	Hixon (3) 58:3,5,6
grader (1) 81:17	hadn't (1) 68:9	haven't (3) 44:21;60:12;72:22	held (1) 51:22	Hodge (1) 15:25
graduate (1) 63:16	half (5) 5:13,13;49:21;52:24; 77:15	haven't (1) 40:3	hell (1) 78:7	hold (1) 57:3
Graham (2) 10:14;84:6	hammering (1) 78:8	having (3) 10:14;35:22;39:17	Hello (5) 45:24;49:6;60:16; 68:11;78:19	Holmes (3) 42:18,19,20
grand (1) 74:24	hand (3) 8:17;13:14;28:2	he (9) 4:6;9:18;10:2;14:2; 17:5;46:4;56:23,24,24	help (8) 11:23;24:20,22;53:11, 12,13;55:22;61:4	home (1) 78:12
grassroots (1) 60:5	hanging (1) 68:3	he'll (1) 9:10	helping (3) 17:13;18:9;70:16	Homeowners (1) 72:15
grateful (2) 9:23;10:2	Hanner (4) 45:24,24;47:13,13	he's (4) 4:5,12;13:1;46:3	Hephzibah (1) 75:19	homes (4) 24:10;63:25;64:1; 72:19
great (4) 9:21;13:12;30:19; 60:11	happen (11) 15:11;46:14,15;47:17; 53:6;66:20;68:5;73:3; 74:12;76:13;77:6	head (2) 22:6;76:11	her (5) 31:10;40:12;79:6,6,7	honesty (1) 24:13
greater (2) 5:17;26:5	happened (5) 11:9;53:1;67:20,21; 84:17	headed (1) 67:9	here (54) 2:17,20;3:2,22;4:5,7; 11:24;12:12,23;16:18; 17:16,17,20;25:7,11; 33:7;35:8;38:8,25;39:7; 40:5;41:3;42:20;43:6,15; 50:16;52:6,14,16,17,19, 25;54:15,19;56:7;57:6; 59:22;60:8;66:1;68:13; 70:20;75:19;76:13,21; 78:9;79:5;82:10,11,14; 83:9;84:7,17,23;85:19	honored (1) 25:7
greatest (1) 58:19	happening (1) 46:16	he'd (1) 9:10	here's (3) 81:19,19;82:19	hopeful (2) 12:11;73:22
greed (1) 66:22	happens (2) 29:11;42:1	he's (4) 4:5,12;13:1;46:3	hey (4) 12:21;42:19;65:13; 83:17	hopefully (1) 3:7
GREENBAUM (3) 51:2,8,9	happy (1) 67:8	head (2) 22:6;76:11	Hi (1) 47:13	hoping (2) 13:23,24
Greene (2) 63:14;74:19	Harbor (6) 20:4;23:23;48:25;83:1; 84:1,21	heard (11) 31:8,13;40:3;52:23; 54:5;55:8,13;65:20; 71:18;85:24,25	Hibner (2) 56:11;82:14	Horse (1) 26:11
Greenville (1) 65:15	harbors (1) 34:5	health (5) 20:2,11;22:9;28:13; 46:23	high (3) 5:22;37:4;45:16	hour (1) 77:14
Grew (1) 42:21	hard (1) 25:20	healthy (1) 20:14	higher (3) 5:10;40:13;64:16	hours (1) 43:3
Griff (1) 74:18	Hardie (1) 3:10	hear (2) 40:12;55:2	highest (2) 68:21;69:16	House (2) 10:9;58:6
GRIFFIN (2) 74:18,18	Hardy (1) 58:22	heard (11) 31:8,13;40:3;52:23; 54:5;55:8,13;65:20; 71:18;85:24,25	high-powered (1) 59:10	how (20) 7:15;9:20,22;12:16; 13:10;16:5;29:15,21; 47:18;48:15;54:12;63:2; 65:25;66:1;69:10;70:2; 71:8;82:19,19;84:11
ground (2) 47:24;75:23	Harley (1) 75:7		Hill (1) 72:3	however (2) 3:3;46:9
group (1) 18:9	has (38) 2:4,23;5:19;7:2;8:8,25; 11:7,19;12:6,21;13:2,11; 14:8;16:1,6,7;17:12; 18:24;19:22;20:13;21:3; 25:15;26:22;28:24; 30:18;31:16,21;34:19; 36:10;38:12,22;49:3; 60:8;68:8,16;73:25; 77:22;79:18		Hills (2) 49:8,15	Hudson (1) 70:10
groups (1) 39:22	hasn't (1) 69:20		him (1) 58:4	huge (1) 73:12
grow (1) 20:19	have (159) 2:8,14,18,20,22,24;3:1, 2,6,19,25;4:3;6:17;7:13; 8:20;9:7;10:12;11:24; 12:3,4;14:4,9,12,15,19; 15:12,19;16:9,17,19; 18:13;19:14,20;20:9; 21:14,20;22:16;23:2,3; 24:3;25:5;26:4,7;29:15, 21;30:8,19;31:8,13,16; 32:1,5;33:17;35:8,11; 36:15;38:7;39:4,6,7;40:6, 22,24;41:24,25;42:6,22; 43:3,17,24;44:13,16,18; 45:5;46:11,20,25;47:11; 48:14;49:24;50:23; 51:10,52:7;54:3,11; 55:10,10;57:6,8,11,11; 58:1,6,14,15;59:5,9,19, 24;60:18,20;62:4,15; 63:16;64:24;66:13;69:1, 6,8,19,21,25;70:5,21; 71:15,18,21;72:3,16,18, 18,19;73:22;74:9;75:4, 12,14;76:1,3,4,10,22; 77:2,3,15,19;78:4;79:7,8, 13,15,16,22;80:4,13,24; 81:4,13,17,22;83:10; 84:13;85:2,10,14,22; 86:5,9,10		his (2) 13:3;56:11	human (2) 56:16,23
growing (5) 22:10;43:23,23;50:15; 54:17	hasn't (1) 68:9		Historic (11) 34:15,18,19,23,24;	humans (1) 79:25
growth (2) 20:14;22:10	half (5) 5:13,13;49:21;52:24; 77:15			hundred (4) 51:16,22;65:8,8
Guard (4) 74:20;76:3,9,12	hammering (1) 78:8			hundreds (5) 20:15;30:8,15;33:18; 77:16
guess (4) 5:17;46:3;54:7;83:7	hand (3) 8:17;13:14;28:2			hundred-year (3) 33:25;34:7;42:10
guests (1) 9:7	hanging (1) 68:3			
guide (1) 65:18	Hanner (4) 45:24,24;47:13,13			

<p>husband (1) 79:4</p> <p>hydraulic (1) 75:22</p> <p>hydroelectric (1) 66:9</p> <p>hydrology (1) 65:24</p>	<p>24:3;49:18,20;56:16; 63:24</p> <p>impacted (2) 19:9;46:19</p> <p>impacts (1) 57:17</p> <p>impassable (1) 62:8</p> <p>implementation (1) 25:22</p> <p>importance (3) 10:4;23:25;27:2</p> <p>important (9) 2:4,7;9:20;45:17; 46:18,23;52:4;56:4;65:6</p> <p>impoundment (1) 35:20</p> <p>impressed (1) 51:21</p> <p>improved (1) 73:14</p> <p>Improvement (2) 10:20;44:25</p> <p>Improvements (1) 27:17</p> <p>in (178) 2:5,11,21;3:21,25;4:2, 5,17;5:16;6:2,7,9,20; 7:18;8:15;9:18,24;10:3; 12:1,15,21;13:3,14; 14:22,25;15:3,13;16:3, 11,12,21;17:6,6,13;18:14, 19;19:1;20:14,15,24; 21:7;22:17;23:6,6,23; 24:3,20,25;25:9,16,20,25; 26:12,18,25;27:9,13; 28:10;29:16;30:4,7,9; 31:12,22;32:13,16,25; 33:18;34:10,13,18,19,22, 23,23;35:4,14,16,22; 37:18;38:15;40:23; 41:11;42:10,20,25;43:1, 2,2,4,19,22,24;44:2,7, 46:18;47:3,9,14;48:6,14; 49:8,10,15,19;50:4,14,15, 15,16,24;51:10;52:18; 55:11,21,24;56:1,8,19; 58:1,6,9,23;59:6,12;60:8, 10,20;61:18;62:5,18,21; 63:15,17;64:10,10;65:10, 14;67:2;68:12;69:1,3,3,4, 5;70:9,9,11,16,20;71:3, 13;72:17;73:15,25;74:2, 7;75:8,17,22,24;76:8,20; 78:5;79:13,23;81:3; 82:17,20;83:25;84:3,3,9, 10,21;86:2,3,4</p> <p>inaudible (1) 42:8</p> <p>include (2) 3:9;35:24</p> <p>included (2) 27:18;35:6</p>	<p>includes (2) 6:24;23:5</p> <p>including (1) 27:11</p> <p>income (1) 63:22</p> <p>inconsistent (1) 28:16</p> <p>incorporated (1) 21:3</p> <p>increase (1) 21:2</p> <p>incredible (1) 12:16</p> <p>indicated (1) 11:8</p> <p>individual (2) 37:7;57:25</p> <p>industrial (3) 27:3;32:19;37:25</p> <p>industry (3) 28:4;32:20;33:16</p> <p>information (4) 6:15;10:25;41:3;46:5</p> <p>Infrastructure (4) 10:19;13:9;27:16;33:6</p> <p>inhibit (1) 26:15</p> <p>initially (1) 65:20</p> <p>initials (1) 69:7</p> <p>input (2) 2:8;82:4</p> <p>inside (1) 29:19</p> <p>inspiring (2) 9:14,17</p> <p>installations (1) 20:18</p> <p>instead (1) 47:4</p> <p>in-stream (1) 69:6</p> <p>intakes (1) 21:12</p> <p>intend (1) 25:18</p> <p>intended (1) 11:21</p> <p>intent (2) 10:18;11:19</p> <p>interactions (1) 42:24</p> <p>interest (7) 25:11;43:22;55:11; 60:20;66:23;70:16;81:10</p> <p>interested (1) 70:19</p> <p>interesting (1) 4:21</p> <p>interests (2) 43:6;86:17</p>	<p>interpret (1) 10:21</p> <p>interpretation (1) 38:24</p> <p>interpreted (1) 38:13</p> <p>interrupt (1) 31:15</p> <p>into (22) 3:6;14:14;18:6;19:23; 21:4,11;25:18;31:7;41:5; 43:12;44:10;46:9;48:6; 50:6;53:13;74:25;75:7,7, 8;78:13;81:3;84:14</p> <p>introducing (1) 35:13</p> <p>invested (3) 30:8;42:1,2</p> <p>investment (1) 28:6</p> <p>investments (1) 30:7</p> <p>involved (5) 51:10;55:24;57:1; 59:24;77:8</p> <p>Ironman (8) 49:12,21,23;52:24,24; 61:5,13,18</p> <p>Ironmen (1) 48:6</p> <p>irresponsible (1) 74:11</p> <p>is (194) 3:22;4:6,7,21,22,24; 5:2,3,14,16,21,23;6:3,4,4, 23;7:8;8:10,11,11,24;9:2, 6,21;10:7,17,21;11:5,5, 17,21,23,25;12:7,16,18; 13:5,7,11,21;14:3,5,22; 15:5,11,15,19,25;16:9; 17:2,6,17,18,23;19:16,24; 20:10;21:25;22:4,11; 23:10,21,23,24;14:25;25; 26:6,16;29:1;30:14,19; 31:1,12;32:11,12;33:13, 14;34:12,15,18;35:21; 36:11,25,25;38:4,13,14, 16,23;39:5,14;40:1,4; 41:18,21;42:5,14,17,17, 25;43:11,23;44:3,15; 45:17,17,19;46:18,23; 48:1,8,13,19,23,23,25; 49:18,21;52:4,4,11,21; 53:8,8,24;54:16,17,18; 55:5,7,18,25;56:15; 57:12;58:19;59:1,8,16, 18;60:16;61:16,17;62:1, 14;63:6,7,12,22;64:18; 65:6,10;67:1,9,10;68:11, 24;69:7,10,12,25;71:17; 72:1,1,17,23;73:13,19; 74:15;75:1;76:16,18,21; 77:10,19,25;78:13,17,22,</p>	<p>24;79:2,5,21;80:1;81:15, 15,23;82:19;83:24;84:10, 13,14,19,23;85:1;86:9</p> <p>Isakson (2) 18:15;84:5</p> <p>isn't (3) 8:18;24:16;55:7</p> <p>issue (3) 9:25;25:17,20</p> <p>issues (5) 28:3,5;46:23;54:20,20</p> <p>it (146) 2:14;4:18,19;5:4,6,25; 8:20;9:17,20,22;11:5,10; 12:16;13:22;14:10;15:5, 18;16:7,8,22;17:10,22, 23;19:14,24;23:16,24; 24:4,12,20;26:16,25; 27:2;29:3,11,18,22,23; 30:1,3,4;37:19,19;38:17, 23;39:5,12;40:3,19,21,21, 24;41:1,12;43:17,19; 44:20;45:16,16;46:7,16; 47:5,10;48:20;50:7,7,7, 51:25,25;52:1;53:1,8,12; 54:14,18;55:8,25;56:8,8, 12;57:12,12,13,14,16; 59:8,12,19;60:20;61:19; 62:7,22;63:4,6,10,12; 64:6;65:4,5,7,9,22;66:1,2, 6,11,14;67:21;68:2,4,8; 69:12,15,23;70:24;71:22, 23;73:1,6,7,7,9,11;74:12, 19;76:13;77:19;78:1,7; 79:9,15;80:24;81:5,22; 82:5,18,22,23;83:1,5,7, 15;84:2,14,16,20</p> <p>it's (41) 2:7;4:21;9:14;11:8,12, 17;13:8;14:22,23;15:22; 19:25;24:17;33:1,11; 39:15;40:19;41:8,16; 44:14;47:15;54:21;56:4; 57:5,8;58:18;61:3,19; 62:17;63:10;67:12;68:3; 73:17,23;74:6;77:14; 80:10;81:8,18;83:8,16; 84:18</p> <p>item (1) 65:10</p> <p>It'll (1) 61:24</p> <p>its (6) 28:1;36:20;37:11; 61:11;64:25;65:1</p> <p>It's (12) 15:13;41:16;46:14,14; 47:4;48:9,17;61:2;62:7; 65:8,8;78:3</p> <p>itself (1) 8:13</p> <p>I've (3) 42:1,2;43:1</p>
---	---	---	--	---

<p>J</p> <p>JACKSON (3) 2:2;85:11,12</p> <p>Janice (1) 85:10</p> <p>January (1) 27:20</p> <p>jetty (1) 63:2</p> <p>JIMENEZ (3) 68:11,12;69:18</p> <p>job (1) 77:7</p> <p>jobs (2) 33:17,21</p> <p>Joe (6) 4:4;12:25;13:11,12,15; 84:7</p> <p>John (1) 3:12</p> <p>Jorge (1) 68:12</p> <p>Josh (1) 65:13</p> <p>Joyce (1) 45:14</p> <p>jump (1) 20:24</p> <p>junction (1) 2:7</p> <p>juries (1) 74:24</p> <p>just (49) 2:21;6:15;7:14;9:3; 11:10;12:6,11;14:3; 16:25;17:19,21,22,22,23; 23:6,14;30:3;31:1;38:6; 23:40;10:41;2,4,13;43:4; 44:14;45:3;47:7;48:9; 53:23;55:12;57:1;60:3; 14,21;61:16;65:4;67:20; 71:21;72:3,7,8;77:17; 80:9,17,22;81:5;85:12,12</p> <p>justify (3) 64:20,21;83:1</p>	<p>52:22</p> <p>Keith (1) 72:12</p> <p>Kemp (2) 18:11,18</p> <p>kept (1) 33:5</p> <p>kids (1) 78:11</p> <p>kill (1) 82:24</p> <p>kind (7) 7:5;33:11;43:18;44:1; 74:7;81:8;82:4</p> <p>kinds (1) 44:1</p> <p>knees (1) 22:11</p> <p>knew (1) 15:4</p> <p>knock (1) 78:14</p> <p>knocking (1) 77:21</p> <p>know (55) 2:19;4:5;11:8,20,22; 12:6;13:6;14:3,10,12,13; 15:19,21,21;16:4;18:1; 23:19;24:1,6,19;29:10; 33:9,11,16,21;34:2,4,6; 40:5,19;42:14;44:6; 45:20;55:13,15;57:3; 58:15;62:6,17;64:9; 66:18;67:3,19;68:18; 69:7,23;70:1,1;71:16; 77:6;80:14;82:18;83:15; 84:10,11</p> <p>knowing (1) 60:1</p>	<p>larger (1) 21:24</p> <p>largest (3) 49:20;61:17;83:25</p> <p>LASHER (3) 55:1,5,6</p> <p>last (10) 21:5;31:25;32:3;49:12, 21;63:4;72:20;74:1;75:5; 81:15</p> <p>late (1) 71:3</p> <p>later (2) 48:14;58:15</p> <p>Lauren (4) 15:25,25;16:6;55:25</p> <p>law (7) 11:13;44:14;50:6;84:8, 10,14,16</p> <p>Lawrence (1) 55:5</p> <p>laws (1) 20:7</p> <p>lawsuit (4) 39:19;84:19;85:1,5</p> <p>lead (1) 60:14</p> <p>leadership (1) 19:12</p> <p>leading (1) 77:6</p> <p>learn (2) 29:15,22</p> <p>learned (3) 25:4;26:7;65:25</p> <p>least (3) 32:1;36:5;67:13</p> <p>leave (1) 64:12</p> <p>left (3) 31:7;42:3;63:8</p> <p>legislation (5) 5:1;7:25;15:3,5;52:5</p> <p>legislators (2) 52:5;55:21</p> <p>legitimate (1) 21:16</p> <p>legitimately (1) 22:3</p> <p>length (1) 44:5</p> <p>less (4) 81:2,3;82:3;83:22</p> <p>lesson (1) 29:16</p> <p>let (9) 8:3;29:16;30:4;58:14; 64:11,15,18;66:11;68:17</p> <p>let's (5) 14:17;15:17;42:13; 76:7;80:17</p> <p>Let's (1) 83:1</p>	<p>letter (3) 13:15,18,19</p> <p>letters (2) 6:16;10:10</p> <p>letting (1) 29:12</p> <p>level (34) 10:22;11:1,14,16,21; 14:8;15:6;20:8;23:18; 26:14,19;27:3,12;33:2,4; 37:20;38:16,22;44:24; 47:19;48:1;50:3,5;56:22; 63:12;64:8,11,12,13,15, 16;65:7;66:6;79:14</p> <p>levels (1) 79:21</p> <p>levy (1) 78:5</p> <p>liaison (1) 69:4</p> <p>liberty (1) 59:6</p> <p>license (1) 69:5</p> <p>Lieutenant (1) 18:11</p> <p>life (10) 16:1;20:2;24:11;33:13, 14;38:2;42:1,3;48:14; 82:17</p> <p>lifecycle (1) 7:1</p> <p>lifespan (1) 77:15</p> <p>lift (1) 73:2</p> <p>like (46) 3:4;6:23;7:8,14;8:4; 9:3,9;15:21,24;17:1; 23:14;29:1,18;31:1,2,4,9, 23;33:11,22;43:10;44:4; 50:14;52:19;53:17;60:4; 61:22;63:23;66:8;67:21; 70:15,25;73:1,1,2,5,7; 74:14,15;75:2;81:8,19, 23;82:11;85:5;86:15</p> <p>likes (1) 29:10</p> <p>likewise (1) 21:7</p> <p>limit (1) 42:15</p> <p>Lindsay (1) 84:6</p> <p>Lindsey (1) 10:14</p> <p>line (2) 16:9;75:18</p> <p>list (1) 78:17</p> <p>listed (3) 56:23,24,25</p> <p>listen (6)</p>	<p>77:24;82:15;84:19; 85:1,4,15</p> <p>listened (1) 56:2</p> <p>listing (1) 34:22</p> <p>little (7) 16:24;56:7;60:23; 61:17;65:9;82:2,3</p> <p>live (24) 34:13;38:4;45:11,12, 25;46:1;47:8,14;49:10; 50:21;54:8;59:17;60:17; 65:14,14;67:17;70:10; 72:12;74:19;76:19; 78:22;80:7,18;82:7</p> <p>lived (3) 16:1;52:17;59:20</p> <p>livelihood (1) 45:19</p> <p>livelihoods (1) 30:6</p> <p>lives (2) 45:20,21</p> <p>lobbyist (1) 82:18</p> <p>local (4) 28:4;33:8;77:12;85:25</p> <p>located (2) 31:6;34:15</p> <p>Lock (47) 2:12;4:16,19;5:5;6:1; 7:20;9:19;10:5,15;13:10; 14:21;18:20;24:18;25:16, 23;26:24;28:15;32:25; 33:3,4;34:17,21;35:5,13, 19;36:6,11,19;37:10,18; 39:12,16;45:1;52:3,8; 63:25;64:9;68:23;70:16, 23;72:24;73:2,5,13,16; 76:5,7</p> <p>locks (9) 36:22;44:8;47:7,11; 64:10;75:25;76:1,14;78:4</p> <p>long (4) 46:11;48:13;82:21; 84:22</p> <p>longer (2) 53:20,21</p> <p>look (11) 15:8;29:17,23;42:4; 53:24;54:21;62:3;66:8; 74:25;75:16;81:4</p> <p>looked (3) 39:10;65:9;70:18</p> <p>looking (4) 16:18;23:16;60:2; 83:14</p> <p>looks (4) 29:1;67:21;75:1;81:22</p> <p>lose (5) 30:6,11,15;67:10,12</p> <p>lost (6)</p>
<p>K</p> <p>kayaker (1) 65:18</p> <p>kayakers (1) 44:4</p> <p>kayaking (2) 43:25;57:18</p> <p>keep (10) 40:25;41:7;45:16; 46:16;48:9;59:1,3;63:25; 78:11;81:10</p> <p>keeping (3) 7:20;32:25;39:12</p> <p>keeps (1)</p>	<p>L</p> <p>lack (2) 37:7;66:23</p> <p>ladder (4) 14:11;15:17;70:24; 73:3</p> <p>ladies (10) 9:5,13;42:11,12,12; 50:10;51:2;52:10;78:16; 85:9</p> <p>lady (1) 75:8</p> <p>land (2) 24:9;46:10</p> <p>Landing (4) 55:7;62:23;72:15;74:9</p> <p>Landon (1) 79:4</p> <p>language (1) 10:19</p> <p>largely (1) 11:5</p>	<p>legitimately (1) 22:3</p> <p>length (1) 44:5</p> <p>less (4) 81:2,3;82:3;83:22</p> <p>lesson (1) 29:16</p> <p>let (9) 8:3;29:16;30:4;58:14; 64:11,15,18;66:11;68:17</p> <p>let's (5) 14:17;15:17;42:13; 76:7;80:17</p> <p>Let's (1) 83:1</p>	<p>likes (1) 29:10</p> <p>likewise (1) 21:7</p> <p>limit (1) 42:15</p> <p>Lindsay (1) 84:6</p> <p>Lindsey (1) 10:14</p> <p>line (2) 16:9;75:18</p> <p>list (1) 78:17</p> <p>listed (3) 56:23,24,25</p> <p>listen (6)</p>	<p>longer (2) 53:20,21</p> <p>look (11) 15:8;29:17,23;42:4; 53:24;54:21;62:3;66:8; 74:25;75:16;81:4</p> <p>looked (3) 39:10;65:9;70:18</p> <p>looking (4) 16:18;23:16;60:2; 83:14</p> <p>looks (4) 29:1;67:21;75:1;81:22</p> <p>lose (5) 30:6,11,15;67:10,12</p> <p>lost (6)</p>

29:20;43:19;61:25; 62:4;77:22;80:16 lot (17) 7:5,21;40:3,5;41:3,3; 43:8,24;61:5,8;62:5;64:4, 6;68:14;69:14;71:18; 78:7 lots (1) 73:19 love (1) 23:15 Lowell (1) 51:9 lower (9) 8:14,22;11:7;26:21; 46:7;61:12;62:7;64:11; 66:14 lowered (4) 18:23;26:19;62:21; 63:4 lowering (3) 23:10;28:3;74:23	74:19 many (17) 2:6,6;3:25;29:14,14,14, 15,21;39:22;50:20,20; 53:17,18;60:21;73:21; 76:15,21 map (1) 81:19 Marcie (1) 76:18 Marina (1) 62:11 Marine (2) 49:11;52:15 market (1) 65:5 marketing (1) 63:18 Martha (2) 11:24,25 Martinez (1) 38:5 marvel (1) 14:6 master (1) 37:4 matrix (3) 22:21,24;39:9 matter (1) 74:25 maximize (1) 74:15 maximizing (1) 73:15 may (3) 2:21;37:7;48:11 maybe (7) 44:5,6;45:1;47:9;64:4, 23;82:3 Mayor (27) 3:10,21;6:20;9:11,11, 23;10:1;17:25;21:1;23:8, 8,14,19;25:5;32:8;45:9; 57:24;58:22,22;70:14,14; 71:2,5,11;72:10;82:8,13 mayordavis@augustagov (1) 31:25 mayors (4) 6:17,17;9:8;77:13 me (27) 9:17,19,20;10:2;11:18; 14:2;16:13;17:5;35:8; 42:6,11;43:13,18;47:15; 55:2;56:2,12;57:1;60:12; 61:3;62:20;63:17;66:17; 76:9;79:19;82:8;83:19 mean (12) 8:17;14:4,7;40:24; 56:5;68:2,20;70:22;72:4; 74:4;81:1,7 means (2) 30:22;36:5 meant (1)	68:19 measured (1) 46:6 measurements (1) 46:13 meet (2) 27:23;39:18 meeting (9) 4:11;13:16,24;16:3,12; 56:9;59:9;68:17,22 meetings (2) 9:25;38:10 meets (3) 36:6,20;37:11 Melanie (2) 79:3,5 Melinda (1) 78:22 member (3) 13:1;55:9;70:12 members (6) 4:3;13:21;19:2;33:7; 50:21;70:19 mention (2) 34:1,2 mentioned (5) 10:2;52:22,23;57:3,19 mentions (1) 38:16 messages (1) 12:13 met (3) 9:24;14:16,25 meteorologist (1) 79:10 method (1) 37:3 mic (2) 31:8;32:2 microphone (1) 25:6 microphones (1) 23:10 middle (2) 8:16;47:22 might (2) 12:20;22:22 migration (1) 73:18 migratory (2) 76:2,4 mile (1) 7:23 miles (7) 20:16;83:2,12,17,18, 22,22 million (19) 6:9,23;7:3;16:14,15; 30:12;49:22;63:23;64:3, 5,16,23;65:3;70:25;71:1, 14;84:21,22;85:7 millions (10) 27:5;28:6;29:20;30:9,	16;33:18,18;48:6;61:25; 77:16 mind (1) 77:23 mine (1) 61:22 Mine's (1) 60:23 minimal (1) 24:3 minor (1) 11:10 minute (3) 40:16,17;69:16 minutes (3) 31:14;42:16;56:3 misinterpreted (1) 11:19 miss (1) 3:7 missing (1) 82:10 mitigate (1) 27:12 mitigation (1) 27:24 modeling (2) 5:11,15 models (1) 26:9 modification (1) 40:20 money (9) 16:17;24:22,24;65:6; 67:11,12;71:8;75:1;84:23 MONTGOMERY (2) 34:12,13 morally (1) 19:25 more (21) 3:6;31:13;44:16,17; 48:11;49:24;53:8,9; 56:17;59:5;61:25;62:8; 65:25;66:2,16;73:21; 79:17;80:4;82:1,1,3 Moses (2) 32:6,11 mosquitos (1) 47:1 most (3) 46:17;57:5;83:10 motivates (1) 60:12 mouth (1) 15:1 move (8) 16:10;41:9;42:7;57:12; 62:25;63:2;67:8;69:24 moved (4) 41:13;52:13,19;80:9 MR (49) 4:14;7:12;9:5;25:2; 29:4;30:25;32:6,7,11;	33:11;34:12;38:3;40:16, 17;41:15,20,23;42:11; 47:13;49:6;50:10,14; 51:2,6,8;52:10;55:1,5; 58:5;59:16;60:16;63:14; 65:13;67:16;68:11;69:17, 18;70:7;71:6,12;72:10; 74:18;77:6,7;78:16;80:4, 6;82:6;85:9 MS (9) 2:2;42:19;45:7,14,24; 76:18;78:19;85:10,12 much (24) 5:16,16;10:7;17:24; 29:3;38:2;40:18;47:4,4; 49:17;51:1;53:8,9;59:14; 60:14;65:22;66:1,20; 71:8;74:17;75:2;78:21; 80:3;85:8 muddy (1) 43:1 mudflat (1) 28:9 mullet (1) 44:18 must (4) 10:21;27:24;51:3;52:6 mutual (1) 25:10 my (53) 15:1,2;18:1,5;22:25; 24:25;25:12,24;31:6,7; 32:11,11;34:12;38:4,10; 41:18,21,24;42:1,2,4,5,7, 22,24,25;43:4,6,8;52:11; 55:5;58:9;59:1,16,19; 60:16;67:16;68:11; 70:10;72:8;76:9,10,18, 20;78:22,24;79:2,2,3,4,5; 80:6;82:17
M				
made (4) 3:2;19:14;36:16;82:19 Magnolia (1) 49:9 mail (1) 12:4 main (2) 59:1;65:10 maintain (7) 6:13;10:11,22;15:6; 27:24;37:20;48:8 maintained (9) 9:22;11:4,15;14:5,24; 15:8;47:21;50:5;64:20 maintaining (3) 10:4,5;49:1 maintenance (2) 27:18;44:24 make (17) 7:4,10;12:5,23;22:13; 41:1;45:3;60:13;62:7; 66:6;67:6;73:3;76:13; 79:11;83:4,8;85:21 makers (1) 2:9 making (2) 70:24;83:25 male (1) 83:16 man (1) 69:18 management (2) 21:8;86:2 managers (1) 56:11 manner (1) 35:14 Manor (1)	N			
name (16) 32:3,10,11;34:12;38:4; 45:13;51:7;52:11;55:3,3, 5;59:16;60:16;68:11; 76:18;78:22 name's (1) 67:16 names (1) 80:4 name's (2) 70:10;80:7 narrow (2) 57:9;61:24 Nation (2) 10:20;27:17 National (13) 34:22;35:2;36:2,7,11, 13;49:8,15,16;74:20; 76:9,12;85:2 native (1)				

<p>52:17 Natural (1) 34:25 navigability (1) 28:17 navigable (1) 47:25 navigation (5) 21:23;28:21;38:19; 47:7;56:24 near (1) 76:20 nearly (4) 22:1;23:9;26:24;27:5 necessarily (1) 69:19 need (24) 16:4;43:20;44:2,22; 49:1,5;53:24;54:8,8,10; 55:20,23,23;60:15;61:10; 63:11;67:24;73:18,18; 78:13;79:1,7,8,19 needed (1) 6:13 needs (10) 9:22;21:2,11,21;22:2; 38:1;61:11;63:12;73:14; 80:3 negatively (1) 63:24 neighboring (2) 3:20;22:16 neighbors (1) 85:16 neither (1) 8:9 nervous (1) 74:4 never (1) 59:23 new (17) 6:15;18:20;21:4;25:23; 26:23;28:15;34:17; 35:12;36:5,19;37:10,17; 68:23;73:12;80:23;81:14, 21 news (2) 15:5;53:18 next (5) 20:25;42:17;78:17; 85:20;86:5 nice (1) 32:1 NIXON (4) 70:7,10;71:6,12 no (12) 4:19;14:21;30:18; 31:13;47:21,24;49:13; 53:20,21;71:11;80:1; 81:22 NOAA (2) 14:15;15:23 no-action (1)</p>	<p>4:23 Nobody (1) 40:11 no-brainer (1) 76:16 Noland (1) 32:12 Nominee (1) 74:21 none (1) 14:21 non-motorist (1) 44:3 noose (1) 84:12 North (26) 3:22;5:20;19:7,13; 23:20;24:25;25:15;27:6, 13;28:7,9;29:6,7;35:25; 48:3;50:18;51:4;58:8,17, 20;60:17;62:13;78:23; 81:3;82:7;84:3 Norwood (1) 51:19 not (67) 2:20;3:7;4:25;10:8,10; 11:9,12;15:4;16:11;19:8, 16,16;21:14,20;22:12,18; 23:2,6;24:21;26:16;27:1; 29:24;31:15,25;33:18; 35:15;38:14,23;41:1; 43:8,16;44:14;45:7,11; 46:20;47:7;48:17;49:22; 50:12;52:1,16;54:24; 57:16;59:2,4,6;60:1;61:2, 16;62:17;63:3,5,9;64:7; 65:22;68:4;73:4,11;74:6; 77:5,20;79:13;80:13,19, 22;82:10;85:4 nothing (9) 15:4;28:25;29:2;38:15; 42:3;46:25;48:19;66:22; 81:13 notice (2) 3:6;6:2 noticeable (1) 24:6 noticeably (1) 18:13 novel (1) 77:4 November (1) 6:7 now (37) 2:6;4:10;6:15,23;8:6; 9:6;24:11,24;35:23;39:6, 14,25;40:25;43:10;52:13; 53:16;54:2;55:18;60:25; 62:9,20;65:9;68:3;69:1, 15;71:1,3;73:9,24;74:5; 75:14,25;77:2;78:17; 84:9,15,24 nowhere (1)</p>	<p>76:20 nuclear (1) 32:24 number (8) 15:13;39:14;47:23; 49:18;52:18;59:17;71:1,1 numbers (7) 6:17;7:6;16:12,18; 21:7;22:22;60:2 numerous (2) 38:12;39:19 <p style="text-align: center;">O</p> O&M (3) 6:11,24;48:13 object (1) 72:23 objective (1) 4:11 objectives (1) 27:16 objects (1) 36:4 obliged (1) 68:20 observe (1) 57:15 observed (1) 26:4 obviously (2) 24:7;85:17 occasion (1) 2:4 occasions (1) 38:12 occurred (1) 26:11 Ocean (1) 36:24 October (1) 70:13 of (360) 2:2,5,13,16,22;3:1,1,4, 25;4:3,4,9,10,11,12;7:3,5, 5,13,15,18,20,23;8:5,6,9, 9,15,16,17,19;9:15,15; 10:3,4,18,19,22,23;11:1, 15,17,18,19;12:6,15,20; 13:6,7,9,16,21,25;14:4, 19,25;15:1,6,10,14;16:1, 3,21,22;17:1,2,7,17;18:1, 19,21;19:3,6,7,10,13,15, 17,19,21;20:5,7,8,11,15, 16,18,19;21:1,8,10,17,18, 24,25;22:2,9,15,17;23:6, 13,19,21,21,25;24:17,18; 25:3,9,10,14,21,22;26:8, 10,15,23;27:2,6,10,18,25; 28:6,6,13,20;29:6,7,11, 12,20,20;30:5,8,9,10,15, 16,18,21;31:2;32:4,15,21, 25;33:1,5,8,11,12,15,17,</p>	<p>18,24;34:15,20,22,25,25; 35:1,5,8,9,12,21;36:2,12, 17,18,20;37:2,3,4,9,11, 13,16,24,25;38:1,7,9,10, 18,21,24,25;39:6,15,18; 40:3,5,19,20;41:3,3,13; 42:23;43:3,3,8,14,15,18, 25;44:1,1,4,5,17,21;46:4, 6,10;47:2,4,15,19,19,22, 23;48:2,6,12,15,16,18,24; 49:2,14,16,17;50:22; 51:4,13;52:2,18,20;53:2, 3,5,16,17,18,18,22,25; 54:14,23;55:8,9;56:9,17; 57:14,20;58:8,11,12,17, 18,19,21,22;59:23;60:21; 61:1,5,8;62:2,5;64:4,6,21, 25;65:2,11,22,25;66:18, 20,21,23,24;68:14,21,22; 69:5,12,14;70:1,6,12,12, 21,24,24;71:18,22;72:5,5, 5,14,14,19,21;73:12,15, 16,19,20;74:2,7,11,21,22, 25;75:10;76:1,2;77:10, 12,14,15,16,16,20,21; 78:2,7,7,9;79:14,17,20, 22,25;80:10,14,15,23,24; 81:8,16,24;82:4,16,20; 83:10,13;84:1,2;85:14, 16,19,20,21,22;86:4,7,8 off (2) 3:8;22:10 office (7) 11:23,25;16:5;36:10; 40:8;55:21;56:1 official (1) 18:6 officially (1) 27:21 officials (6) 3:5,9;51:3;60:5,10; 86:3 often (2) 14:2;43:18 Oh (4) 51:8;69:18;72:5;84:13 Okay (17) 4:6,14;15:22;40:17; 41:16;42:1,16;45:6,18; 50:12;62:14;71:12; 76:13;80:20;81:5;84:19, 23 old (3) 36:5;62:4;81:20 on (115) 5:24;6:25;7:10;8:5,12, 25;9:24;10:9,23;11:15, 23;12:3;13:1,10;14:8,14; 15:4;16:8;17:11;18:12; 19:21;21:7,15;22:4,6,21; 23:13;24:9;25:6,10,23; 27:7;28:2,15;29:7,19; 30:12;32:17,20,22,33;19,</p>	<p>20;38:8,11,23;39:2,17, 19;40:2,4;41:24;42:21; 43:9;44:12,19;45:11,12; 46:1;47:8,23;48:14; 49:24;51:23;52:6,7;53:6, 10,19,19,25;55:7;56:3,18, 22;58:16;59:8,12;60:9, 18,22,23,24;62:18;63:10; 64:1,5,5,7,16,17;65:18; 67:2,8,23;70:20;71:9,14; 72:19;74:5,19;75:3; 76:22;77:5;78:8;79:9; 80:8,18,24;81:10,12; 82:9;83:2;84:2,5;86:6 once (1) 57:7 on-demand (1) 20:21 one (38) 2:19;4:3;7:18;8:5,9; 10:3;12:7;17:2,5;18:3; 20:18;23:1,1,2;39:13,15, 17;40:16,17;41:23;44:14; 45:19;46:6;49:18;55:13; 56:17;57:20;58:19; 59:17;61:1;67:11;69:16; 71:20;73:20;79:22; 80:10;82:24;84:20 ongoing (1) 64:19 only (17) 8:24;20:18;30:14; 35:18;40:1;46:10;56:13, 19;68:18,24;69:11,24; 73:20;77:24;81:11;84:18, 25 open (5) 8:3,16;14:10;64:13; 75:12 operational (1) 28:3 operations (1) 26:16 opinion (1) 24:25 opportunity (7) 10:12;31:20;62:24; 72:11;73:16;82:23;85:17 optimal (1) 26:16 option (27) 5:2;8:25;15:9;25:23; 26:3,18;27:21,22,22; 28:23;29:1;30:12,14,14; 37:16;39:8,8;40:1,2,5,12, 18;44:11;47:18;48:11; 53:20,21 options (8) 15:10;39:6,24;43:20; 45:4;53:10,25;54:22 or (43) 4:19;6:22;7:19,22;8:1, 21,24;11:10;12:5;13:14;</p>
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<p>16:4;17:7;19:24,25;20:1; 22:10;23:13;27:17;31:16; 24;33:9;37:2,3,4,5;41:5; 44:7,16;52:16;55:19; 56:17;57:10;60:9;63:8; 64:21;65:1;66:11,22; 67:12;73:1,2;80:16;85:3</p> <p>order (2) 25:10;77:10</p> <p>organized (1) 51:14</p> <p>original (2) 4:15;8:9</p> <p>originally (1) 19:23</p> <p>other (23) 20:22;28:2;29:19; 30:12;39:22;46:22,22; 50:12;53:10,13,14,14,25; 54:20,21;56:19;57:17; 58:14,15;69:25;73:21; 76:3;83:14</p> <p>others (4) 61:9;76:21,22;77:8</p> <p>otherwise (2) 28:25;30:15</p> <p>our (99) 2:5,11,12,12;3:8,20; 4:11,12;9:7,8;11:22,25; 16:2,5;18:7,12;19:8;20:2, 2,2,2,24;21:4,11,12,13, 15,17;22:4,9,15;23:22; 24:14;29:9,19;33:12; 36:17;43:2,4,21,24;44:2, 19;45:2,10;46:7,10;48:7, 10;49:1,17;50:24;51:14; 52:5,21;53:4,5,7,11;54:9, 11;55:14,19,19,20,21; 56:4,8,21;57:11;58:1; 59:7,7;60:4,10;67:22; 72:17;74:16;75:5,6,21; 76:24;77:1;78:14,25; 79:1,9,14,20,21;80:2; 82:11;85:11,18,23;86:3, 4,9,10</p> <p>ours (4) 55:18;57:4;63:3;85:7</p> <p>ourselves (2) 42:13;54:13</p> <p>out (38) 4:22;5:8,25;7:14;8:8, 19;9:3;12:19;13:25;15:1, 10;18:4;31:5;41:2,3; 42:7;53:24;61:4,4,9,14, 16,22,23;62:2,10;64:11; 66:11;67:6;68:3;70:1,24; 75:4,17;77:21;78:1; 85:13;86:14</p> <p>outfall (2) 26:14,21</p> <p>outside (1) 33:24</p> <p>over (21)</p>	<p>2:19;7:20;8:1;20:15, 25;25:9;27:22;30:16; 31:2;34:6;35:23;37:22; 41:13;51:15;57:14; 58:13;60:25;64:3;70:21; 75:12;79:3</p> <p>overall (1) 38:1</p> <p>Overland (1) 34:13</p> <p>overview (1) 4:11</p> <p>own (5) 42:5;45:21;54:9;60:19; 68:12</p> <p>owners (3) 72:14,18;74:9</p> <p>oxygenate (1) 84:21</p>	<p>passionate (2) 16:25;42:14</p> <p>past (4) 27:20;44:8;50:15; 66:20</p> <p>path (1) 20:11</p> <p>patterns (1) 36:17</p> <p>Pavilion (1) 44:7</p> <p>pay (5) 12:14;63:9;67:24; 71:21;74:10</p> <p>paying (1) 25:1</p> <p>peace (1) 72:8</p> <p>Penix (2) 63:14,14</p> <p>people (38) 2:11;12:22;29:6;30:5; 34:9;39:3;40:3;41:4,7; 43:8;45:19;47:7,8,9; 51:15,16,22;54:5,15,19; 55:21;56:5;57:13,14; 58:23;62:3,24;64:7;66:1, 21;67:24;71:18,24;72:1; 76:3;77:25;78:8;84:3</p> <p>percent (4) 20:24;21:3,24;22:2</p> <p>Perdue (2) 18:15;84:6</p> <p>period (7) 14:24;31:3;34:7;37:2; 64:17;86:7,12</p> <p>permanent (1) 42:7</p> <p>permits (1) 21:13</p> <p>permitted (1) 31:19</p> <p>person (6) 9:18;10:6;31:13;40:11; 42:17;70:17</p> <p>personal (1) 72:16</p> <p>personally (2) 57:1;74:10</p> <p>persons (1) 12:12</p> <p>perspective (2) 63:20;76:21</p> <p>pest (1) 46:24</p> <p>petition (1) 51:23</p> <p>Pettit (9) 3:22;6:20;9:12;10:1; 21:1;23:8;25:5;58:22; 70:15</p> <p>photos (1) 35:7</p>	<p>physical (3) 10:22;11:14,20</p> <p>picture (3) 41:18,21;42:5</p> <p>pictures (3) 7:13;41:11,15</p> <p>pieces (1) 78:5</p> <p>pile (3) 7:23;8:15;73:10</p> <p>pink (1) 59:18</p> <p>pipefitters (2) 33:10,13</p> <p>pipeline (1) 20:16</p> <p>place (6) 7:18;14:22;35:23;38:5; 69:8;79:23</p> <p>Places (3) 34:23;36:3;53:14</p> <p>plan (15) 4:15;10:10;11:6;21:4, 6,10,14;22:7;30:12;46:9; 67:11,12;71:14;81:17,18</p> <p>plans (1) 73:25</p> <p>Plant (2) 26:12,16</p> <p>please (9) 31:5,7,15,19,22;32:3; 42:15;51:7;55:4</p> <p>pleased (2) 4:2;51:1</p> <p>Plumbers (3) 33:8,9,14</p> <p>pm (1) 12:10</p> <p>pm] (1) 86:19</p> <p>pocketbooks (1) 72:17</p> <p>podium (2) 2:19;31:6</p> <p>point (8) 4:21;7:4,14;9:3;10:17; 12:19;41:2;62:23</p> <p>pointed (1) 4:22</p> <p>poison (1) 84:12</p> <p>Policy (1) 85:3</p> <p>pool (38) 8:14,22;10:5,11,21; 11:4,7;14:4;15:6,7;19:2, 21;21:18,21;26:15,18; 27:3,12,18,24;32:18; 33:2;35:24;37:20,23; 38:18;39:3;40:13;44:24; 48:1,8;50:4;56:22;61:11, 24;74:13;79:2,8</p> <p>poping (1)</p>	<p>43:25</p> <p>population (2) 20:25;21:24</p> <p>port (3) 15:12,13,15</p> <p>portion (2) 16:22;48:12</p> <p>Ports (2) 18:17;70:4</p> <p>positive (1) 12:22</p> <p>possess (1) 37:4</p> <p>possibilities (1) 86:4</p> <p>possibility (1) 22:7</p> <p>possibly (1) 70:23</p> <p>post (1) 53:19</p> <p>postal (1) 12:4</p> <p>posted (1) 53:19</p> <p>poster (1) 44:15</p> <p>pound (1) 52:6</p> <p>pour (1) 79:15</p> <p>pouring (1) 78:13</p> <p>Power (5) 32:22;64:4,6;73:22,24</p> <p>powerboat (1) 57:19</p> <p>Practically (1) 62:13</p> <p>praise (1) 51:3</p> <p>predict (1) 79:10</p> <p>predicted (3) 5:11;6:12;26:5</p> <p>predicting (1) 5:15</p> <p>preferred (4) 5:2;6:8,10;7:2</p> <p>premise (2) 84:13,14</p> <p>prepared (1) 86:11</p> <p>present (5) 6:20,22;7:2;31:9;64:9</p> <p>presents (1) 7:11</p> <p>preservation (6) 28:20;34:24;35:2,11; 36:10,13</p> <p>preserve (3) 27:11;37:17;78:14</p> <p>President (2)</p>
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<p>14:2;51:24 pretty (4) 43:1;66:20;69:24; 83:19 previous (2) 24:21;56:9 prey (1) 83:13 price (2) 6:22;25:1 priced (1) 6:8 primary (1) 27:15 Prior (2) 59:20;82:17 privileged (1) 3:19 probability (2) 68:21;69:16 probably (6) 4:17;24:11;55:8;56:2; 57:11;84:23 problem (4) 4:17;16:16;63:3;74:7 problems (1) 17:3 proceed (2) 4:10;68:19 process (2) 16:11;17:14 production (1) 32:21 products (1) 32:21 program (3) 64:14,18,19 prohibiting (1) 28:12 project (6) 15:23;16:20;20:4; 25:10;27:24;39:15 projected (1) 6:14 projection (1) 33:25 projections (1) 21:4 projects (2) 20:24;76:23 project's (1) 22:4 promise (1) 63:7 properly (1) 63:5 properties (2) 36:14;37:1 property (15) 29:21;41:19,22;42:4,6; 45:22;48:21;60:18,19; 62:25;63:7;68:6;80:16, 25,25</p>	<p>property's (1) 67:25 proposal (1) 81:14 protect (1) 54:11 protected (2) 38:17,18 protection (2) 2:16;20:23 proud (6) 50:22;58:12,17,18,21; 70:11 prove (1) 24:2 provide (5) 24:24;31:4,14,23;73:11 provided (3) 22:19,24;23:17 provides (2) 11:14;22:1 providing (3) 12:8,13;20:20 provisions (1) 35:1 proviso (3) 28:12,18;58:9 public (8) 2:8;19:3;31:4,14; 43:16;45:8;50:12;82:4 pull (1) 8:18 purchased (1) 24:11 purpose (2) 68:24,24 purposes (4) 37:25;54:17,24,24 pursue (1) 22:12 pursuit (1) 69:5 push (2) 44:23;55:22 put (18) 4:17;7:18;8:15;16:21; 23:4;47:3;58:9;64:10; 67:23;71:13;73:10;79:12, 25;80:2;81:21;83:21; 84:8,14 putting (4) 23:5;28:5;82:9;84:2</p>	<p>68:9 quo (1) 26:2 quote (1) 28:19</p> <p style="text-align: center;">R</p> <p>race (3) 61:6,17,18 races (1) 57:19 rain (1) 79:16 rainfall (1) 79:17 rainy (1) 14:9 raise (6) 8:12,21;25:6;55:19; 56:21;80:22 raised (6) 34:6;42:20;49:8,15; 66:7;74:13 rally (1) 30:20 Ralston (1) 18:12 rambling (1) 56:3 ramifications (1) 43:14 ramp (4) 7:19;8:1;62:11,13 ramps (1) 62:10 ranking (1) 13:1 Rapids (1) 44:7 rates (1) 81:11 rather (1) 22:18 rationale (1) 71:17 reach (1) 8:18 reactors (1) 32:24 read (3) 25:18;32:9;81:17 reading (2) 59:25;66:2 real (5) 17:4;22:7;25:24;63:18; 69:11 reality (2) 21:17;24:8 really (14) 2:10;8:24;9:14,17; 10:1,6;24:6,16;45:18; 46:3;53:23;60:4,13;68:25</p>	<p>reason (7) 8:11;17:16;67:1;78:24; 79:5;80:1,2 reasons (2) 79:22;80:10 rebuilt (2) 73:1,17 recall (1) 70:25 received (1) 6:16 recent (3) 24:1;25:21;28:24 recently (2) 71:10;80:9 recognize (3) 3:4;25:12;55:17 recommend (1) 74:24 recommended (3) 5:23;11:6;35:11 record (6) 2:22,25;18:6;25:18; 32:9;74:22 recorder (1) 31:9 recreation (15) 21:22;27:4,19;32:19; 38:1,20;40:14;43:23; 47:2,20;56:25;57:17,21; 64:23;71:19 recreational (3) 28:5,22;48:21 recreationally (1) 62:3 redoing (1) 71:9 referenced (1) 86:8 references (1) 28:18 referred (2) 18:5,24 refers (1) 59:19 reflect (1) 21:16 regarding (1) 18:20 regardless (3) 6:21;46:14;47:2 regards (2) 25:16,20 regatta (4) 57:6,11;61:6,20 Regattas (1) 48:5 region (4) 48:10;49:2;75:20; 79:19 regions (1) 53:14 Register (4)</p>	<p>34:22;36:2,8,12 regular (1) 40:10 regulations (2) 8:12;20:8 rehab (1) 5:24 rehabilitated (2) 37:18;47:12 rehabilitation (2) 27:10;35:12 related (2) 56:11,12 relationship (1) 65:1 relatively (1) 66:15 relevant (1) 35:9 reliability (1) 26:8 relies (1) 21:7 rely (5) 19:21;32:17,20,22; 33:20 remained (1) 33:3 remaining (1) 80:5 remarkable (1) 12:18 remarks (2) 4:1;85:10 remember (2) 78:3;83:11 remove (1) 16:20 removes (1) 5:4 repair (6) 16:14,17;27:10;47:6; 71:21;82:23 repaired (5) 14:23;33:5;47:11; 72:21,22 repairing (2) 39:16;70:22 repairs (1) 4:19 repeat (2) 68:16;80:14 replace (2) 18:22;74:6 replaced (2) 73:1,17 replacement (1) 71:22 replacing (1) 74:2 report (2) 35:9;86:5 reporter (1)</p>
---	--	--	---	---

2:24 represent (8) 29:5;33:7;37:3,5;56:6; 58:7;72:13;86:17 Representative (4) 32:13;46:4;58:2,3 representatives (6) 3:20;10:15;38:11; 45:10;77:12;78:20 representing (1) 25:8 represents (2) 4:7;25:14 requesting (1) 27:1 required (1) 35:14 requirement (2) 27:23;36:7 requirements (1) 39:18 requires (2) 84:10,16 research (1) 43:2 reside (1) 49:9 residence (1) 32:4 resident (1) 32:15 resistance (1) 82:3 resolution (2) 27:1;39:1 resources (4) 20:22;35:1;54:12;86:2 respond (1) 7:7 rest (1) 58:10 result (2) 20:7;21:1 results (2) 13:25;26:18 retained (1) 7:9 returnee (1) 70:7 revealed (1) 6:6 revealing (1) 35:6 revenue (2) 34:2,6 review (1) 15:24 reviewed (1) 21:13 Richmond (4) 37:22;58:24;60:24; 70:8 Rick (3)	4:6;10:8;45:9 rid (3) 24:18;64:21;69:12 right (28) 9:5;13:17;17:18;20:1; 30:25;31:7;40:25;41:16; 43:10;47:16;49:15; 52:25;53:7;54:13;55:25; 57:24;67:8,15;71:3; 73:24;75:14,18,25;79:3; 80:8,21;84:17;85:18 rip (1) 83:3 rise (1) 79:17 risk (2) 28:6;83:22 risks (1) 27:13 river (101) 2:13;5:4;8:16;9:15; 11:2;19:4,15;22:1;23:1; 24:12;25:9,22;29:7,12, 16;30:7,9,22;32:16,17,20, 23;33:6,15,19;34:10; 36:23;41:10,12;42:22; 44:5,19;45:11,12,12,16; 46:1,21;47:8;48:4,17,19; 49:11;50:21;53:5;54:23; 55:8,11,19;57:12,18; 58:2;60:19,21,25;61:1, 11,12;62:2,6,8,21;63:11; 64:1,3,8,25;65:7,17,18; 66:18;68:8;69:3;72:6; 73:10;74:11;75:3,5,6,16, 16;76:8,8,20;77:1,13,17; 78:14,23,25;79:1,1,8,8, 14,16,21;80:8,9,18;83:18 riverfront (12) 19:8;24:10;27:7;28:7, 8;55:6;59:2,4;62:11; 67:17;72:13;74:16 Riverkeeper (5) 39:21;40:4;70:3;84:20; 85:6 Riverkeeper's (1) 40:8 riverkeepers (1) 45:23 River's (1) 20:13 riverwalk (2) 46:20;78:6 Riverwood (1) 74:19 Road (3) 34:13;52:12;76:19 Robertson (5) 7:8,12;18:8;77:6;85:24 rock (16) 5:4,6;7:19,22,25;40:20; 56:14;64:2,17,22;66:4, 13;67:7;69:22;73:9;	79:12 rocks (2) 7:23;8:15 room (4) 3:7;47:24;58:1;84:3 rope (1) 83:14 rostrum (1) 52:7 Rowing (5) 48:5;55:9;57:2;61:6,20 Roy (4) 9:18;17:5,8,11 rules (1) 31:2 run (3) 29:12,16;30:4 running (1) 47:21 Ruthven (1) 11:24 <p style="text-align: center;">S</p> sacrifice (1) 20:1 saddle (1) 77:21 Safe (2) 44:3,24 safely (1) 57:10 safety (3) 20:3;61:15,22 said (24) 9:20;13:19;14:3;16:13, 16,16;17:5,8;24:4;29:24; 33:12;39:2,11;46:8;56:4; 58:18;62:23;63:1,3,5; 68:16;74:1;77:10;80:13 salvage (1) 67:13 salvageable (1) 67:14 same (13) 14:8;21:21;22:20; 38:22;39:10;47:19;61:13, 20;64:5;66:15,15;68:14; 81:13 Sammie (1) 3:16 SANCKEN (3) 45:7,14,14 sat (3) 39:23;79:15,16 sausage (1) 82:19 Savannah (46) 9:15;11:2;18:20;19:4; 20:3,13;23:7,24;25:21, 23;26:24;28:15;32:16,17, 20,23;33:3,6;34:17; 35:12;36:6,19,23;37:10,	17;39:21;40:4,7;42:22; 44:6,19;46:3;47:9,22; 48:25;49:11;51:14;55:14, 19;57:18;68:23;69:3; 73:13;82:25;84:1,22 Savannah's (1) 20:17 save (9) 9:2;39:3;40:22;51:14; 55:13,19;64:16;70:16; 79:1 savings (3) 24:11;42:2,3 saw (9) 5:16;9:21;24:7,9; 26:10;39:8;48:19;52:5; 67:19 say (13) 7:4;15:22;47:3;48:16; 54:5;55:12;59:7;69:25; 72:8;80:17;84:9,15;86:15 saying (1) 55:16 says (7) 8:13;9:2;14:2;36:14; 38:17;56:8,8 SCHAEFER (2) 72:10,12 Schroeder (3) 78:18;80:6,7 science (1) 65:24 score (1) 39:10 scored (3) 5:22;6:5;22:20 Scott (2) 10:13;84:7 SCUBA (1) 60:24 Sean (1) 3:11 sear (1) 48:7 season (1) 14:9 seawall (2) 67:22;68:2 second (4) 7:21;49:20;61:17; 83:24 Secretary (1) 13:16 section (1) 73:12 security (1) 61:15 see (15) 9:14;12:16;19:17; 22:22;29:17;41:11;57:13, 14;67:1;71:1;74:12,15; 75:15;78:12;80:19 seem (1)	69:15 seen (7) 21:20;28:24;39:5;40:6; 41:15;42:22;75:4 seismic (1) 75:4 select (1) 37:16 Senator (5) 10:13,13;51:20;84:5,6 senators (3) 18:12,14;77:11 sense (4) 14:3;17:19,23;48:9 sensitive (1) 35:14 sent (1) 51:25 separate (3) 8:1;13:8;50:17 serious (3) 68:1,6;78:1 serve (2) 37:24;54:16 serves (1) 25:13 service (1) 19:23 Services (1) 13:2 set (3) 64:13;73:23;74:22 settle (1) 45:5 settled (2) 39:19;84:20 several (4) 54:5;62:10;66:13; 80:12 shad (1) 44:18 share (1) 2:8 sharing (1) 17:21 she (4) 16:1,7;56:2,4 She's (1) 56:1 sheets (2) 2:18;31:6 SHEP (4) 4:15;13:7;24:24;76:14 Shoreline (2) 45:15;82:7 should (13) 11:4,17;13:22;22:6,8; 26:4;40:23;42:6;44:9; 65:7;69:19;80:2;85:7 Sias (1) 3:16 side (7) 5:25;18:13;23:13;25:9;
--	--	--	---	--

29:7;39:17;64:5 sides (4) 14:8;66:12;72:5;77:12 sign (1) 49:23 signed (3) 2:20;50:6;51:22 significance (2) 34:19;35:22 significant (7) 28:2;35:16;36:16;37:6, 12,12;56:15 significantly (2) 19:9;46:19 sign-in (2) 2:18;31:6 sign-up (1) 78:17 silently (2) 22:12,16 Simkins (1) 9:18 simply (2) 11:12;39:17 simulate (1) 25:22 simulated (1) 26:3 simulation (4) 19:2,9,16;24:1 since (10) 14:5;16:2,2,2;19:22; 51:11;68:8,9;69:2;70:12 sinkhole (3) 75:7,8,9 sinkholes (1) 75:9 Sir (3) 40:16;51:6;69:17 sit (1) 75:3 sites (1) 36:3 sitting (5) 3:10;24:9;47:23;78:9; 79:2 situation (2) 18:19;51:11 situations (1) 66:21 slightly (1) 48:11 sluiceways (1) 66:10 small (1) 26:10 smaller (1) 61:21 Smith (4) 3:24;25:13;29:4,5 So (94) 2:20,21,22,22,25;3:7; 4:15;5:11,19;6:2;7:1,4,	17;8:2,6,8,15,19,23;9:3; 10:7;12:11,18;13:11,23; 14:10;16:3,24;20:3; 22:25;23:15,24;30:19,25; 32:15;33:22;34:8;38:21; 39:16;41:2;43:15,18,20; 44:4;45:3,17;46:12; 48:13,19,23;50:22;52:4, 25;53:8,9,22;54:15; 55:10;56:6,7,19;57:16; 59:4,11;60:20;61:21; 63:11;66:6,12,25;67:4,7; 69:24;71:16,19;74:6,9; 76:11,21;77:2;78:5,9,14, 21;79:24;80:9;81:11,13; 82:19,23;83:3;84:13; 85:18;86:9 socks (1) 78:2 solution (8) 26:17;47:16;48:7,24; 49:3;69:15,19,20 some (27) 6:15;13:25;14:17;15:8; 17:1;31:2;38:7,10;41:7; 53:25;54:6,15;55:10; 56:22;58:4,14,15;59:5, 10;66:17;68:1,6;69:1,13; 72:21;75:10;79:19 somebody (2) 41:9;60:10 somehow (1) 15:2 someone (2) 31:20;63:1 something (12) 6:23;40:7;44:10,22; 52:21,23;56:7;62:9; 63:23;70:25;72:1;85:3 somewhere (2) 4:5;69:20 sorry (1) 51:8 sort (2) 7:14;70:21 SOS (2) 51:14,23 South (23) 3:21;4:4;9:16;19:14; 23:20;28:11,12;34:20; 39:20;45:9;50:19;51:15, 16,20;52:16,18;58:10,12; 59:1,2,6,12;65:15 Southern (1) 32:22 spanning (1) 5:4 spawn (3) 69:9;76:14;83:16 speak (3) 2:24;31:7,20 Speaker (12) 18:12;31:15;32:10;	41:17,18,21,24;42:9; 45:13;55:3;74:1;77:9 speaking (2) 43:17;45:8 special (2) 9:7;21:23 specialists (1) 56:12 specializes (1) 86:1 species (7) 21:18;24:14;42:23; 44:14,17;54:4;68:23 specific (3) 38:16,22;66:3 specifically (1) 38:17 specifics (1) 40:19 speech (1) 85:18 spend (1) 72:18 spent (3) 27:5;38:25;71:9 spinning (1) 82:11 split (1) 75:11 spoke (1) 51:19 spoken (1) 14:15 stakeholders (2) 19:3,13 stand (2) 22:12;84:15 standing (2) 70:3,5 standpoint (1) 65:5 start (5) 3:8;38:6;54:3;55:12; 78:1 started (6) 3:3;24:4;29:19;44:20; 54:2;66:2 state (5) 32:3;36:9;50:4;53:13; 77:11 stated (1) 31:21 statement (1) 31:17 States (9) 13:5;17:3,7;18:21; 34:20;37:24;39:20; 52:14;77:3 stationed (1) 52:14 status (1) 26:2 stay (3)	14:22;61:11;63:12 stayed (3) 52:15,17;85:14 Steamfitters (2) 33:8,10 step (3) 9:4;12:7;20:10 Stephen (1) 78:18 STEPHENS (2) 67:16,17 steps (2) 85:20;86:5 Steve (3) 60:16;80:7;82:6 still (8) 2:21;21:20;40:13,14; 41:10;61:13;66:15;72:21 stocking (1) 21:17 stone (1) 82:24 stood (1) 22:16 stopper (1) 74:22 straight (1) 75:18 strategize (1) 10:10 stream (1) 80:20 Street (12) 5:12;11:2;34:16;49:16; 55:18;59:17;62:11; 63:15;64:1;68:12;70:11; 74:19 striped (1) 69:23 strong (2) 25:16;43:22 structure (6) 8:1;26:21;34:18;35:16, 21;66:3 structures (3) 36:4;37:14;66:9 stuck (1) 39:25 studied (5) 14:12,12,13;65:23;76:4 study (2) 35:17;66:19 stuff (5) 44:1;59:5;62:3;65:25; 69:2 stupid (1) 61:8 Sturgeon (6) 44:15;68:22;83:2,6,16, 21 subject (1) 60:9 submission (1)	86:11 submit (4) 23:4;25:19;35:20; 57:22 submitted (3) 32:8;52:2;57:23 subordination (1) 13:22 substantial (1) 47:23 succeeded (2) 69:20,21 success (1) 65:11 such (4) 12:22;37:18;48:5; 59:24 sue (1) 85:2 suffer (1) 75:9 sufficient (1) 28:20 sufficiently (1) 57:10 suit (2) 70:3,6 summarily (1) 8:8 summarizing (1) 35:5 superior (1) 8:24 supply (7) 21:15;27:19;28:21; 37:25;38:19;40:15;56:24 support (9) 21:21;22:17;32:25; 33:15;61:14;66:4,25; 67:4,4 supported (1) 27:10 supports (1) 75:22 supposedly (1) 72:2 sure (6) 2:20;18:18;30:3;45:3; 60:7;78:7 surface (4) 5:10;26:1,15;60:22 surgeon (1) 69:9 surrounding (1) 35:19 Survey (1) 11:1 survive (1) 54:13 survived (1) 68:9 Susan (1) 45:24
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<p>sustain (2) 54:9,13</p> <p>swim (2) 76:11;83:8</p> <p>swimming (1) 60:22</p> <p>switch (2) 56:13,20</p> <p>sworn (1) 10:3</p> <p>Syms (3) 49:6,6;50:14</p>	<p>terms (1) 86:3</p> <p>test (1) 30:2</p> <p>text (1) 3:1</p> <p>than (13) 5:10,17;22:23;26:5; 31:13;43:13;46:8;53:8,9, 11;73:21;76:22;81:18</p> <p>thank (50) 4:9;7:12;9:4;12:24; 13:12;17:15,20,20,23; 18:3;23:11;25:1;29:3; 30:23;32:4;34:10;38:2; 45:6,7,8,9,10,23;47:12; 49:5;50:12;51:1;52:9; 54:25;55:1;57:23;58:5; 59:14;60:14;63:12;67:15, 18;68:10;70:15;72:9,10; 74:16;76:16;78:19,21; 80:3;82:5,8;85:7,13</p> <p>thanks (2) 17:11;59:15</p> <p>that (314) 2:7,13,25;3:2,4;4:18, 20,22;5:9,11,21;6:3,6,19, 21,23;7:4,4,7,11,14,15; 8:6,8,11,11,18,23,25;9:1, 2,3,21,23;10:2,3,6,8,9,17, 18,21;11:8,12,14,16,18, 20,22;12:3,4,6,11,13,13; 13:19,21,24,25;14:12,12, 13,15,20,21;15:1,3,7,7, 12,15;17:18;18:1,5,18, 24;19:5,8,10,15,22,25; 20:3,7,9,19;21:1,5,13,19, 20;22:1,7,10,11,17,19; 23:3,5,17,25;24:2,4,7,8, 13,22;25:25;27:1,23; 28:16;29:7,12;30:5,7,9, 19,21;33:2,12,14,19,19, 23,24,25;34:3,3,10;35:9, 15,20,21;36:10,14,14,15; 37:1,3,4,5,17,19,19,20,21, 21,23;38:7,12,15,16,17, 21,21,23;39:1,2,5,19,23; 40:23,24;41:3,7,10,18,21, 23;42:4,5,17,23;43:20, 23;44:3,4,9,9,10,21;45:2, 4;46:5,13,17,17,18,20,22; 47:6,19;48:24;49:23; 50:4,5,21,23;51:12;52:7, 22,24,25;53:2,6,8,9,11, 20,24,25;54:16,20,21,22; 55:14,15,17,21,22;56:5, 13;57:6,13,16,21,22,25; 58:9,9,14,16;59:5,20; 60:2,13;61:14,19,21; 62:6,6,6,16,20,23,25; 63:7,11,19,24;64:6,18; 65:2,6,10,24;66:5,6,22, 24;67:6,7,23;68:17,18,18,</p>	<p>19,24,25;69:7,11,13,14, 15,22;70:9,19,20;71:2; 72:1,18,20;73:10,21,22, 23;74:6;75:1,1,17,22; 76:2;77:9;78:5;79:12,16, 18,21;80:12,25;81:1,4,12, 17,18;82:21;83:20;84:16, 23;85:20;86:1,2,12,13</p> <p>that's (29) 6:21;8:23;13:10;17:15, 22;18:1,7;39:5,15;42:4; 43:4,10,15;44:1,10,21; 54:14;61:1;62:18;64:4; 69:18;72:25;74:3,5; 77:24;78:6;83:23;84:9,16</p> <p>that's (12) 7:9;34:5,6;40:2;43:10; 54:14;61:24;63:3;65:4; 68:1;75:16;81:13</p> <p>the (862) 2:3,9,9,10,13,16;3:1,4, 6,10;4:12,15,16,18,23,23, 24;5:1,1,4,5,7,10,11,12, 19,24,24,25;6:3,4,6,9,11, 11,16,17,21,22,25;7:10, 15,20,20,21,21,21,25;8:1, 3,3,6,8,9,10,11,13,13,14, 15,16,16,17,19,19,21,22, 23,24,24,25,25;9:1,2,14, 15,18,19;10:3,4,5,5,9,11, 12,15,17,18,18,19,20,20, 21,22,22,23,24,25;11:1,2, 2,4,6,7,13,13,14,15,16,18, 19,20,20,25;12:3,6,9,11, 12,14,14,21,22;13:1,5,6, 7,8,10,10,15,16,16,17,19, 20;14:2,5,7,8,9,11,11,14, 19;15:1,5,5,6,6,13,13,14, 15,16,17,19,23,24;16:1,2, 7,9,10,12,13,14,14,16,17, 17,20,21;17:1,2,3,6,6,7,8, 10,16,17,25;18:6,7,8,12, 16,16,19,20,21,22;19:1,3, 3,4,6,7,9,10,12,12,12,15, 15,15,17,19,21,22,23,24; 20:3,9,10,10,11,13,16,18, 19,23,25;21:6,8,9,10,17, 21,25;22:1,7,9,10,15,18, 20,21,22,24;23:9,11,11, 13,16,19,20,21,25;24:1,2, 4,10,13,16,17,18,19,20, 22,24;25:1,3,6,9,14,16, 18,19,21,21,22,23,25; 26:1,1,3,4,8,11,11,13,14, 15,18,20,22,23,23,25; 27:1,2,2,5,6,9,10,12,15, 16,17,18,18,20,23,24,25, 25;28:2,7,10,12,15,16,18, 18,19,24;29:2,7,10,11,16, 17,18,23,24,25;30:2,2,5, 11,12,14,16,17,17,20,23, 23;31:3,5,8,15,18,22,22; 32:2,4,9,16,17,20,21,22,</p>	<p>25;33:1,2,3,4,4,5,12,15, 15,22,24;34:2,4,9,10,14, 17,19,20,22,24,25;35:1,5, 5,9,12,13,15,17,18,19,20, 21,24;36:2,5,7,7,9,10,11, 12,15,16,18,19,22,22,23, 23;37:1,4,9,10,15,16,17, 20,24,24,25;38:7,11,12, 13,15,17,18,22,22,24,25; 39:3,3,5,7,8,9,10,11,12, 13,14,14,16,18,18,22,25; 40:3,7,13,19,20,22,23,25; 41:5,8,11,11,14,15;42:21; 43:12,14;44:5,5,7,8,13, 15,25;45:4,11,12,12,22; 46:1,2,2,3,5,5,12,17,18, 22,22,23,24,47:6,8,11,11, 18,19,22,22,23,25;48:1,2, 4,5,5,7,8,9,13,13,15,15, 17,19,23,23,24,24;49:2,3, 10,15,16,18,20,20,24; 50:3,4,5,5,9,11,21,22,23; 51:3,12,19,20,22,23;52:2, 2,3,4,7,7,8,8,14,24,24,24; 53:2,5,6,10,13,14,16,18, 23,25;54:23;55:2,7,9,11; 56:5,9,13,14,14,16,17,18, 19,20,23,23,24;57:2,3,4, 5,8,9,13,18,18,19,23; 58:1,2,9,10,11,19,23; 59:18;60:18,21,22,23,25, 25;61:1,1,5,6,8,11,12,12, 12,13,14,17,18,20,20,21; 62:1,7,12,17,21,22,23; 63:1,2,5,8,12,15,21,22, 25;64:1,2,2,5,5,8,9,10,10, 11,11,12,14,14,15,18,21, 21,25,25;65:1,18,21,25; 66:4,6,11,11,12,12,12,15, 15,18,20;67:1,5,5,10,13, 14,20;68:2,3,7,14,17,17, 18,18,20,21,22,22,24,24; 69:3,3,4,5,6,7,7,9,10,11, 12,16,22,24;70:2,4,6,12, 12,16,18,19,20,21,22,23, 23;71:8,14,16,20,21,23, 23;72:1,4,5,6,14,14,16, 20,20,23,24;73:1,5,10,12, 15,16,19,25;74:1,2,2,8, 10,11,13,14,21,25;75:3,3, 5,16,16,18,19,20,22,22, 23;76:1,1,3,5,7,14,14,20, 77:5,6,8,9,13,13,18,21,23, 24;78:4,4,5,17;79:11,11, 17,18,19,22,23,24,25,25; 80:2,8,9,10,15,18,19,21, 23,24;81:5,9,10,10,13,15, 15,16,19,20,23;82:4,12, 19,19,20,25;83:2,3,7,10, 13,14,18,21,24;84:1,1,2, 8,8,9,10,12,13,14,16,18, 19,21,25;85:2,5,15,15,17; 86:4,7,7,8</p>	<p>their (40) 5:2,15,23;6:2,6,13;7:1; 16:11;19:20;21:8,14; 22:2,3,6,7;23:23;30:6,6; 31:16,17;32:21;39:4,13; 41:7,10;45:19,20,21; 46:9;53:19;69:4,20; 72:19;73:9,25;74:3; 77:22;78:2;85:6;86:5</p> <p>them (28) 14:25;18:9;32:9;34:8; 40:9,10;53:3,21;58:12; 64:11,15;65:23;66:20; 67:1,3;72:21;73:20;78:1, 8,11,15;80:14;81:11; 83:8,10,12,21;85:2</p> <p>themselves (2) 22:19;82:5</p> <p>then (19) 5:6;7:21;8:17;9:11,12, 23;10:1;12:3;21:20; 26:19;29:1;54:12;57:13; 68:9;69:8,24;81:8,12,15</p> <p>there (43) 4:6;14:7,17,20;17:6; 22:23;24:5,21;26:6;39:9; 40:1,1;41:25;43:8;44:7; 49:3;53:10;55:16;56:15; 57:16;58:13;59:20;61:4, 9,14,16,22,23;62:2,10; 68:1;73:19,21;79:3,22; 80:1,8,19,21;81:2,21; 82:2;85:20</p> <p>there's (15) 2:19;10:8;29:24;33:24; 34:5;41:2,6;57:17;61:8; 62:5,9,10;76:7;83:18; 86:14</p> <p>there's (7) 34:1,3;38:15;66:5; 68:6,7;80:12</p> <p>these (19) 17:1;18:4,10,16;21:3; 25:6;26:8;30:21;35:10; 38:9;39:23;40:6;45:2,18; 46:6;53:22,25;57:20;76:4</p> <p>they (87) 4:24;5:14,21;6:6,12,14; 7:16;10:14;15:1,22; 16:12,13,16;21:12;30:1, 4;31:16;33:25;34:1,2; 39:2,4,9,41;8:44;8:45;20; 46:5,6,8;48:16;49:25; 51:21,24;52:7;53:2,5,19; 54:5;56:13;57:3,15,15; 60:5;61:15;62:21;63:3,4, 5;67:6;68:8,10,17,19,20; 69:23;71:6,6,7;72:24; 73:3,4,4,5,6,7,8,10;74:5; 76:4;80:17,22;81:22,25, 25;82:1,22,22,23,25;83:9, 11,11;84:9,14,15,20;85:6</p> <p>they'll (1)</p>
T				
<p>table (8) 8:25;53:10;54:1;75:14, 15,17,17,21</p> <p>take (7) 21:11;39:7;46:24; 53:24;54:21,23;64:14</p> <p>taken (1) 12:7</p> <p>takes (1) 73:12</p> <p>taking (1) 55:2</p> <p>talk (2) 23:18;71:18</p> <p>talked (1) 56:10</p> <p>talking (4) 23:21;30:10;33:17; 44:15</p> <p>taller (2) 66:6;67:7</p> <p>tax (2) 75:1;81:1</p> <p>taxes (2) 81:2,3</p> <p>taxpayer (1) 60:20</p> <p>taxpayers (2) 26:20;62:18</p> <p>team (5) 18:7;60:24;85:22;86:2, 10</p> <p>tear (1) 5:25</p> <p>technical (2) 85:22;86:10</p> <p>technology (2) 54:16,22</p> <p>Telfair (1) 68:12</p> <p>tell (10) 13:1;16:24;17:4;49:13; 58:11;60:6,11,15;65:21; 79:12</p> <p>tens (1) 33:17</p> <p>term (1) 48:13</p>				

69:8 they're (10) 6:18,25;48:16;49:25; 67:2;81:24;82:10;83:25; 84:18,25 They've (6) 21:12;46:13;66:9; 69:13;73:8;82:4 they're (5) 33:23;56:20;62:14; 84:2;85:4 they've (2) 45:20;73:20 thing (18) 14:6;15:16;16:2,6,22; 23:9;30:23;45:19;55:13; 62:1;67:8,15;69:25; 71:20;81:14,15;84:18,25 things (14) 2:13;38:7;45:2;46:17; 52:20;54:9;56:3;57:21; 61:5;62:5,5;68:15;71:22; 83:14 think (30) 2:18;6:21;8:23;13:21; 14:16;23:12;29:10; 30:19;38:21;41:8;44:9; 46:17;23;47:10;57:4; 58:19;60:12;66:5,17; 67:22;68:8;71:8;77:9,14, 19;82:2;83:5,15,20;86:13 think's (1) 62:16 third (1) 81:17 this (130) 2:3,4;4:1,10,16,18,22, 24;5:3,15;6:16,19,25; 7:13,17;9:24;11:9;12:15, 18,21;13:5;14:3,5,6,9,18; 15:2,16,20,25;16:1,1,2,6, 11,19,20,21,25;17:12,14, 18,21;18:14;21:10,19, 22;13,25;23:23;24:15,16; 25:9,20;26:6,15,19,21; 27:20,22;29:1,9,13,16; 30:12,19,22;34:6;35:6, 24,24;36:20;37:11;39:1, 15;40:11,18;41:6,25; 42:5,14,25;43:9;44:16; 45:16,22;47:3,4,10; 48:19;49:13,14,50:15; 51:11;53:19;54:2,17; 55:18,22,24;57:8;58:19; 60:9,12;61:16,17;62:2; 63:4;65:16,21;66:3;67:8; 69:2,25;71:2,7,9,15; 72:11,24;73:3;74:14,25; 76:16;77:17;78:12; 79:12;80:23;81:14;82:9; 84:3 Thomas (1) 52:11	those (25) 2:16,25;3:9;7:18,24; 8:2,5,7,9;14:16;16:23; 20:5;23:6;38:18,21; 43:14;45:5;48:14,18; 54:8;57:20;64:7;75:23; 79:24;85:14 though (3) 24:20;62:1;69:10 thought (4) 6:19;27:15;44:21; 55:14 thousand (1) 20:16 thousands (4) 29:6;30:5;43:3;57:14 threatened (1) 51:12 three (3) 31:14;42:15;57:20 threshold (2) 36:20;37:11 thriving (1) 44:18 through (12) 5:7;8:4;12:9;17:13; 35:25;47:25;66:11,12,17; 75:10,20;76:5 throughout (2) 21:8;42:23 Thurmond (1) 74:4 Thus (1) 48:7 Tim (2) 10:13;84:6 time (23) 6:6;13:3;15:21;25:5; 31:16,18;38:25;51:12,19; 54:21;55:2;63:4;70:1; 75:3,5,6;76:17;77:18; 78:20,21;82:21;83:16; 85:15 times (3) 29:15,21;58:20 tired (1) 14:1 to (446) 2:3,22,23;3:4,19;4:2, 15,20,25;5:13,14,23;6:13, 16;7:4,6,7,10,14,15,19, 22,25;8:18,21,22;9:2,3,6, 10,14,17,17,19,22;10:2,7, 7,11,12,21,25;11:18,22, 23;12:5,8,14,19;13:1,11, 15,17;14:2,14,19,20,22, 23,23;15:11,12,12,14,15, 19,22,23,24;16:4,10,10, 13,14,14,15,17,19;17:17, 22;18:1,3,5,10,10,12,15, 16,22,24;19:2,4,17,21,25; 20:1,17,19;21:11,19,21; 22:3,13;23:4,12,16,17,18,	22;24:2,2,13,14,18,20,22, 22;25:5,7,8,9,10,12,16, 18,19,20,22;26:2,19,20; 27:11,12,12;28:8,25; 29:2,9,13,14,15,17,22,23, 25;30:2,12,15,16,20,22, 23,23;31:1,2,4,6,7,8,10, 10,12,14,18,20,23,24; 32:2,8,16;33:1,13,22; 34:8,8;35:18;36:4,16,18, 22;37:9,15,16,19,23,23; 38:6,9,22;39:2,7;40:12, 22,23,24;41:2,4,6,7,9,9, 10;42:6,7,15;43:6,6,7,13, 17,20;44:2,4,8,9,12,13, 17,18,22,23;45:3,5,11,16, 21,21;46:10,14,15,16,25; 47:3,5,9,11,17,24;48:7,9, 12,14,17,18;49:3,5,12,20; 50:2,11,12,14,24;51:18, 24,25;52:2,7,8,13,19; 53:7,17,24;54:8,9,10,11, 12,16;55:2,12,20,23,23; 56:2,4,12,14,16,20,20,21; 57:9,9,10,12,13,14,15,22, 22,23,25;58:3,4,13,20,25; 59:1,3,6,19,20,24;60:1,1, 4,9,12,15;61:4,10,11,15, 23,25;62:7,14,15,15,16, 17,18,24,25;63:2,9,10,11, 12,17,19,24;64:1,7,10,14, 18,20,21;65:1,6;66:5,13, 14,16;67:10,12,24,25; 68:2,4,5,16,20;69:6,8,11, 12,25;70:3,5,7,15;71:7; 72:8,18,19,23;73:4,4,6, 10,14;74:3,6,10,12,14,15, 23,24;75:9,11,12,15,15, 19;76:13;77:19,24,25; 78:4,11,12,13;79:1,7,8, 13;80:9,13,15,18,19,24; 81:4,13,20,23,25;82:2,5, 15,15,17,18,22,23,25; 83:3,5,16,17;84:11,13,19, 19,21,25;85:1,1,2,4,4,13, 15,15,17,18,21;86:5,15, 16,17 Tobacco (1) 52:12 today (14) 2:3,17;3:2,5;9:1;11:5; 17:16,17;23:18;33:7; 45:11;52:6;70:20;78:20 Todd (5) 32:6,6,7,11,11 together (9) 9:16;30:20;45:6;50:24; 51:5,16;52:6;58:20;77:4 told (5) 9:20;23:2,3;38:12; 70:18 Tom (7) 4:12;7:8,12;18:8;	75:18;85:23,24 tomorrow (2) 10:16;59:9 tonight (3) 12:12;18:4;78:24 too (5) 47:14;51:3;59:14; 61:10;62:9 took (3) 9:19;46:5;78:7 top (4) 7:20;13:17;79:25; 80:24 topic (3) 2:5;42:15;43:9 topics (1) 10:3 total (1) 59:23 totaled (1) 26:4 touch (2) 4:18;44:12 tourism (4) 27:4;44:1;46:18;53:12 town (1) 67:10 train (2) 49:10;67:9 transplants (1) 59:22 Transportation (2) 13:8;36:21 travesty (1) 43:11 Treatment (1) 26:12 tremendous (3) 2:14;30:1,8 triathlon (2) 57:4,20 truck (1) 75:6 true (1) 74:3 trust (4) 16:11;34:3;48:15;60:3 truth (1) 65:21 try (4) 43:6,7;47:3;86:16 trying (4) 7:6;58:13,25;80:13 Tuesday (1) 12:9 TV (1) 67:23 two (23) 4:3;7:16,24;8:7,7; 13:20;18:12;21:18;23:3; 45:5;49:24;50:17,22,25; 59:20;67:12;77:2,3,3,11, 13;80:4;82:24	type (2) 37:2;65:24 <hr/> U <hr/> unacceptable (3) 19:24;22:5,11 under (8) 13:5,8;15:18,20;27:16; 35:1;36:12,25 undergraduate (1) 42:24 understand (9) 10:17;12:17;14:20; 23:25;34:3;41:6;70:2; 71:20;80:22 understanding (1) 25:25 unfeasible (1) 41:9 unforeseen (1) 77:20 unfortunately (3) 23:13;50:16;69:14 unify (1) 43:6 unintended (2) 29:11;30:17 Unit (2) 59:17;76:9 united (7) 12:21;13:5;17:3,7; 18:21;37:24;52:14 University (1) 42:25 UNKNOWN (8) 32:10;41:17,18,21,24; 42:9;45:13;55:3 unless (2) 82:15;85:5 Unlimited (1) 39:22 unmitigated (1) 48:20 unquote (1) 28:22 until (2) 29:11;31:15 untruthful (1) 13:20 unusable (2) 62:14;63:8 up (39) 3:10;7:16;9:10;15:22; 17:6;35:25;39:9;41:12; 42:17,21;43:25;44:2,6, 12,20;47:9;50:15;51:22; 52:22;56:8;64:1,7,13,15; 65:7,18;68:7;69:8,9; 73:23;74:5;75:19;76:11; 77:5;81:18;83:2,18,22; 84:23 upfront (1)
--	--	--	---	---

<p>82:1 upgrades (1) 4:20 upper (1) 36:23 up-river (1) 76:2 upstream (5) 7:23;20:6;33:2;34:4; 64:19 upwards (1) 72:19 urge (1) 37:15 us (44) 2:15,25;3:5;4:1,3;8:7; 11:1;15:11;17:13,21; 20:5;22:19;23:6,17;24:2; 28:25;30:22;33:13,25; 37:15;38:12,21,25;40:5, 13,21;43:7;46:5,13; 48:18;56:4,6,9;60:6,6,14, 15;65:6;68:2,18;77:21; 79:25;82:16;86:4</p>	<p>48:2;52:21;53:4,8,12; 54:9;65:11 viable (5) 48:10,25;49:4;53:20,21 view (1) 80:19 views (1) 2:10 Village (2) 28:8,9 violating (1) 85:2 visit (1) 10:15 visitation (1) 65:2 visitor's (1) 63:21 volunteer (3) 40:10;43:2,3 vote (1) 15:4</p>	<p>53:20,21;55:14,16;56:12, 22;58:9;62:25;63:5,6; 66:22;68:2;71:2,9;76:25; 84:7;86:7 Washington (4) 9:24;51:18;59:11; 77:22 washout (1) 76:8 wasn't (1) 66:24 Wastewater (1) 26:12 watched (2) 79:15,16 water (54) 5:10,12;10:19;11:1,16; 14:4,8;15:3;19:22;20:10, 13,17,21,21;21:2,9,15; 22:2;24:10;26:1;27:4,16, 19;28:17,21,21;32:18,18, 21,23;33:10,13,14,15; 35:20;36:22;37:25; 38:19;40:14;41:25; 46:24;47:4,4,21;56:22, 24;62:22;64:15;75:14,17, 17,21;80:24;86:2</p>	<p>10,11;47:3,6;48:15; 49:24;50:15,16,17,18,23; 51:12,14,21;52:5,22,23; 53:24;54:3,7,7,8,10,10, 11,12,18,21,22;55:13,20, 23;56:21,21;57:2,6,8,10, 11,19;58:13,15,20;59:5,9, 11,20;60:6,6,7,7,13,14, 15;61:10,12,23;62:4,7, 24;63:11;64:10,12;67:2, 3,21,24;69:6,7;72:3,15, 18,23;73:17,18,21,22; 74:12,13;75:4,5,6,21,21, 25;77:2,3,15,19;78:5,12, 13;79:1,7,8,11,12,13,19, 22;80:2,4,18,18;81:4,7; 83:3;85:7,12,16,18,21,21; 86:5,13,15,17 We'd (5) 72:25;73:1,2,7;74:13 we'll (3) 3:1;83:3;86:9 We're (14) 2:6;3:19;7:5;15:10; 17:8,9;21:5;30:15;33:17; 43:21;46:25;59:21; 73:15;74:7 we've (4) 9:25;13:23;28:24; 59:22 weather (2) 79:11,11 website (2) 53:19;81:16 week (3) 6:16;49:19;53:20 weir (15) 5:3,6;7:11,22;18:23; 19:2;40:20;56:14,16,20; 64:22;66:4,13;67:7;79:13 welcome (1) 2:2 welfare (1) 20:3 well (23) 3:23;4:8;8:2;15:10; 16:16;34:10;35:7,23; 37:14;46:3;48:4;54:7; 55:18;57:4;62:24;65:17; 68:9;70:7,23;72:2;74:3; 86:1,12 We'll (6) 4:10;32:5;48:14;59:5; 85:10;86:16 well-being (1) 22:9 went (7) 13:17;15:2;51:18,24; 65:9;78:4;82:20 were (17) 5:15;7:24;22:24;27:7; 39:2;46:1,9;50:17,18; 51:12,21;68:19;72:20;</p>	<p>81:25;83:6,9,11 we're (14) 7:6;13:23,24;16:6; 17:18;30:10;44:14;58:13, 16,25;59:11;71:3;81:20; 82:11 we've (3) 14:4,15;17:22 what (69) 2:10;4:24;5:1,14,16,19; 6:3,4;7:16,24;9:1,6,21; 11:5,9,17,21;15:11,15; 19:16;22:24;23:21;24:7; 26:7,10;28:24;29:1,17; 30:21;31:1,2;39:3;46:8,8; 47:2,16;48:23;49:17; 52:4;54:7,10,11,11; 56:21;58:13,25;59:13; 60:1,6,15;64:24;67:19, 25;68:16;71:14;72:2,4; 74:14;77:4;81:1,7,22,23, 24;82:1,12;84:9,16;86:4</p>
W		<p>waterfront (1) 72:5 Waters (5) 45:25;47:14;51:9; 59:21;62:12 waving (1) 61:2 way (30) 6:25;7:21;8:19;12:22; 15:25;17:1,10;35:16; 37:18;38:12;39:5;41:8; 44:7;47:10;51:11;53:15; 56:13,19;67:6,11;68:18; 69:11;75:19,19;77:24; 79:13,19;83:7,10;84:23 ways (4) 8:20;12:4;66:5;73:19 We (233) 2:2,7,8,15,17,18,21,22, 24,25;3:3;4:2,9;5:8,16; 7:15,15;8:23;9:6;10:3,12, 17;11:8,20,24;12:3,4; 13:6,14,17,17,21,24;14:4, 10,15,16,17,19;15:8,12, 14,15,19,23;16:9,17,19, 19,20,22;17:9,9,15; 19:16;22:11,12,17,24; 23:1,1,2,2,3,3;24:5,7,9; 26:7,10,13;29:10,15,16, 21,23;30:8,11,11,19,22; 31:8,9;32:17;33:16,16, 20;34:3,8;35:20;37:15; 39:6,7,25;40:23,24,25; 41:11;42:14,43;11,20,24; 44:2,10,11,13,16,18,20, 22,23;45:5,5,17;46:1,9,</p>	<p>we're (14) 2:6;3:19;7:5;15:10; 17:8,9;21:5;30:15;33:17; 43:21;46:25;59:21; 73:15;74:7 we've (4) 9:25;13:23;28:24; 59:22 weather (2) 79:11,11 website (2) 53:19;81:16 week (3) 6:16;49:19;53:20 weir (15) 5:3,6;7:11,22;18:23; 19:2;40:20;56:14,16,20; 64:22;66:4,13;67:7;79:13 welcome (1) 2:2 welfare (1) 20:3 well (23) 3:23;4:8;8:2;15:10; 16:16;34:10;35:7,23; 37:14;46:3;48:4;54:7; 55:18;57:4;62:24;65:17; 68:9;70:7,23;72:2;74:3; 86:1,12 We'll (6) 4:10;32:5;48:14;59:5; 85:10;86:16 well-being (1) 22:9 went (7) 13:17;15:2;51:18,24; 65:9;78:4;82:20 were (17) 5:15;7:24;22:24;27:7; 39:2;46:1,9;50:17,18; 51:12,21;68:19;72:20;</p>	<p>what's (4) 16:16;47:16;68:4; 70:20 whatever (4) 43:11;44:11;61:10; 63:11 what's (2) 67:14,14 whatsoever (1) 14:21 wheels (1) 82:12 when (22) 8:19;10:2;19:23,23; 23:16;30:4;32:2;33:23; 39:8;48:16;51:21;61:2; 62:21;63:4;65:20;67:20; 71:2,6;75:21;77:23;78:3; 81:9 whenever (2) 52:13,25 where (12) 7:15;17:15;52:1;56:21; 57:9,12;64:2;65:7;66:10, 21;71:16;83:11 whether (3) 54:3;67:11;73:17 which (23) 4:22;5:8,23;6:24; 10:23;11:5;12:7;17:2; 22:20,22;26:14;34:15; 36:5,25;39:11;40:12; 48:25;55:6,7;59:18;63:6; 73:13;74:15 while (4) 35:13;65:10,17;77:5 white (1) 50:4 whitewater (2) 40:22;45:1 who (34)</p>
V		<p>walk (1) 64:2 wall (4) 62:22;63:2,5;76:8 walls (1) 29:18 want (48) 10:6;11:22;12:19; 14:14;15:11,14,15;16:4; 17:25;18:3,10;19:16; 23:18;25:12;28:8;34:8; 38:6;41:7;44:8,12,23; 45:3;47:9;55:12;56:21; 58:3;59:3;68:15;72:24; 73:6,10;74:12,13;75:15; 78:11,12;80:18;82:1,21, 22,22,25;83:5,17;84:11, 12;85:13,21 wanted (7) 2:22,23;18:15;39:3; 41:2;57:22;72:8 wanting (1) 24:18 wants (2) 29:2;40:12 warehouse (1) 62:12 was (70) 4:15,17,18;6:8,10,11, 15,19;7:18,18,22,24;9:17, 18,20;10:2,4,23;11:9,10, 21;15:1,7;16:13,15; 19:11,16;22:19;24:1,7,8, 21;25:24;26:5;29:18,25; 30:4;34:21;35:17,21; 37:21,21;38:23;39:12,19; 42:20;46:7;48:20;49:11; 50:6;51:25;52:1,14;</p>	<p>value (7) 6:20,22;7:2,16;80:17, 25,25 values (1) 37:5 varies (1) 11:3 various (1) 37:14 very (37) 2:4,7;9:23;13:2,20; 17:24;21:19;22:7;25:7, 15;29:3;38:2;39:11;41:9; 43:17;45:8;49:17;50:22, 22,25,25;51:1,1;52:4; 58:1;59:14;60:14;61:7; 65:6;67:13;72:25;74:4, 16;75:2;80:3,10;85:8</p>	<p>what's (4) 16:16;47:16;68:4; 70:20 whatever (4) 43:11;44:11;61:10; 63:11 what's (2) 67:14,14 whatsoever (1) 14:21 wheels (1) 82:12 when (22) 8:19;10:2;19:23,23; 23:16;30:4;32:2;33:23; 39:8;48:16;51:21;61:2; 62:21;63:4;65:20;67:20; 71:2,6;75:21;77:23;78:3; 81:9 whenever (2) 52:13,25 where (12) 7:15;17:15;52:1;56:21; 57:9,12;64:2;65:7;66:10, 21;71:16;83:11 whether (3) 54:3;67:11;73:17 which (23) 4:22;5:8,23;6:24; 10:23;11:5;12:7;17:2; 22:20,22;26:14;34:15; 36:5,25;39:11;40:12; 48:25;55:6,7;59:18;63:6; 73:13;74:15 while (4) 35:13;65:10,17;77:5 white (1) 50:4 whitewater (2) 40:22;45:1 who (34)</p>

<p>2:23,23;3:5;4:7;7:8; 9:18;12:12,20,22;17:6, 12;18:13;20:6;25:13; 32:15;43:9;44:4;47:8; 48:19;51:22,24;52:5,6; 53:16;60:1,8;62:15;74:9, 22;80:17;84:7;85:14,23, 25 who's (3) 18:9;40:11;82:10 whole (1) 43:21 whom (1) 3:25 whose (1) 37:7 why (13) 8:23;39:15;42:6,9; 43:15;63:6;64:12;67:1,3; 79:22;80:2,22,23 wide (1) 14:10 wider (1) 57:12 Wiedmeier (6) 4:12,14;18:8;33:11; 77:7;85:23 wife (1) 59:19 WIIN (13) 7:18;9:1;10:20;11:13, 20;24:16;27:17,23;38:13, 15,24;50:3,5 wildlife (1) 54:8 WILHELMI (2) 76:18,19 will (47) 3:7,8,25;10:14;12:13, 14;14:20;16:19,21,22; 18:4,6;21:2,14;22:11,12; 23:4,22;24:24;26:20; 28:3;29:13;31:13;37:17, 19;40:21;46:19;47:5,20; 49:23;50:4;58:14;59:11; 61:13,21;63:9;75:24; 76:11,14,14;77:7,25; 78:17;80:25;81:2;86:3,10 Williams (3) 3:13,15;70:11 WILLIFORD (2) 65:13,14 willing (2) 41:4;82:15 Wilson (4) 4:4;9:9,13;84:7 wind (1) 53:23 with (88) 2:8,14,24;3:3,5,8;4:3, 10,18;5:3,6;7:5,16;9:18; 10:13;12:2,11,12;13:3, 16,20,22;14:15,16,18,25;</p>	<p>15:18;16:6;17:21;18:6,8, 22,23;21:18;22:25;24:11; 26:14;28:4,16;29:3;35:8; 36:15,21;39:2,25;42:3,7, 22;43:7,14,18;45:22; 46:2,12,24;47:18,21,22, 24;48:20;51:19;52:14; 56:9,10,14;57:2;58:10, 20;59:9;60:5;61:5,20; 62:20;64:25,25;67:5; 68:21;69:16;72:16,24; 74:7;76:10;77:9;81:14, 16,18;82:24;86:13 withdrawal (1) 21:22 within (3) 11:13;48:10;49:2 without (5) 20:5;24:12;33:10,14,15 witnessed (1) 26:13 won't (4) 57:10;61:15,23;69:23 wonderful (2) 9:25;17:13 wonk (1) 23:16 words (2) 15:1;56:19 work (15) 10:13;13:10;17:11,13; 18:7;25:10;37:4;40:9,21; 43:2,3;44:10;58:20; 75:15;83:19 worked (4) 40:2;45:21;76:22;78:3 workers (1) 33:20 working (9) 13:4;40:4;58:16;59:12; 67:5;69:2,5;73:2;77:4 works (2) 14:6,10 world (1) 61:18 worth (1) 77:14 would (45) 3:4;5:9,12,17,25;6:12; 8:2;9:9;11:7;15:7,8;19:8; 21:16;24:3,5;27:22;29:9, 17;30:5,7;31:1,9,23; 33:22;35:15,24;39:4; 40:12,21;44:4;45:2; 47:10;52:19;56:13,15; 57:11,16;60:8;69:15; 74:15;82:2;83:8,12,19; 86:15 would've (3) 30:1,3;84:22 wouldn't (3) 24:5;57:15;71:15 wouldn't (1)</p>	<p>12:19 write (1) 60:7 written (3) 31:23;56:8;60:9 wrong (3) 19:11;84:14,18 X X'd (1) 8:8 Y y'all (14) 14:7;32:1;41:16;51:1; 58:5;59:13;60:21;61:2; 62:6;63:13;65:13;66:2; 70:15;84:8 y'all (1) 66:18 yeah (5) 13:17;14:4;41:20;58:5; 61:12 year (13) 6:12,14;19:18;21:5; 26:25;49:12,21;57:7; 61:18,25;63:22;64:23; 74:21 years (36) 2:6;9:19;20:15,25; 23:9;24:21;26:25;27:5; 29:14;30:16;35:23,23; 36:5;37:23;42:2;43:12; 49:24;50:15;52:18;55:10, 15;59:20,21,23;60:25; 68:13;69:13;70:9;71:15; 74:2,7,12;76:1,15;78:6; 83:10 Yes (1) 69:17 yet (1) 60:12 yielding (1) 31:19 you (171) 2:2,17,20,21;4:9;7:12; 8:3,4,12,14,15,16,19;9:4, 9;12:13,23,24;13:1,6,12; 14:3,11,13;15:19,21,21; 16:3,24;17:4,15,20,20,23; 22:22;23:5,11,19;24:1,6, 19;25:1,1;29:3;30:24; 31:20,23,24;32:2,4;33:9, 11,16,20;34:2,4,6,11; 38:2;39:8,10;42:9;44:6,8, 20;45:6,7,10,20,23; 46:24;47:3,12;49:5,13; 50:11,13;51:6;52:9; 53:17,18;54:6,25;55:1, 13;57:3,23;58:12,14,21; 59:14;60:11,14;61:2;</p>	<p>62:15,16;63:2,7,19,24; 64:2,9,24;65:21;66:8,10, 19;67:1,11,13,15,18; 68:10;69:10,23;70:1; 71:8,15,20,22,23,25,25; 72:4,9,10;74:16,24; 75:12,14,15;76:9,10,16, 25;77:14;78:9,10,11,20, 21;79:12;80:3,14;81:9,9, 11,12,12;82:5,8;83:5,5,8, 12,15,17;84:10,11,11,12, 15;85:5,7,14,19,21,24,25; 86:14,16 you'd (1) 71:13 you'll (1) 6:2 You're (8) 8:20;17:16;18:18; 63:23;68:15;75:9;82:15; 83:20 you'd (1) 31:4 younger (3) 43:9,13;54:18 your (32) 2:15;6:24;17:11,12; 31:19,21,24;32:3,4; 42:15;50:2,2,11;51:6; 63:3;67:10;70:15;74:20, 21;75:10,10,13,15,16; 76:11,16;77:12,15;78:20, 21;85:16;86:17 you're (2) 8:21;85:1 You've (1) 55:8 Z zero (2) 39:12;69:21 1 1 (1) 3:18 1- (2) 5:14;11:10 1,000 (1) 33:7 1.1 (5) 30:14;48:11;53:11,20, 22 1.9 (1) 26:4 10 (4) 3:12;5:8;83:18,22 100-year (2) 7:1;8:13 10th (1) 86:6 11 (1)</p>	<p>5:13 1-1 (9) 6:3,13,22;8:23;15:21; 22:20;27:22;28:23;39:8 112.4 (1) 26:3 1128 (1) 49:9 113.5 (1) 11:3 114.3 (1) 26:2 114.5 (4) 11:3,4,17;38:13 114-foot (1) 28:19 12 (3) 59:21;63:16;67:23 1203 (1) 59:17 130-day (1) 15:24 1315 (2) 45:25;47:14 1343 (1) 51:9 14 (1) 24:21 1415 (1) 63:15 15 (4) 42:2;59:23;74:11; 83:22 150 (1) 33:8 15th (1) 55:17 16 (1) 65:8 165 (1) 78:22 16th (4) 10:24;12:9;50:6;86:9 180 (4) 83:2,9,12,17 1930's (3) 54:16,17,24 1937 (2) 19:22;34:18 1960 (1) 71:13 1978 (1) 69:2 1990 (1) 49:11 1996 (1) 34:23 2 2 (3) 3:14;23:9;46:7 2.6 (1)</p>
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30:13 20 (7) 16:15;20:24;21:24; 26:24;27:5;60:25;69:13 2000 (6) 26:25;29:16;30:4; 49:25;51:11;62:21 2001 (1) 34:24 2010 (1) 74:23 2012 (1) 4:17 2013 (1) 35:4 2015 (3) 14:25;16:3;74:23 2016 (2) 10:24;50:7 2017 (1) 27:9 2020 (1) 49:25 2021 (1) 15:20 2035 (1) 21:6 2050 (2) 21:1,7 2115 (1) 32:12 21st (2) 54:20,23 2349 (1) 70:11 24 (1) 19:17 25- (1) 64:16 2-6 (1) 47:18 2-6d (9) 6:4;18:25;19:5;22:21; 25:23;26:3,18;27:22;29:1 2837 (1) 52:12 2928 (1) 76:19 2-foot (3) 5:14,17;11:10	71:11,12 34 (1) 21:2 35 (1) 78:6 3641 (1) 38:4 365 (1) 19:17 37 (1) 68:8 373 (1) 45:14	68.9 (1) 6:10		
		7		
		7 (2) 3:11;19:17 7:00 (1) 86:19 70 (1) 71:10 712 (1) 72:13 724 (1) 63:14 746 (1) 55:6 75 (1) 80:7 7th (2) 34:16;59:17		
	4	8		
	4 (3) 3:17;25:13;29:5 4:00 (1) 12:10 40 (2) 43:12;78:6 400 (1) 65:2 415 (1) 34:16 435 (1) 68:12 46 (1) 70:10 48 (1) 72:13 4-plus (1) 5:18	80 (2) 75:25;83:9 82 (2) 35:23;37:22 820 (1) 67:17 83 (1) 58:6		
	5	9		
	5 (2) 3:16;41:24 50 (8) 35:23;36:5;43:12;64:4; 70:8;74:2,5,7 50s (1) 71:3 55 (1) 68:13 5th (4) 5:12;11:2;62:11;64:1	9 (1) 5:13 90 (1) 22:1 98 (1) 49:12 99 (1) 85:6		
	6			
3	6 (2) 3:14;46:9 60 (1) 71:14 606 (1) 34:13 60s (1) 71:4 65 (1) 65:14 68 (1) 71:5			
3 (1) 68:3 30 (6) 12:8;16:14;20:25; 43:12;55:15;56:2 30s (1) 14:5 316 (2) 60:17;82:7 32 (2)				

Appendix J
Aiken Standard News Article, February 19, 2019

TOP STORY

CSRA officials react to Savannah River drawdown

Aiken County, North Augusta and Augusta differ from Army Corps' suggestion

By Lindsey Hodges lhodges@aikenstandard.com Feb 19, 2019



This photo taken Feb. 13, shows the river levels near River North in North Augusta during the Savannah River drawdown. Submitted photo



U.S. Army Corps of Engineers extends comment period for the Lock and Dam project

Those wishing to send comments to the U.S. Army Corps of Engineers about the future of the New Savannah Bluff Lock and Dam will now have an ex...

f t e b q

The Savannah District of the U.S. Army Corps of Engineers held a drawdown simulation of the Savannah River last week demonstrating their preferred alternative for the Savannah Harbor Expansion Project fish passage project and received a lot of backlash for the effects it had on the river level.

Under the Water Infrastructure Improvements for the Nation (WIIN) Act, the Corps is required to provide fish passage for endangered species, specifically the shortnose sturgeon. The WIIN Act also deauthorized the New Savannah Bluff Lock and Dam.



North Augusta City Council to again discuss new public safety facilities

The future of the North Augusta Department of Public Safety will again be the topic of discussion during City Council's study session Monday.

The simulation showed the level the river pool would be under the Corps' preferred alternative, Alternative 2-6d, or a fixed rock weir with a dry floodplain bench on the Georgia side of the river.

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Augusta Chronicle News Article, February 16, 2019

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A draft report from the Savannah District of the U.S. Army Corps of Engineers shows a significantly higher price for its preferred alternative for New Savannah Bluff Lock and Dam and the plan favored by local communities to save it and maintain a higher pool of water in the Savannah River. Local leaders are discussing ways they could pay for it if needed.

A draft report was posted Friday but was removed after questions were raised by The Augusta Chronicle about some of the significant differences in costs attached to analyses of the options studied, as well as some apparently missing information. Corps district spokesman Russell Wicke said the report was accidentally posted incomplete and would be reposted once the missing information was added. It was back up by Friday night.

Also on Friday night, the Corps decided to bring an early end to its simulation of conditions that would exist under its preferred option – with a much lower pool of water in the river – after finding a bank potentially crumbling in the Goodale Landing area of east Augusta. It said water levels should return to normal by Sunday.

The Corps' preferred plan is to remove the lock and dam and build a 500-foot rock weir at the site of the current dam to allow endangered shortnose and Atlantic surgeon to pass through on their way to historic spawning grounds in the Augusta shoals. It would also mean a significant flood plain that would pass through the current Lock and Dam Park, allowing high flows to pass around the structure.

The river level would drop about three feet at the lock and dam and just under two feet at the Fifth Street Bridge but would be maintained for water supply and recreation, as required by federal law. The cost in that draft report would initially be more than \$87 million and, with an annual operation and maintenance cost of \$45,000 over the 100-year life of the plan, would exceed \$91 million.



**Legal Comments of the Cities of
Augusta, Georgia and North Augusta, South Carolina
on**

*U.S. Army Corps of Engineers Report:
“Savannah Harbor Expansion Project,
Georgia and South Carolina: Fish Passage at New Savannah Bluff
Lock and Dam
Integrated Post Authorization Analysis Report and
Supplemental Environmental Assessment”
and Related Documents*

Submitted by



Augusta, Georgia

and

North Augusta, South Carolina



April 15, 2019

Contents

Summary1

I. The Proposed Action Violates Congress’ Explicit Mandate in the WIIN2016 Act.....4

A. WIIN 2016 requires the Corps to repair the Lock Wall and Modify the NSBLD, Not Remove it, if the Secretary determines that Fish Passage is Necessary.....8

 i. The Corps Preferred Alternative, Proposal 2-6D to Remove the NSBLD Falls Under Option 2 Section 1319 (c)(1)(A)(ii) which Explicitly Omits Fish Passage8

 ii. If the Secretary determines Fish Passage is Necessary, then it is Required to Repair the Lock and Modify the NSBLD, not Remove the NSBLD8

B. The Proposal and Alternatives Fail to Meet the Requirement of both OPTION 1 and OPTION 2 in Section 1319 (c)(1)(A) to Maintain the Pool9

 i. The Proposal and Alternatives Fail to Maintain the Pool and Reduce Surface Elevation from Existing Conditions13

 ii. PAAR documents apply incorrect criteria for Impacts in Violation of WIIN 201613

 iii. The Corps is Prohibited by the WIIN 2016 Act from expending funds except in accordance with the Specific Authorization, Including Maintaining the Pool13

II. Deauthorization of NSBLD is a Separate Federal Actions for the Purpose of NEPA Analysis13

III. The Corps Failed to Develop an Appropriate No Action Alternative and Baseline15

IV. The Corps failed to Consider a Reasonable Range of Alternatives16

V. Alternative Evaluation Criteria Fail to Adequately Compare Impacts19

VI. The Corps Improperly Eliminated Alternatives Prior to the Close of the Comment Period and Prior to Receiving Comment.....21

VII. The Corps Predetermined the Action Prior to Public Comment in Violation of NEPA22

A. Because the Corps did not Assess Habitat Alternatives to the Purpose of SHEP Mitigation, the Corps Improperly Predetermined it Would Implement Fish Passage at the NSBLD22

B. The Corps Applied for a Revision to the Endangered Species Act Biological Opinion Illegally Pre-Disposing has Already Determined it Will Implement Fish Passage in Violation of the WIIN 2016 Act22

C. NOAA-NMFS States that the Decision to Remove the NSBLD Has been Made23

D. Issuing the Draft FONSI before Receiving Comments on the Proposal Violates NEPA and Due Process23

	E. By Committing Irreversible and Irretrievable Resources, the Corps has Impermissibly Predetermined the Outcome in Violation of NEPA	23
VIII.	401 Certifications and Coastal Zone Consistency	23
IX.	The Corps Proposal and Analysis is Arbitrary, Capricious, and an Abuse of Discretion	23
X.	The Corps Failed to Fully Assess All Direct, Indirect and Cumulative Effects, and Impermissibly Limited Geographic Scope of Analysis	25
	A. Wetland, Fringe Wetland, and Sensitive Riparian Areas	25
	B. Historic Resources	25
	C. Environmental Impacts	27
	D. Aquatic Habitat Impacts	28
	E. Endangered and Protected Species	29
	F. Sediments	30
	G. Socioeconomic Impacts on the Augusta Region	30
	H. Recreation Effects	27
XI.	Coordination and Assessment of Impacts on Federal Power Act, 16 U.S.C. §§ 791 et seq., is Required	31
XII.	Despite Significant Impacts, the Corps Has Failed to Propose Mitigation	31

These comments address legal issues regarding the February 14, 2019 Draft Integrated Post Authorization Analysis Report (PAAR) and Supplemental Environmental Assessment (SEA), Fish Passage at New Savannah Bluff Lock and Dam (NSBLD) and Draft Finding of no Significant Impact (FONSI) to evaluate proposed changes to the Fish Passage feature of the Savannah Harbor Expansion Project (SHEP)(hereinafter “SHEP PAAR/SEA/FONSI” or “Draft Report”). These comments are submitted in accordance with the National Environmental Policy Act, 42 U.S.C. § 4321 et seq. (“NEPA”) and applicable Federal laws, regulations and policy including United States Army Corps of Engineers - Procedures for Implementing the National Environmental Policy Act (ER 200-2-2), US Army Corps of Engineers. Engineer Regulation 200-2-2, 33 C.F.R. Part 230. Please accept these comments include these comments in the administrative record for the proceeding and processing in accordance with applicable requirements.

Summary

The SHEP PAAR/SEA/FONSI constitutes a new, separate action significantly affecting the environment. Accordingly, the Corps is required to follow NEPA procedures including developing a reasonable range of alternatives with public input regarding issues and effects. Here, the Corps has impermissibly combined two federal actions: the Savannah Harbor Expansion Project (“SHEP”) which is underway, commencing in 2012 and located 180 miles away, and the deauthorization of the New Savannah Bluff Lock and Dam (“NSBLD”) as authorized by the Water Infrastructure Improvements for the Nation Act, 114 P.L. , 130 Stat. 1703 (Dec. 16, 2016), § 1319 (“WIIN 2016”).

The two projects have completely separate NEPA purpose and need. By combining the two separate federal actions, the Corps has failed to follow NEPA procedures, deprived the public of due process and processes afforded by the National Environmental Policy Act, 42 U.S.C §§ 4321 *et seq.*, and Corps regulations and policies. Where the SHEP purpose was to address inefficiencies in the marine transportation of goods through Savannah Harbor by deepening the Savannah Harbor for international commerce and economics, WIIN 2016 is explicitly for the purpose of deauthorization of the NSBLD specifically and explicitly maintaining existing pool surface water elevations. As none of the Corps’ alternatives maintains existing surface water pool elevations – dropping the pool by as much as 6 feet depending upon the alternative and location – no alternative proposed by the Corps satisfies the requirements of WIIN 2016.

The Corps’ proposal will result in severe damage to the Augusta Region’s economic future, impacts to millions in government investment, its water supply, its water-dependent quality of life, lifestyle and character, to mitigate for a single effect – fishery impact – from a \$ 706 million Corps deepening project is unconscionable. The impacts are along seventeen miles of the Savannah River, and will range in reduction from economic damage to serious quality of life damage to a water dependent City and Region which has been built around the current pool in place for nearly a century, since 1937.

The entire basis for fish passage at the NSBLD is for mitigation for impacts from the Savannah Harbor Expansion. Passage of sturgeon is experimental, at best, with very, very few instances of measurable success making the Corps proposal certain to harm Augusta but uncertain in terms of providing any meaningful environmental benefit. When it was determined in 2012 that passage around the

NSBLD for sturgeon¹ would mitigate for environmental adverse impacts from Savannah Harbor deepening, the Corps and its sister Federal Agency the National Marine Fisheries Service (“NOAA-NMFS” or “NOAA-Fisheries”) concluded that **only four** sturgeon would be potentially taken (killed) by the SHEP work, and twenty ‘takes’ due to trawling and relocation (which releases the individuals alive). NOAA-NMFS, Biological Opinion, Deepening of the Savannah Harbor Federal Navigational Channel in association with the Savannah Harbor Expansion Project (NMFS Consultation No. F/SERJ2010105579) (Nov. 4, 2011). Nationally, fish passage for sturgeon has been ineffective. The NSBLD passage is being designed after the Cape Fear fish passage and is being studied by NOAA-NMFS “to apply these lessons learned to the Savannah River where a rock-arch ramp fishway will be constructed at New Savannah Bluff Lock and Dam. That project is being constructed to mitigate impacts to shortnose sturgeon from the Savannah Harbor Expansion Project.” Notably, we are unable to find any record of a single sturgeon passing the Cape Fear fish passage project which was also designed to pass Atlantic sturgeon and shortnose sturgeon. https://sero.nmfs.noaa.gov/habitat_conservation/hcd_headlines/cape_fear_ld1_fishway.html. The Cape Fear lock and dam was removed and replaced with a rock ramp fishway designed consistent with Corps Alternatives 2-1 through 2-9. Thus, the benefits of NSBLD removal and modification are overstated and not justified scientifically. Further, the Cape Fear passage is also reportedly less successful than the lock and dam for striped bass migration and potadromy.² The Corps has done no assessment of this data and information.

Therefore, the drastic impacts to the environment and economic vitality of the Augusta Region is sacrificed for an uncertain benefit to mitigation for impacts 180 miles away on very few sturgeon. Augusta supports ecosystem and species protection. It is unlawful, as set forth below, to place disproportionate impact to the Augusta area to achieve scientifically questionable and arguably experimental ecosystem and species benefits as mitigation for impacts from a separate harbor deepening project 180 miles away, and improper to do so prior to assessing alternatives more beneficial to the sturgeon and less impactful to the region and the ecosystem and resources in the Augusta and North Augusta region.

Given that the purpose of the Corps proposal is mitigation for four sturgeon would be potentially taken (killed) by the SHEP work, and twenty ‘takes’ due to trawling and relocation,³ the Corps has violated NEPA by failing to consider a reasonable range of alternatives which would satisfy mitigation for the anticipated level of take by the Savannah Harbor deepening. If the Corps has determined that it is unable to satisfy the original mitigation it identified, issued for public notice, and selected in a Record of Decision (“ROD”), it is required under NEPA and federal statutes including the Endangered Species Act, 16 U.S.C. §§ 1531 et seq. to develop and assess a reasonable range of alternatives to

¹ Although other species are expected to use passage, and would also use functional locks at the NSBLD, the Atlantic Sturgeon (*Acipenser oxyrinchus oxyrinchus*) and Shortnose Sturgeon (*Acipenser brevirostrum*) drive the fish passage design and mitigation purpose.

² Raabe, J., "Evaluation of Fish Passage Following Installation of a Rock Arch Rapids at Lock and Dam #1, Cape Fear River, North Carolina" (2014). International Conference on Engineering and Ecohydrology for Fish Passage. 69. https://scholarworks.umass.edu/fishpassage_conference/2014/June9/69

³ We recognize that in subsequent consultations the Corps has increased its incidental take request to 10 sturgeon. NOAA-NMFS. NOAA-NMFS, 2017 Biological Opinion Supplement Biological Opinion, Deepening of the Savannah Harbor Federal Navigational Channel in association with the Savannah Harbor Expansion Project (NMFS Consultation No. F/SERJ2010105579)(Oct. 13, 2017)("2017 BiOp Supplement")

effectuate the mitigation. Here, the Corps has only assessed fish passage at the NSBLD as its only alternative to the impacts to very few sturgeon 180 miles away. NEPA requires a reasonable range of alternatives, which here would include any number of habitat enhancements, conservation measures, alternative passage methods which would not drastically affect the Augusta Region, and may not affect it at all, but satisfy ESA Section 7 consultation requirements and provide for protection of a species impact by harbor deepening. By failing to consider a reasonable range of alternatives, the Corps has failed to comply with NEPA to assess a reasonable range of alternatives to achieve the sturgeon mitigation required under the 2012 SHEP EIS and ROD.

It is inappropriate, illegal and patently unfair to place such a significant impact on the Augusta region simply to permit benefits to another region. At the time the SHEP was approved, the position of the Corps and all parties was clear: removal of the New Savannah Bluff Lock and Dam was infeasible. 2012 SHEP EIS, App. C Mitigation, at 65. Nothing has changed since that 2012 Corps pronouncement respecting feasibility. When the Corps suggested fish passage at the NSBLD as a mitigation feature for SHEP impacts to sturgeon, here was no discussion of removing the NSBLD; there was no consideration of reduction of water levels along a seventeen mile segment. 2012 SHEP EIS generally; 2012 SHEP EIS, App. C Mitigation. Based upon the assertions that removal of the NSBLD is infeasible, and would not occur, governments and the public did not comment adversely or otherwise exercise rights of appeal, challenge or review of the 2012 SHEP EIS and related determinations. The 2019 PAAR by proposing drastic changes from the 2012 SHEP EIS forever altering the Augusta Region impermissibly changes the purpose, need, and scope of the 2012 SHEP EIS, lacking logical outgrowth from the original action and arbitrarily reversing numerous key scientific, technical, and other determinations.

The only change since the 2012 SHEP EIS identified by the Corps is WIIN 2016. As explained below and made clear in Corps guidance and memoranda, WIIN 2016 requires that the NSBLD be kept in place with the lock repaired and other necessary modifications including capability of passing fish over the structure, or alternatively removal of the NSBLD without a requirement to pass fish. Under any and all options, the pool surface water level is required to be maintained under WIIN 2016 specifically such that the Augusta Region would not be affected. As discussed below, if the Corps decides to remove the NSBLD, WIIN 2016 is clear that Congress did not intend that fish be passed. Accordingly, if the Corps still wishes to implement fish passage as mitigation for its other project, the Savannah Harbor Expansion, then it must keep the NSBLD in place, repair it, and construct a fish passage over it.

The Corps has proceeded with the NSBLD deauthorization to remove the NSBLD without following complete NEPA procedures discussed in detail below. Among the issues with the NEPA process are the Corps utilized an improper baseline for analysis by using a 2012 SHEP EIS mitigation plan for passage around the NSBLD, a project it now says it will never complete. Baseline is existing conditions under NEPA. The Corps also impermissibly predisposed its decision – over a year ago on January 14, 2017 it announced its decision to cast aside the 2012 SHEP EIS through consultation with NOAA-NMFS and instead removal the NSBLD. The Corps also recently ‘eliminated’ Alternative 1-1 through a blog post, impermissibly, before close of the comment period. The Corps issued the PAAR/SEA/FONSI before data from its February 8 through 15 drawdown could be used to calibrate modeling and consider true effects of its proposal and alternatives. The modeling is shown in our Technical Comments to be in error and understate water elevation drops. See Section V.A.

The Corps has illegally proposed and issued a draft Finding of No Significant Impact (“FONSI”) at the same time as its public notice of the proposal and before completion of the comment period. In essence the Corps is saying there is no significant impact from the action proposed in the 2019 PAAR/SEA/FONSI before even asking for public comment on impacts. The alternatives considered also fail to comply with federal law, specifically the WIIN 2016 Act, which requires that the pool surface water elevation upstream of the NSBLD be maintained. No alternatives assessed by the Corps maintains the pool which has been in existence since 1937, significantly affecting hundreds of thousands in the Augusta Region, millions in local and state investment, parks, recreation, municipal water supply, property values and environmental and aquatic resources.

As set forth below and in Technical Comments, the Corps erred in its NEPA analysis failing to take a hard look at direct, indirect and cumulative effects; applied an incorrect NEPA baseline for alternative analysis; narrowed the range of alternatives and omitted consideration of reasonable and feasible alternatives; failed to comply with the National Historic Protection Act, 54 U.S.C. §§ 300101 et seq. and other Historic Resource Laws by failing to conduct historic and cultural resource surveys in an appropriate area of direct effect. The Technical Comments identify significant underestimate of effects including pool surface water elevations and scope of effects rendering the NEPA analysis insufficient as a matter of law. Due to significant impacts of the proposal, and consistent with other dam removal and construction and modification projects of this magnitude, the Corps is required to complete an Environmental Impact Statement with full public participation; full public notice in the Federal Register following an adequate draft environmental document; incorporation of all data and completion of NEPA studies. The Corps has impermissibly cut short the NEPA and Corps processes, for example issuing the Draft Reports before information from the February 8 to February 15 drawdown field verification information could be processed and effects determined. For these reasons and issues detailed below, the Corps must revise its analysis, assess alternatives as discussed below, conduct necessary consultation and studies and reissue a draft document in Environmental Impact Statement form prior to taking federal action. NOAA-NMFS has stated in consultation documents that for bids for any work relating to the Corps proposal would not be awarded until January 2021 and that fish passage would be completed in October 2022, eight months after completion of the inner harbor dredging. NOAA-NMFS, 2017 Biological Opinion Supplement Biological Opinion, Deepening of the Savannah Harbor Federal Navigational Channel in association with the Savannah Harbor Expansion Project (NMFS Consultation No. F/SERJ2010105579)(Oct. 13, 2017)("2017 BiOp Supplement"), at 9. NEPA and Due Process may not be evaded by deadlines, but here the artificially short public participation is avoidable and inappropriate in light of the significant nature of the impacts.

I. The Proposed Action Violates Congress’ Explicit Mandate in the WIIN2016 Act

Under WIIN 2016, the Secretary is authorized to take one of two Options respecting the NSBLD as necessary: repair and modify the NSBLD and allow fish passage, or remove the NSBLD and construct a new structure.

(c) PROJECT MODIFICATIONS.—

(1) IN GENERAL.—Notwithstanding any other provision of law, the Project is modified to include, as the Secretary determines to be necessary—

(A)(i) repair of the lock wall of the New Savannah Bluff Lock and Dam and modification of the structure such that the structure is able—

(I) to maintain the pool for navigation, water supply, and recreational activities, as in existence on the date of enactment of this Act; and

(II) to allow safe passage over the structure to historic spawning grounds of shortnose sturgeon, Atlantic sturgeon, and other migratory fish; or

(ii)(I) construction at an appropriate location across the Savannah River of a structure that is able to maintain the pool for water supply and recreational activities, as in existence on the date of enactment of this Act; and

(II) removal of the New Savannah Bluff Lock and Dam on completion of construction of the structure; and

(B) conveyance by the Secretary to Augusta-Richmond County, Georgia, of the park and recreation area adjacent to the New Savannah Bluff Lock and Dam, without consideration.

WIIN2016 Act, 14 P.L. 322, 130 Stat. 1703 (Dec. 16, 2016), § 1319(C). WIIN 2016 was enacted December 16, 2016.

WIIN 2016 deauthorizes the NSBLD. WIIN 2016 does not require the Secretary to take any action, but if the Secretary determines action is necessary Congress has specifically prescribed the Secretary's actions as one of two options:

OPTION 1 Section 1319 (c)(1)(A)(i): repair of the lock wall of the NSBLD such that it would 'maintain the pool for navigation, water supply, and recreational activities, as in existence on the date of enactment of this Act,' and 'allow safe passage over the [NSBLD]' or shortnose sturgeon, Atlantic sturgeon and other migratory fish, OR

OPTION 2 Section 1319 (c)(1)(A)(ii): construction of a structure 'able to maintain the pool for water supply and recreational activities,' and removal of the NSBLD on completion of this construction. As a third alternative, the Secretary may take 'no action' and decide neither option is necessary.

Because Congress did not mandate the Secretary implement either OPTION 1 Section 1319 (c)(1)(A)(i) or OPTION 2 Section 1319 (c)(1)(A)(ii), the Secretary has a third option: take no action. The NSBLD would remain in place, unchanged. 1319 (c)(1)(A)(i) will be referred to as Option 1: NSBLD Lock Repair and Modification with Fish Passage and 1319 (c)(1)(A)(ii) will be referred to as Option 2: NSBLD Removal without Fish Passage. The No Action alternative will be referred to as Option 3: No Action.

Regardless of option selected, the Secretary is required to maintain the NSBLD pool surface water elevation albeit for slightly different purposes. Navigational purposes are included in Option 1, but not Option 2. Notably, Option 3: No Action would also maintain pool surface water elevation.

There is no legal disagreement between the Corps and Augusta regarding the Secretary's options under WIIN 2016 and limitation to the two Options under WIIN 2016. The Corps has, however, failed

Attachment: Legal Comments, City of Augusta, North Augusta and Augusta Utilities April 15, 2019 Comments on U.S. Army Corps February 14, 2019 Draft PAAR, SEA, FONSI Fish Passage at New Savannah Bluff Lock and Dam

to apply the clear language requiring pool surface water elevations be maintained, and the Corps has proposed alternatives not authorized by WIIN 2016 and exceeding its scope. The Department of Army, U.S. Army Corps of Engineers (“Corps”) issued a legal interpretation on May 25, 2017 stating that the Corps could implement “either of the following alternatives” reciting Option 1: NSBLD Lock Repair and Modification Option 1 and Option 2: NSBLD Removal without Fish Passage. U.S. Army Corps of Engineers, Memorandum for Commander South Atlantic Division, “Implementation Guidance for Section 1319 of the Water Resources Development Act of 2016 (WRDA 2016), New Savannah Bluff Lock and Dam, Georgia.” The Corps’ PAAR/SEA/FONSI public notice and PAAR/SEA/FONSI documents concur and recite these two options and so there is no legal disagreement as to applicability of the language. See PAAR/SEA/FONSI, Executive Summary, at i.

Augusta Utilities and North Augusta comment that despite the clear language of WIIN 2016, the Corps PAAR/SEA/FONSI proposed action, and alternatives violate the language of WIIN2016 in two major ways:

WIIN 2016 requires the Corps to repair the Lock Wall and Modify the NSBLD, not remove it, if the Secretary determines that Fish Passage is Necessary.

If the Secretary determines fish passage is necessary, WIIN 2016 requires the Corps to leave the NSBLD in place, repair the lock wall, and modify the NSBLD. OPTION 1 Section 1319 (c)(1)(A)(i). Congress explicitly **omitted fish** passage from Option 2 Section 1319 (c)(1)(A)(ii). Congress made clear that it intended that the NSBLD remain in place with repair and modification if fish passage was necessary. Thus, Alternatives 2-3 and 2-6 (including sub-alternatives) are not authorized under WIIN 2016 and are in fact contrary to WIIN 2016. The Secretary is not authorized to remove the NSBLD such that it would 'maintain the pool for navigation, water supply, and recreational activities, as in existence on the date of enactment of this Act,' and 'allow safe passage over the [NSBLD]' does not authorize the Corps to both remove the NSBLD and p

The Proposal and Alternatives Fail to Meet the Requirement of both OPTION 1 and OPTION 2 in Section 1319 (c)(1)(A) to Maintain the Pool.

The Corps' proposed alternative 2-6D lowers pool elevation by xx (modeled) and yy (actual observed) failing to meet the requirements of WIIN 2016. Corps HECRAS modeling shows each alternative lowers pools surface elevation and therefore no proposed alternative meets the requirements of WIIN 2016 to maintain pool surface elevations as in existence on the date of enactment. Augusta Utilities experts have shown that the Corps analysis actually understates the level of lowering of the pool surface water elevation, and is confirmed by field data from the February 8 through February 15 Corps drawdown of the pool behind the NSBLD done to demonstrate post-project conditions. Thus, no alternative proposed by the Corps meets the Congressional mandate that the Corps maintain the pool that existed on the date of enactment.

Congressmen Joe Wilson and Rick Allen testified at a March 31, 2019 Hearing regarding the Corps proposal and the WIIN 2016 Act, explaining the congressional intent was to maintain the pool upstream of the NSBLD and expressing concern that the Corps had misinterpreted the statute. Technical Comments, Appendix I. Congressman Wilson stated he was disappointed that the misinterpreted the intent of the WIIN Act and confirmed that the physical level of the pool at the time of WIIN 2016 enactment was clearly the required surface elevation criteria. Congressman Allen agreed and stated he was assured by the Corps that the pool level would be maintained. Congressman Allen and Wilson were joined in April 9, 2019 Letter by Senators Lindsey Graham, Johnny Isakson, Tim Scott, and David Perdue expressing concern at the Corps' interpretation of the WIIN 2016 Act and reiterating the intent to maintain pool surface water elevation. Technical Comments, Appendix B. That letter also expresses concern that the February 8 through 15 drawdown proved that the Corps' proposal 'does not appear to meet the requirements of the plain text of the legislation or the intent of Congress when it passed the WIIN Act.'

A. WIIN 2016 requires the Corps to repair the Lock Wall and Modify the NSBLD, Not Remove it, if the Secretary determines that Fish Passage is Necessary.

Where Congress includes particular language in one section of a statute but omits it in another section of the same Act, the Supreme Court has repeatedly interpreted the omission as clear Congressional intent that Congress intentionally and purposely omitted the provision or requirement. *Nat'l Ass's of Mfrs v. Department of Defense*, 138 S. Ct. 617, 625 (2018); *INS v. Cardoza-Fonseca*, 480 U.S. 421, 432 (1987); *Russello v. United States*, 464 U.S. 16 (1983).

i. The Corps Preferred Alternative, Proposal 2-6D to Remove the NSBLD Falls Under Option 2 Section 1319 (c)(1)(A)(ii) which Explicitly Omits Fish Passage

Congress was clear: if the Secretary determined Option 2 Section 1319 (c)(1)(A)(ii) was necessary, Congress did not authorize fish passage be implemented at NSBLD. By omitting fish passage, Congress clearly intended that fish passage not be included.

According, if fish passage is 'necessary' as per the Secretary's determination, the only option available to the Secretary is Option 1 Section 1319 (c)(1)(A)(i): repair of the lock wall of the NSBLD such that it would 'maintain the pool for navigation, water supply, and recreational activities, as in existence on the date of enactment of this Act.'

Congressional intent could not be more clear. By selecting Alternative 2-6D *and* including fish passage, the Corps has contravened Congress clear intent.

ii. If the Secretary determines Fish Passage is Necessary, then it is Required to Repair the Lock and Modify the NSBLD, not Remove the NSBLD

The language of the WIIN 2016 Act is clear. If the Corps wishes to address fish passage, it must repair the lock wall such that it maintains the pool for navigation, water supply, and recreational activities under Section 1319 (c)(1)(A)(i) of WIIN 2016. As discussed below, the Corps did not assess potential use of adjustable gates on the existing structure which will maintain the pool surface water elevation and allow for adaptive management, and include fish passage. See Figure 1, below:

Table 19: List of Intermediate Alternatives with Refinements	
Alternative Number	Alternative Description
2012 SHEP GRR (NAA)	Construct a 285' wide fixed crest weir at elevation 110 around SC side of NSBLD
1-1	Repair lock wall, retain dam, 200' wide fish passage ramp on GA side
1-2	Repair lock wall, remove dam, 380' wide fish passage ramp in place of dam
2-1	Remove lock and dam, 500' wide fixed crest weir @ elevation 105
2-2	Remove lock and dam, 500' wide fixed crest weir @ elevation 106
2-3	Remove lock and dam, 500' wide fixed crest weir @ elevation 107
2-4	Remove lock and dam, 500' wide fixed crest weir @ elevation 107.6
2-5	Remove lock and dam, 500' wide fixed crest weir @ elevation 110
2-6a	Remove lock and dam, 500' wide fixed crest weir @ elevation 110 with floodplain bench
2-6b	Remove lock and dam, 500' wide fixed crest weir @ elevation 107 with floodplain bench
2-6c	Remove lock and dam, 500' wide fixed crest weir @ elevation 108 with floodplain bench
2-6d	Remove lock and dam, 500' wide fixed crest weir @ elevation 109 with floodplain bench
2-7	Remove lock and dam, 500' wide fixed crest weir @ elevation 110 with bypass channel and one 50' wide gate
2-8	Remove lock and dam, 500' wide fixed crest weir @ elevation 110 with bypass channel and two 50' wide gates
2-9	Remove lock and dam, excavate park, 920' wide fixed crest weir @ elevation 110

Figure 1: List of Intermediate Alternatives from Corps PAAR/SEA/FONSI (Table 19 of PAAR)

The no action alternative under WIIN 2016, as well as NEPA, is retention of the current NSBLD in place with no change, as discussed below.⁴

B. The Proposal and Alternatives Fail to Meet the Requirement of both OPTION 1 and OPTION 2 in Section 1319 (c)(1)(A) to Maintain the Pool.

i. The Proposal and Alternatives Fail to Maintain the Pool and Reduce Surface Elevation from Existing Conditions.

None of the Corps' alternatives maintain the pool as it existed on the date of enactment. The pool has a water surface elevation of 115, as agreed by the Corps and confirmed below. See Technical Comments, Section V.A.; Technical Comments, Appendix J North Savannah Bluff Hydraulic Modeling Discrepancies Observed During Drawdown (McLaughlin Whitewater/Merrick & Company April 2019); Sections III, IV and V below. Each of the Corps alternatives fail to maintain pool surface water

⁴ As discussed below, the no action alternative identified by the Corps in the PAAR/SEA/FONSI is legally incorrect in that no action is considered to be a plan altering the NSBLD respecting the separate Federal action involved in the SHEP.

elevation. For example, regarding water intakes, the Corps models predicts pool surface water elevations at 111.9 at Augusta’s Hicks Raw Water intake station for alternative 2-6D:

Location	Pool Elevation (ft NGVD29) @3600 cfs							
	NAA	Alt 1-1	Alt 2-3	Alt 2-6a	Alt 2-6b	Alt 2-6c	Alt 2-6d	Alt 2-8
NSBLD	113.5	112.4	108.7	111.8	108.7	109.6	110.5	111.9
Potash/Fibrant/ et al.	113.9	112.8	109.9	112.3	109.9	110.6	111.3	112.4
SCE&G	114.0	112.9	110.2	112.5	110.1	110.7	111.4	112.5
Kimberly Clark	114.0	112.9	110.2	112.5	110.1	110.7	111.4	112.5
Hicks Raw Water	114.1	113.1	110.9	112.7	110.9	111.3	111.9	112.8
City of North Augusta	114.5	113.7	111.9	113.3	111.9	112.2	112.6	113.3

2019 PAAR, at 3.6.13, P. 93 (Table 27).

Indeed, under the Corps own analysis, each alternative would place surface water levels below the Corps’ calculated surface elevation of 114.1 feet mean sea level. No proposed alternative or assessed alternative complies with Congress’ mandate in WIIN 2016 that pool surface water elevations be maintained. The proposed alternative 2-6D violates WIIN 2016, as do all alternatives analyzed by the Corps. Additional detail is provided in the Technical Comments.

Augusta points out below that the No Action Alternative under NEPA consists of current, existing baseline conditions.

In the 2012 SHEP EA, the Corps states,

“The District maintains stable pool elevations (**near EL 115 feet**) during most river flows and raises the gates at the dam during high flows to reduce the backwater effects of the dam on the upstream pool and its adjacent development.”

2012 SHEP EA, App. C Mitigation Plan, at 71.

The baseline pool elevation is therefore, by the Corps’ own analysis and published studies, 115 feet. Similarly, USGS water stage records show that the Corps has actually operated the dam at an average normal level of 115.0. Augusta has retained engineering experts from Cranston Engineering and Merrick Engineering/McLaughlin Whitewater. Both firms have vast experience with hydraulic and hydrologic analysis, with Merrick/McLaughlin having designed the Corps Columbus Georgia dam removal and environmental enhancement for shoal bass and recreation. Cranston and Merrick concur that, based upon USGS datum, NSBLD design documents, and field measurements, water surface level elevations at NSBLD are consistent with the 2012 Corps baseline, and not the 2019 PAAR document:

Attachment: Legal Comments, City of Augusta, North Augusta and Augusta Utilities April 15, 2019 Comments on U.S. Army Corps February 14, 2019 Draft PAAR, SEA, FONSI Fish Passage at New Savannah Bluff Lock and Dam

Description	Water Elevations				Notes
	Lock & Dam ^a		Fifth Street Bridge ^b		
Datum	NGVD 1929	NAVD 1988	NGVD 1929	NAVD 1988	Assumed difference = 0.8'
Normal pool per original design ^c	115.0 - 114.5	114.2 - 113.7	115 N/A	114.2 N/A	
Corps' current operations					
"Normal" ^d	114.0 -114.5	113.2 - 113.7	115.1	114.3	
Range ^e	112.0 - 115.3	111.2 - 114.2	N/A	N/A	
Usual Levels (non-flood) per USGS gauges ^f	115.0 ^g	114.3	115.0	114.3 ^h	Approximate Water Year 2018 year-long medians, by inspection
Alternative Simulations Q= 8000 cfs from HEC-RAS Summary ⁱ					Elevations Produced from Questioned Model
Existing	114.0	113.2	116.1	115.3	Probably wrong
No Action Alt	114.0	113.2	116.1	115.3	Probably wrong
Alt 1-1	113.9	113.1	116.0	115.2	Probably wrong
Alt 2-6a	112.6	111.8	115.4	114.6	Probably wrong
Alt 2-6d	111.7	110.9	115.0	114.2	Inconsistent with observations 2/15/2019
Actual Elevations February 15, 2019	111.08	110.28 ^j	112.03	111.23 ^k	Flow rate at NSBLD was 7,270 cfs, near 8,000 cfs.
Desired by Cities and Counties ^l	N/A	N/A	115.2	114.5	
<p>Note: The actual instantaneous flow rates in the Savannah River on the morning of February 15, 2019, were 7,270 cfs at NSBLD and 5,422 cfs at Augusta Canal Diversion Dam</p> <p>References:</p>					

Description	Water Elevations				Notes
	Lock & Dam ^a		Fifth Street Bridge ^b		
Datum	NGVD 1929	NAVD 1988	NGVD 1929	NAVD 1988	Assumed difference = 0.8'
<ol style="list-style-type: none"> 1. Lock and Dam United States Geological Survey (USGS) gauge is located just upstream. Datum is NGVD 1929. 2. Fifth Street USGS gauge is located on first pier from Georgia side. Datum for the recording gauge is NAVD 1988. Zero of the recording gauge is 100.00. Note that the datum for staff gauge is NGVD 1929. Zero of the staff gauge (and previous recording records) is Elevation 102.06. Verified by field surveys by Cranston Engineering Group, P.C. 3. Construction plans: <i>Rehabilitation of Gates and Piers, New Savannah Bluff Lock and Dam</i>, Plate S-500, 12 March 1995; and Corps of Engineers, U. S. Army, Savannah, Georgia, District, <i>Special Flood Hazard Information Report, Savannah River, Augusta, Georgia</i>, August 1971, p. 7. 4. Draft Report, Appendix A, p. A-19. USGS records for Water Year 2018 contradict the Corps' assertion of operating range. 5. Draft Report, 2.2.2. Hydrology and Floodplains, p. 18. 6. Inspection of records of USGS gauge records for Water Year 2018 (October 1, 2017—September 30, 2018). 7. Gauge 02196999 at New Savannah Bluff Lock and Dam. 8. Recording Gauge 02126670 at Jefferson Davis (Fifth Street) Bridge. 9. Draft Report, Appendix A, Table 8. Summary of HEC-RAS Results, p. A-41. 10. Gauge 02196999 at New Savannah Bluff Lock and Dam. 11. Recording Gauge 02126670 at Jefferson Davis (Fifth Street) Bridge. Verified by actual field survey by Cranston Engineering Group, P.C. at Elev. 111.20 (NVGD 1988) on February 15, 2019 at 11:13 am EDT. 12. Resolutions by Augusta, North Augusta, Aiken County, and Columbia County. 					

Additional detail is provided in Technical Comments at Section V.A. A supporting engineering analysis has been provided as an Appendix to Augusta's comments with elevation and model assessment data, as well as field measurement data. Technical Comments, Appendix F, River Vision Plan, McLaughlin Whitewater (April 2019). Additionally, engineers performing analysis have identified several issues with modeling input and analysis, identified in "Summary of Discrepancies and Questions from Hec-Ras Model" attached to and referenced in the Technical Comments. See Appendices D, E. See also Technical Comments, Appendix J North Savannah Bluff Hydraulic Modeling Discrepancies Observed During Drawdown (McLaughlin Whitewater/Merrick & Company April 2019).

The Technical Comments and supporting memoranda show that the Corps used a lower elevation than the pool level specified by the WIIN 2016 Act. Specifically, the Corps used an elevation of 113.2 where the Corps' own documents and operational records identify a. See Draft Report, Table 8, Page A-41. The Technical Comments identify field data taken during the Corps February 8 through 15 drawdown showing significantly lower pool elevations than predicted by the Corps in the Draft Report. Technical Comments Section V.A, and generally; Technical Comments, Appendix J North

Savannah Bluff Hydraulic Modeling Discrepancies Observed During Drawdown (McLaughlin Whitewater/Merrick & Company April 2019).

The Corps has identified alternative 2-6D as the Proposed Alternative. February 16, 2019 Public Notice. That alternative results in reduction in pool of 3.1 feet as compared to the 115 feet elevation the Corps identified in the 2012 SHEP EIS. The reduction in pool is 2.2 feet using the Corps improper baseline of 114.1 feet elevation in the 2019 PAAR/SEA/FONSI.

In selecting 2-6D as the preferred alternative, the Corps has not complied with WIIN2016. The Corps states “Alternative 2-6 [maintains] the functionality of the pool for water supply and recreation . . . in compliance with WIIN Act, Title I, WRDA of 2016, Section 1319 (c)(1)(A)(ii).” Notwithstanding, the Corps insertion of ‘functionality’ constitutes an impermissible deviation from the clear language of WIIN2016 and accordingly Alternative 2-6D does not comply with Congress’ intent by failing, as the Corps admits, to maintain the pool surface water elevation in existence at the time of enactment of WIIN 2016. The use of a ‘functionality’ approach was specifically rejected by Senator Lindsay Graham, Senator Johnny Isakson, Senator Tim Scott, Senator David Perdue, Congressman Joe Wilson and Congressman Rick Allen. See Technical Comments, Appendix B, April 9, 2019 Correspondence to Corps of Engineers.

Under either analysis, alternative 2-6D violates WIIN 2016 by reducing pool surface water elevations. The reduction is significant in that portions of the river are shallow and 2-6D will leave river margins and other areas dewatered and shallow by several feet. The result will affect not only municipal water supply but recreation as prohibited in WIIN 2016.

The WIIN Act requirement to maintain the pool surface water elevation of the NSBLD is for explicit purpose of recreation and water supply. Technical comments identify adverse impacts on water supply and recreation. Technical Comments at VII; Appendix G. Recreation and water supply are of critical importance to any Region, but Augusta has been water-dependent since its incorporation including significant investments in water projects, the Augusta Canal, the Augusta and North Augusta waterfront. Under NEPA and Corps regulations, the Corps is required to consider water supply and recreation as well as socioeconomic, environmental and aquatic impacts. Corps regulations specifically identify the purpose of Corps civil works water and related land resources project planning is to contribute to national economic development consistent with protecting the Nation’s environment, pursuant to national environmental statutes, applicable executive orders, and other Federal planning requirements. ER 1105-2-100 Economic and Environmental Principles for Water and Related Land Resources Implementation Studies, at 1-2, 2-1 (Apr 22 2000)

ii. PAAR documents apply incorrect criteria for Impacts in Violation of WIIN 2016

In the PAAR Engineering report, Appendix A, the Corps states that “the weir configuration for fish passage that is ultimately adopted must balance maintaining a pool for water supply and **minimizing residential flooding impacts, while keeping construction costs reasonable.**” Because WIIN2016 requires maintenance of recreation, the Corps placing costs and flooding above WIIN 2016 explicit requirements to maintain pool surface water elevations violates WIIN 2016. In applying incorrect and explicitly rejected criteria, the Corps’ analysis is arbitrary and capricious, an abuse of discretion, or otherwise not in accordance with law and must be rejected.

iii. The Corps is Prohibited by the WIIN 2016 Act from expending funds except in accordance with the Specific Authorization, Including Maintaining the Pool

As part of the Water Resources Development Act, the Corps is prohibited from expenditures of federal funds inconsistent with or contrary to WIIN 2016; see also 33 C.F.R. 263.15(b). The Corps is prohibited from implementation and expenditures on alternatives which do not meet the WIIN 2016 criteria for pool surface water elevations, or which would implement options other than Option 1: NSBLD Lock Repair and Modification with Fish Passage - 1319 (c)(1)(A)(i), Option 2: NSBLD Removal without Fish Passage - 1319 (c)(1)(A)(ii), or taking no action at the NSBLD.

II. Deauthorization of NSBLD is a Separate Federal Actions for the Purpose of NEPA Analysis

At the time the SHEP was developed, the NSBLD was an authorized Federal project required to be maintained. As set forth in environmental documents:

A. The lock and dam is a Congressionally-authorized project; therefore, the Corps is obligated to maintain the project as Congress provides funding for such actions.

B. The current authorization language (WRDA 2000), amended in Omnibus Act 2001, calls for repair and rehabilitation of the lock and dam structure, construction of a fish passage, and conveyance of the Lock and Dam to the City of North Augusta.

C. Removal of the structure would adversely impact the freshwater supply of eight major users.

SHEP EIS, Section 5.03.2; 2012 SHEP EIS, Appendix C Mitigation Planning, at Section C.1. P. 65

The Record of Decision, in fact, specifies that fish passage will be 'around the New Savannah Bluff Lock and Dam' clearly indicating the dam will be left in place. Record of Decision, at Compensatory Mitigation, item a (Page 2)(Oct. 26, 2012).

WIIN 2016 makes clear the Corps has limited options: Option 1: NSBLD Lock Repair and Modification with Fish Passage - 1319 (c)(1)(A)(i), Option 2: NSBLD Removal without Fish Passage - 1319 (c)(1)(A)(ii), or taking no action at the NSBLD. Under Corps regulations, the Corps is required to designate legislative authority as the primary purpose in NEPA analysis, federal actions, and Corps required reports and activities. 33 C.F.R. 263.15. The SHEP authorization and NSBLD deauthorization are separate legislative pronouncements. Under federal law, the Corps may not implement cross purposes and any interaction between the two must harmonize the language and intent of the statutes. The Corps' Draft Reports omit and ignore the plain language of WIIN 2016, fails to respect clear Congressional intent to maintain pool surface water elevation, and impermissibly selects and presents alternatives not authorized under WIIN 2016.

The stated purpose of the project is to pass sturgeon upstream of the NSBLD. PAAR, at 1.3. That is a different purpose than deauthorization of the NSBLD with the options described in WIIN 2016.

The SHEP and NSBLD actions must be treated separately for purpose of NEPA analysis, and the purpose, intent and language of each enactment must be implemented with fidelity. By failing to

implement WIIN 2016 and combining the NEPA analysis with the separate SHEP project, the Corps is in violation of WIIN 2016 requirements and NEPA.

III. The Corps Failed to Develop an Appropriate No Action Alternative and Baseline

The Corps improperly identified baseline. For the purpose of assessing effects under NEPA, NEPA makes clear that baseline is existing conditions. However, the Corps has considered “the original design is considered the No Action Alternative (“NAA”) in the comparison of alternatives during plan formulation.” PAAR, Section 1.0. That original design is substantially different from a baseline environmental perspective and NEPA perspective.

Under NEPA, environmental baseline analyzes the effects of past and ongoing human and natural factors leading to the current status of the project and impacted area. Proper baseline is existing conditions, required to identify the environmental consequences of a proposed agency action. *Am. Rivers v. FERC*, 201 F.3d 1186, 1195 (9th Cir. 1999). The proper baseline is the status quo such that “the reader may compare the other alternatives’ beneficial and adverse impacts related to the applicant doing nothing.” *Kilroy v. Ruckelshaus*, 738 F.2d 1448, 1453 (9th Cir. 1984); *Ctr. for Biological Diversity v. United States BLM*, 746 F. Supp. 2d 1055.

The Corps NAA is also legally invalid because, based upon the Corps’ own analysis and statements, the 2012 SHEP Plan is no longer legally available. 2012 SHEP at 3.5.1, Page 61. The status quo, or existing baseline, is the current condition with the NSBLD in place and under normal operations. As noted above, the Corps stated in the 2012 SHEP EIS that baseline was a pool elevation of 115 feet at the NSBLD. In the 2019 PAAR, the Corps drops baseline at the NSBLD. The Corps, impermissibly, attempts to justify its change in baseline by the 2012 SHEP mitigation plan which was never implemented.

Thus, the baseline used by the Corps is incorrect, violates NEPA requirements and is arbitrary, capricious, an abuse of discretion and otherwise not in accordance with law. It is also not representative of existing conditions, or status quo, and therefore cannot provide a meaningful baseline for environmental impact analysis.

Additionally, the 2012 SHEP could not serve as the baseline, because it was developed under a completely different set of assumptions and legal bases. The Corps application of the 2012 SHEP EIS never-constructed mitigation as baseline also violates the WIIN 2016 Act provisions, by completely avoiding any assessment which would compare the Corps’ alternatives and proposal to the pool surface water elevations required to be maintained under WIIN 2016. Thus, the Corps has violated both WIIN 2016 and NEPA.

NEPA requires that an agency's alternatives analysis include a "no build" alternative. 40 C.F.R. § 1502.14(d). "Without [accurate baseline] data, an agency cannot carefully consider information about significant environment impacts . . . resulting in an arbitrary and capricious decision." See *N. Plains Res. Council, Inc. v. Surface Transp. Bd.*, 668 F.3d 1067, 1085 (9th Cir. 2011). Accordingly, courts not infrequently find NEPA violations when an agency miscalculates the "no build" baseline or when the baseline assumes the existence of a proposed project. See, e.g., *Friends of Yosemite Valley v. Kempthorne*, 520 F.3d 1024, 1037-38 (9th Cir. 2008); *N.C. Alliance for Transp. Reform, Inc. v. United States DOT*, 151 F. Supp. 2d 661, 690 (M.D.N.C. 2001).

The no build or no action alternative under NEPA, as well as WIIN 2016, is no action – leaving the NSBLD in place with no fish passage and no change in operations. The Corps has failed to analyze or even consider this no build or no action alternative.

By applying the incorrect No Action Alternative, the Corps has failed to assess impacts of the 2012 SHEP Plan. For example, the Corps concludes “adverse environmental impacts to aquatic resources from the NAA are expected to be limited to short term impacts during construction” (PAAR at 3.6.3) for the SHEP 2012 Plan, ignoring the aquatic resource impacts of lowering the pool surface water elevation.

By applying the incorrect baseline, the Corps has underestimated impacts for each of its alternatives. This error requires the Corps to go back and reperform its modeling analysis and impact assessment and compare to current conditions baseline.

IV. The Corps failed to Consider a Reasonable Range of Alternatives

NEPA requires that the Corps analyze a range of reasonable alternatives are to be selected by reference to the project implemented. See 40 C.F.R. § 1502.14; Calvert Cliffs' Coordinating Comm., Inc. v. U.S. Atomic Energy Comm'n, 146 U.S. App. D.C. 33, 449 F.2d 1109, 1114 (D.C. Cir. 1971); Am. Rivers v. Ferc, 201 F.3d 1186, 1199, 1999 U.S. App. LEXIS 34820; Alaska Wilderness Recreation and Tourism Ass'n, 67 F.3d at 729. An agency should not "disregard alternatives merely because they do not offer a complete solution to the problem." Natural Resources Defense Council, Inc. v. Morton, 148 U.S. App. D.C. 5, 458 F.2d 827, 836 (D.C. Cir. 1972). Once an agency identifies the "reasonable alternatives" to a proposed action, NEPA and Council on Environmental Quality regulations also require an agency to identify the "adverse environmental effects" of each alternative. See 42 U.S.C. § 4332(2)(C)(ii); 40 C.F.R. § 1502.16.

Corps' regulations require that alternative plans shall be formulated to identify specific ways to achieve planning objectives within constraints, so as to solve the problems and realize the opportunities ER 1105-2-100 Economic and Environmental Principles for Water and Related Land Resources Implementation Studies, at 2-4 (Apr 22 2000). The regulations state that “it is essential that planners understand and fully visualize the problems of the planning area and how their plans will address these problems.”

Section 904 of the Water Resources Development Act of 1986 (WRDA of 1986) requires the Corps to address the following matters in the formulation and evaluation of alternative plans:

- Enhancing national economic development (including benefits to particular regions that are not transfers from other regions).
- Protecting and restoring the quality of the total environment.
- The well-being of the people of the United States.
- The prevention of loss of life.
- The preservation of cultural and historical values.

WRDA 1986; 1105-2-100 Economic and Environmental Principles for Water and Related Land Resources Implementation Studies, at 2-5 (Apr 22 2000).

The Corps states that the purpose of the action is “to mitigate for impacts to two endangered sturgeon species.” PAAR at 1.3. The Corps is referring to impacts from another project, the SHEP Project. An agency may not “define [a] project so narrowly that it foreclose[s] a reasonable consideration of alternatives.” *Davis v. Mineta*, 302 F.3d 1104, 1119 (10th Cir. 2002); see *Simmons*, 120 F.3d 664 (7th Cir. 1997). Here, although the purpose is incorrect as discussed in Section 2, above, the stated purpose to mitigate for sturgeon habitat impact from the SHEP (PAAR, at Section 1.3.) requires assessment of a full range of reasonable and feasible alternatives to achieve that habitat mitigation purpose – not just removal of the NSBLD and not just action at the NSBLD. There are many other ways to mitigation for sturgeon habitat impacts than action at the NSBLD and the associated significant adverse effects of the Corps’ proposal.

As noted above, NOAA-NMFS, in consultation with the Corps under the Endangered Species Act, Section 7, determined in 2011 that the SHEP would adversely affect juvenile Atlantic sturgeon and juvenile, sub-adult, and adult shortnose sturgeon would be adversely affected by habitat alterations resulting primarily from changes in water quality (salinity and dissolved oxygen) due to dredging of the Savannah inner harbor. Data was lacking for NMFS to determine impacts specifically, so NMFS identified habitat loss as a surrogate measure by which to measure and monitor the extent of these effects. NOAA-NMFS, 2017 Biological Opinion Supplement Biological Opinion, Deepening of the Savannah Harbor Federal Navigational Channel in association with the Savannah Harbor Expansion Project (NMFS Consultation No. F/SERJ2010105579)(2011). As noted in the 2012 SHEP EIS, in consultation with NOAA-NMFS, or NOAA-Fisheries), it was determined that the SHEP might ‘take’ four individual sturgeon through death (20 relocation takes were predicted). SHEP EIS, App. B; NOAA-NMFS, Biological Opinion, Deepening of the Savannah Harbor Federal Navigational Channel in association with the Savannah Harbor Expansion Project (NMFS Consultation No. F/SERJ2010105579) (Nov. 4, 2011). Actual documented sturgeon take is very low – the Corps reports “Throughout CESAD (including Savannah Harbor), only 10 sturgeon takes have been documented since 1990, all of which were Atlantic sturgeon and consisted of 1 take by a clamshell dredge and 9 by a hopper dredge. Though pipeline (hydraulic cutterhead) take of Shortnose sturgeon have been documented in CENAD (n=5) no incidental take of Shortnose or Atlantic sturgeon have been documented by pipeline (hydraulic cutterhead) dredging activities in CESAD.” 2012 SHEP EIS, App. B Biological Assessment.

The Corps failed to consider a full range of reasonable and feasible alternatives to mitigate for impacts to two endangered species. Numerous other mitigation alternatives to address the impacts of the Savannah Harbor Expansion are available.

- Habitat: Because NOAA-NMFS and the Corps used habitat as a surrogate for species impact to mitigate for potential take, habitat alternatives should have been assessed. The Corps failed to consider potential enhancement for sturgeon in other areas of the Savannah River. Assessment and enhancement in areas known to be currently utilized by sturgeon provide greater potential benefits to the species than opening a new area above the NSBLD where it is not known whether the species would use the habitat area. Habitat enhancement, opening of other habitat, removal of other obstructions, and other habitat options were available and not considered.
- Notably, On August 17, 2017 NMFS and USFWS designated critical habitat for the Atlantic sturgeon pursuant to the Endangered Species Act (ESA). 82 Fed. Reg. 39160 (Aug. 17, 2017).

In designating critical habitat for distinct population segments of the Atlantic Sturgeon, NMFS and USFWS limited to the designation the main stem Savannah River from the New Savannah Bluff Lock and Dam downstream to rkm 0 (South Atlantic Unit 3). Thus, the area above NSBLD is not critical habitat and was excluded by NMFS and USFWS as species recovery priority habitat under the ESA. Mitigation within critical habitat designation area is appropriate, not outside the critical habitat designation area. The critical habitat designation identifies numerous specific areas which are already accessible and suitable for habitat enhancement measures, but none has been considered by the Corps or NMFS-NOAA. Habitat enhancement in these areas is more likely to result in successful benefits to sturgeon population for both species than the Corps' proposal and without the concomitant significant adverse effects and unknown risks to the species itself from poor habitat conditions.

- Any introduction of sturgeon to the area would constitute an experimental population requiring specific ESA determination and procedures including separate public participation regarding boundaries and analysis of extent the population would be affected, be able to survive or establish in the future. ESA Section 10, 16 U.S.C. § 1539. Experimental population introduction "should be viewed as an agreement among the Federal agencies, the state fish and wildlife agencies and any landowners involved." H.R. Rep. No. 567, 97th Cong., 2d Sess. 34 (1982)). Having excluded the area from critical habitat, the determination to pass sturgeon into the area is arbitrary and inconsistent with the critical habitat designation. The Corps has failed to assess the habitat upstream of the NSBLD, as discussed in greater detail in Section IX, below. The Corps has also failed to analyze the effects of introducing species into the area as a potential experimental population.
- Due to upstream dam releases, pollutants and pollution as well as natural environmental conditions, it is known that the area upstream of the NSBLD and below Stevens Creek and the Thurmond Dam often experience low dissolved oxygen ("DO"). Low DO is a known threat to sturgeon. Actions which would place protected species at risk from low DO or other conditions require assessment under NEPA as well as consideration and consultation with resource agencies. The Corps has not assessed the habitat that it is placing sturgeon, at all. The alternative fail to assess habitat suitability and water quality issues. Data indicate toxic compounds in sediment, supersaturation of total dissolved gases, and with the changes proposed by the Corps no habitat study has been performed to determine suitability of habitat post dam removal or alteration. Without study, it is highly likely that the Corps will be required to make additional adjustment and changes to the river channel, habitat, and even the Thurmond dam upstream. None of these potential future actions have been considered. . As a result, it is highly likely that other habitat alternatives other than removal or passage around the NSBLD would provide appropriate habitat mitigation to meet the Corps and NOAA-NMFS resource goals for mitigation for the SHEP.
- Alternative Passage: The Corps has not assessed other passage methods that would not involve lowering the pool surface water elevation and would otherwise meet WIIN 2016. As an example, species relocation and placement (trap and truck) has not been considered as an alternative, although it would meet the purpose of the PAAR/SEA/FONSI and maintain pool surface water elevations. Other methodologies such as fish ladders, Denil ladders, elevation systems or fish lifts, vertical slot, lock passage (NSBLD locks have been inoperational), steep pass, pool and weir, and other common alternatives in fish passage assessments have

not been considered. Failing to consider these other alternatives renders the NEPA document deficient and is in violation of NEPA requirements for a full assessment of a range of reasonable alternatives.

- Adjustable Gate Alternatives: It is highly likely that any alternative will need to include gates and/or require a significantly widened rock ramp (much wider than the proposed 500 feet) to meet fish passage and maintenance of the upstream pool objectives. However, a gate type or configuration different from those currently installed at the NSBLD is advantageous to readily integrate with a rock ramp passage as proposed in most of the presented alternatives. Adjustable gates, commonly used at hydropower dam in a variety of settings provide much greater flow control than typical spillways and great benefits for refining fish passage flows as well as maintaining pool surface water elevations as required by WIIN 2016. This common engineering alternative was not even considered by the Corps in the Draft Reports.
- Dissolved Oxygen Enhancement: According to the National Marine Fisheries Service (NMFS, or NOAA-Fisheries), the primary impact of “[t]he proposed expansion, deepening, and modification of the Savannah Harbor through will have a significant effect on the habitat of sturgeon” and “[s]turgeon have been shown to be impacted by low dissolved oxygen levels, and mortality of sturgeon can occur within hours of exposure to low dissolved oxygen.” 2012 SHEP EIS, App’x. Z at p. 189. Additional DO enhancement in the harbor or other areas of the Savannah River would meet the species benefit goals without the significant adverse impacts to the Augusta Region as proposed by the Corps.

With respect to the alternatives that were analyzed, the Corps omitted locational alternatives for the fish passage structure, and the Draft Report and associated documents fail to describe locational alternatives, their location, and why they were excluded from analysis. PAAR, at 3.2.1.

Without assessment of a full range of alternatives, the Corps is in violation of NEPA and risks significant and drastic impact to the Augusta Region. The Corps must assess these and other alternatives. Augusta has developed an alternative utilizing adjustable gates on the existing structure which will maintain the pool surface water elevation and allow for adaptive management, and includes fish passage.

V. Alternative Evaluation Criteria Fail to Adequately Compare Impacts

The Corps’ alternative analysis fails to adequately assess impacts between alternatives, omitting consideration altogether of the greatest impact of the proposal – socioeconomics, as well as historic resource impacts of alternatives and benefits of leaving the NSBLD in place, the construction related impacts which are vastly increased for each dam removal alternatives, and failing to assess significant and important distinctions amongst alternatives during low flow or critical conditions (e.g. 3,600 cfs to 5,000 cfs) when effects on water supply, recreation, recreational navigation, socioeconomics, property rights and riparian rights, are greatest, and environmental impacts. The Draft Report, which is a NEPA reports specifically requiring assessment of effects on the environment, environmental impacts were not even identified as a preliminary screening criteria even though the differential in effects between alternatives are substantial. PAAR, at 3.1-3.5. Two of the seven criteria are economics but only as to Corps’ expenditures for construction costs and operation and maintenance. PAAR, Table 15. Fish passage effectiveness – which is the identified purpose of the project at Section 1.3 of the PAAR – is also omitted from screening criteria but then appears to have been applied to

eliminate alternatives in Section 3.4 (Table 20), but without any justification, support, or information for public review and consideration. By omitting economic impact to the Augusta Region but including economic costs as two of seven screening criteria, the Corps has failed to take a hard look at and consider the effects of alternatives in violation of NEPA.

As noted in the Technical Comments at V.A., one of the most significant impacts of the proposed project is impact on pool surface water elevation and flows. Direct impacts will be experienced in the seventeen mile pool upstream and several miles downstream. The Technical Comments point out that the Corps' analysis failed to compare or even assess low flow which will represent critical conditions for most impacts: recreation, water supply, aquatic habitat. Flow between 3,600 cfs and 5,000 cfs will occur **24% of the time** and is also much more likely to occur during summer recreational periods where greatest impact will occur, and during high water use periods where water demands and withdrawals are greatest. Technical Comments at V.G. Alternatives must address critical conditions, or these low flows below 5,000 cfs, as some of the more significant effects of the action. The Technical Comments identify significant failures to adequately assess impact on water surface elevation, recreation, special events, docks and other resources.

The Corps failed to assess critical conditions impacts for each alternative, thereby underestimating effects and precluding comparison of alternative effects. The Corps also failed to assess historic resource impacts of alternatives. As noted in Section IX.B, below, the Georgia DNR Historic Protection Division determined the Corps proposal will affect historic resources. However, the affect is significantly greater for removal alternatives as opposed to alternatives such as 1-1 which maintain the NSBLD in place with the only historic effects relating to the lock repair and necessary modifications. Alternatives leaving the NSBLD in place also have the historic resource benefit of providing opportunities for historic resource education, preservation, and tourism.

The Corps failed to consider socioeconomic impacts among the alternatives. As noted below, the Corps' socioeconomic effects analysis is deficient, and socioeconomic was identified by the public and local officials as one of the greatest adverse impacts of the proposed action. See Technical Comments, generally; Technical Comments, Appendix I (March 31, 2019 Public Hearing). As between dam removal and dam remaining with lock repair alternatives, socioeconomic impact is vastly disparate. Similarly, socioeconomic effects are significant for any alternative which lowers pool elevation. Failure to assess socioeconomic effects amongst alternatives renders the alternatives analysis flawed.

The Corps arbitrarily considered costs without concomitant economic impacts of the alternatives, which skews alternative screening and analysis. Moreover, two of the seven screening categories represent economic costs to the Corps, further skewing alternatives analysis overweighting project economics (which is also not a NEPA category for analysis of effects to the human environment and environment generally), without any consideration of economic effects to the Augusta Region.

The Corps has also failed to assess construction related impacts, skewing the alternatives analysis. WIIN 2016 Option 1 alternatives which leave the NSBLD in place have significantly reduced construction related impacts as compared to removal of the NSBLD, but these effects were not considered in the alternatives analysis. Additionally, the Corps failed to assess historic resource impacts in alternatives screening and assessment. WIIN Option 1 alternatives have vastly reduced historic resource effects, and leaving the NSBLD in place actually has historic resource benefits that

have been omitted from consideration. See Section X.B., below. From a historic resource perspective, Alternative 1-1 is superior but this benefit is not considered.

As discussed in the Technical Comments and in Section IV, above, the Corps did not even consider adjustable gates which have become common and have documented benefits for pool control, adaptive management for ecosystem protection, and flood control.

The analysis that is provided is insufficient and obscure. The Corps states “Regarding Alternative 2-6, NOAA has provided information to USACE that this design is the second most favorable alternative design being evaluated for shortnose and Atlantic sturgeon and does not anticipate any major fish passage issues with the concept” but has not provided any citation to such information, assesses such information, or provided the public with this information for public participation and comment information. See PAAR, at 3.6.6.4; 3.6.6.5. Mere provision of a position from another federal agency is insufficient analysis and justification under NEPA, and places the Corps’ responsibilities for NEPA compliance and analysis with another Federal agency which is not lead agency for the proposed action and not otherwise involved in the NEPA process. If NOAA’s determinations and this undisclosed information forms the basis for alternatives analysis, then the action should involve NOAA as lead agency and decisionmaker, and at a minimum provide basis for the analysis and justification. In actuality, so little is known regarding sturgeon passage and so few examples of successful passage are available that distinctions between the alternatives respecting fish passage are arbitrary and capricious, without scientific bases, and given the very small sample sizes scientifically statistically insignificant.

With omission of the most significant impacts from the alternatives analysis, and failure to disclose or justify the distinctions between the alternatives on fish passage which is the stated purpose of the project, the alternatives analysis fails to meet the requirements of NEPA.

VI. The Corps Improperly Eliminated Alternatives Prior to the Close of the Comment Period and Prior to Receiving Comment

The Corps eliminated alternative 1-1 prior to close of the comment period, in violation of NEPA requirements. Of the alternatives, 1-1 represented the highest pool surface water elevation and of the alternatives presented, 1-1 was the alternative chosen by Augusta and North Augusta of all of the issued alternatives as the least damaging alternative to the Augusta region. However, during the comment period, the Corps improperly eliminated alternatives, specifically including the alternative which had the least impact on pool level and surface water elevation – Alternative 1-1. According to the Corps blog of March 26, 2019, just three weeks prior to the close of the public comment period the Corps eliminated Alternative 1-1. “Alt 2-6d is not the only in-channel alternative”, USACE March 26, 2019 (last accessed March 27, 2019, at <https://balancingthebasin.armylive.dodlive.mil/2019/03/26/alt-2-6d-is-not-the-only-in-channel-alternative/>).

Because the Corps modeling has demonstrated errors and was proven erroneous by the field observations February 8 through 15, its basis for eliminating 1-1 is arbitrary and capricious, an abuse of discretion and otherwise not in accordance with law.

The Corps has procedurally erred in eliminating alternatives prior to receiving comment, prior to the close of the comment period, and without affording Due Process and opportunity for comment and response. The improper elimination of 1-1 will irreversibly affect public comments, misleading members of the public and tainting the public comment process. The Corps must renotice its proposal and either include 1-1, or eliminate 1-1 in the proposal and state why in the PAAR/SEA/FONSI documents the alternative is eliminated with a full analysis.

VII. The Corps Predetermined the Action Prior to Public Comment in Violation of NEPA

In accordance with NEPA a federal entity may not predetermine outcome prior to public notice and comment and full consideration of alternatives, or applying resources to the outcome. *Davis v. Mineta*, 302 F.3d 1104 (10th Cir. 2002). Predetermining the outcome violates NEPA's requirement for a full and robust consideration of alternatives, a full consideration of effects of the action, and requirements for mitigation. Corps regulations require public involvement, collaboration and coordination in Civil Works planning. ER 1105-2-100 Economic and Environmental Principles for Water and Related Land Resources Implementation Studies, at 1-4 (Apr 22 2000).

A. Because the Corps did not Assess Habitat Alternatives to the Purpose of SHEP Mitigation, the Corps Improperly Predetermined it Would Implement Fish Passage at the NSBLD

As discussed in Sections IV and V, the Corps limited its alternatives to mitigate for sturgeon habitat 180 miles downstream to only alternatives that would remove the NSBLD (passage around the NSBLD was also improperly eliminated prior to receipt of comment) and limited alternatives of leaving the NSBLD in place but with significant effects on pool elevation and other resources. The Corps did not assess any other alternative that would achieve the habitat goal for the sturgeon, which would include habitat enhancement in numerous potential areas in the Savannah River watershed. Critical habitat has been designated for the Atlantic Sturgeon and NOAA-NMFS and Fish and Wildlife Service excluded the area upstream of the NSBLD.

By eliminating other alternatives, the Corps predetermined the NEPA decision that it would remove the NSBLD.

B. The Corps Applied for a Revision to the Endangered Species Act Biological Opinion Illegally Pre-Disposing has Already Determined it Will Implement Fish Passage in Violation of the WIIN 2016 Act

The Corps initiated consultation on the fish passage proposed February 14, 2019 on January 24, 2017. In doing so, the Corps improperly and in violation of NEPA pre-disposed its decision regarding the federal action. The Corps had decided and initiated consultation on only two alternatives, both of which failed to meet WIIN 2016 requirements for maintaining pool surface water elevation.

NMFS responded providing a schedule. NMFS stated "The current timeline for the in-river fish passage feature estimates that a construction contract for the fish passage would be awarded in January 2021 and that fish passage would be completed in October 2022 (i.e., approximately 8 months after the end of the Inner Harbor Dredging)." 2017 Biological Opinion, at 9.

The SHEP schedule does not justify violation of NEPA, shortening public participation and comment, rushing field verification and data analysis, improperly reducing the range or eliminating alternatives, or predisposing the decision before the public has had full opportunity to assess impacts.

C. NOAA-NMFS States that the Decision to Remove the NSBLD Has been Made

Even NOAA-NMFS public documents state, impermissibly, that the decision to remove the NSBLD and install a rock-arch fishway has already been made.

D. Issuing the Draft FONSI before Receiving Comments on the Proposal Violates NEPA and Due Process

The Corps has violated NEPA procedural requirements in combining a finding of no significant impact (FONSI) regarding significant changes to the Augusta Region with a separate federal action involving the SHEP 180 miles downstream. The SHEP PAAR/SEA/FONSI requests comments on alternatives, impacts, and opportunity to present additional alternatives. Issuing a FONSI before even hearing from the public on the proposal is arbitrary, capricious, an abuse of discretion, and not in accordance with the law which requires a meaningful opportunity to comment, a deliberative comment response from the Corps, and a final decision consistent with public input, legal requirements, and full assessment of effects.

NEPA prohibits commitment of irreversible and irretrievable resources prior to NEPA process, public input and preparation of environmental documentation. By proceeding with a biological opinion regarding proposals not yet issues for public comment and not yet finalized, issuing its draft FONSI, and other action described herein and in the Technical Comments, the Corps has predisposed its determination in violation of NEPA.

E. *By Committing Irreversible and Irretrievable Resources, the Corps has Impermissibly Predetermined the Outcome in Violation of NEPA*

The Corps has committed irreversible and irretrievable commitment of resources prior to completion of the NEPA process and public participation, in violation of NEPA. SHEP dredging has commenced and is ongoing; expenditures for contracts and other work are ongoing; and significant expenditures in furtherance of the Corps' desired proposal have been made.

VIII. 401 Certifications and Coastal Zone Management Act Consistency

Proposals to remove the NSBLD are not certified under Section 401 of the Clean Water Act. Coastal Zone Management Act consistency certification for the proposal is not complete and is required.

IX. The Corps Proposal and Analysis is Arbitrary, Capricious, and an Abuse of Discretion

The Corps has reversed and contradicted itself on several key facts and engineering determinations, rendering its proposal arbitrary, capricious, an abuse of discretion, and otherwise not in accordance with law.

In 2012, the Corps determined "removal of the NSBL&D is not feasible at this time." 2012 SHEP EIS, Appendix C Mitigation Planning, at Section C.1. P. 65. In 2019, the Corps determined removal is not only feasible but preferred. The reason the Corps determined removal of the NSBLD was infeasible is

due to “unacceptable due to the development that now occurs upstream along the pool created by the dam.” 2012 SHEP EIS, App. C Mitigation Plan, at 71. Augusta is currently contemplating a whitewater venue which would be precluded by either option proposed by the Corps, due to pool surface water elevation reductions as well as other project impacts. Technical Comments, at V.G Economic figures from a similar project in Columbus, Georgia, demonstrated economic benefits of \$74 million in capital investment, along with 42 new businesses, several university extensions, 400 new jobs, and \$24 million in gross revenues attributable to the quality of life improvements, recreational opportunities, and other direct and ancillary benefits of river recreation, which would be precluded by the Corps proposal. Technical Comments, Appendix F, River Vision Plan, McLaughlin Whitewater (April 2019). The Corps has not assessed the significant economic impacts to the Augusta Region of its proposal, at all.

With respect to fish passage, the 2012 SHEP EIS concluded that any of the three possible fish passage designs would “satisfactorily pass Shortnose sturgeon in both upstream and downstream directions, allowing SNS access to historic spawning areas at the Augusta Shoals.” 2012 SHEP EIS, App. C, at 81. However, in the 2019 PAAR, the Corps concludes that alternative 1-1 and 2-8 would be scored a ‘zero’ because of ‘risk of failure to reach the prime spawning ground during spawning season after a delay is an unacceptable risk.’ 2019 PAAR, at 100, Table 29. Corps documents and consultation information do not justify the absolute reversal in the 2019 PAAR from the 2012 SHEP conclusions regarding fish passage efficacy. As noted in the summary, there are no existing successful sturgeon passages in the Southeastern United States, and very limited success for related species. We can find no report of successful passage of sturgeon at the Cape Fear project, which NOAA-NMFS states is similar to the proposed NSBLD design and being assessed for efficacy for the NSBLD. Justification is therefore lacking for this wholesale change and reversal in position in the 2019 PAAR/SEA/FONSI regarding efficacy of Alternative 1-1. Scientific data is lacking, sample sizes too small, and success has not been established such that the conclusions in the 2019 PAAR/SEA/FONSI are supported and justified. Accordingly, the scoring is arbitrary and capricious, an abuse of discretion, or otherwise not in accordance with law.

The Corps estimated that impacts from the 2012 SHEP EIS Mitigation proposals would result in \$ 30 million in impacts to water intakes including municipal water supply. Since that time, Augusta has significant investment in its water infrastructure system, including water and wastewater. For the 2019 PAAR, the Corps estimates the impact to Augusta will be \$228,000 for vacuum assisted priming for surface water pumps. The SHEP PAAR/SEA/FONSI was issued for public comment on February 14 with inadequate time for calibrating the model or assessing the drastically different field observations and conditions from the anticipated modeled effects on water intakes. The Corps drawdown was commenced February 8 and continuing through February 15, 2019, rendering it impossible to assess within the public comment period. Additionally, as noted in the Technical Comments, the Corps HECRAS modeling appears to be in error underestimating drawdown elevations. Technical Comments at Section V.A. See also Technical Comments, Appendix J North Savannah Bluff Hydraulic Modeling Discrepancies Observed During Drawdown (McLaughlin Whitewater/Merrick & Company April 2019).

As discussed in the Technical Comments at Section V.F., the highest flow rate for Augusta’s water intake was modeled at 19.5 Mgal/d and the modeling indicated the existing system required modification. Actual constructed pump station capacity (with pump changeout) is 30 Mgal/d.

Augusta has designed the river intake system to be capable of delivering 60 Mgal/d at current water surface elevations. pump system No analysis was provided for this condition.

X. The Corps Failed to Fully Assess All Direct, Indirect and Cumulative Effects, and Impermissibly Limited Geographic Scope of Analysis

NEPA requires the Corps analyze direct, indirect and cumulative effects of the action. 40 C.F.R. Part 1508. The Technical Comments detail deficiencies in the Corps direct, indirect, and cumulative effects analysis, including (but not intended to limit) the following:

A. Wetland, Fringe Wetland, and Sensitive Riparian Areas

The Corps has not assessed direct, indirect and cumulative effects to wetland, fringe wetland, and sensitive riparian habitat (Section V.K, Impacts to Wetlands not Adequately Identified, Evaluated or Mitigated). The analysis was limited to the direct area in the vicinity of the NSBLD, and was based upon assessment from the 2012 SHEP. Hydrologic effects of dropping pool surface water elevations for the fifteen miles as will result from the Corps proposal and alternatives was not considered. The lowering of pool surface elevation will potentially affect fringe wetlands on the 15 mile reach of the Savannah River above the NSBLD, and wetlands with hydrologic surface connection to the river affected by reduction in pool elevations below existing surface water elevations. The Technical Comments document potential effects to thousands of acres of wetland, fringe wetland, and sensitive riparian habitat which has not been assessed in the Draft Report. The Corps failed to assess both direct and indirect effects as well as cumulative effects of the proposal and alternatives on these sensitive areas which are protected pursuant to Section 404 of the Clean Water Act. Technical Comments, Section V.K (documented potentially hundreds and possibly thousands of acres of wetland, fringe, and riparian habitat affected). Section 2.2 of the PAAR addresses only areas in the immediate vicinity of the NSBLD and includes no assessment of pool surface elevation lowering on the seventeen mile mainstem stretch and the direct and indirect effect on wetland, fringe wetland, and sensitive riparian habitat and ecosystem features. The proposal will affect wetland, fringe habitat and sensitive riparian areas through pool lowering as well, increased fluctuation in river elevation, and flooding along the seventeen mile reach as well as downstream. See also, Technical Comments, Appendix J North Savannah Bluff Hydraulic Modeling Discrepancies Observed During Drawdown (McLaughlin Whitewater/Merrick & Company April 2019).

For the wetland delineation included in the PAAR, in addition to being limited to the immediate vicinity of the NSBLD, the delineation is over five years old, and should be revisited and updated pursuant to the Corps' own regulation and guidance. Corps, RGL 90-06 ("delineations will not remain valid for an indefinite period of time")

B. Historic Resources

The Corps has not assessed direct, indirect and cumulative effects to historic resources. (Section V.M, Cultural Resources and Historical Considerations; Section V.G.7, 14 (Recreational)). The Augusta, North Augusta Region has a rich historic and cultural history with the Savannah River serving as the central feature for the region's history. The Corps failed to assess effects on historic resources. Due to the underestimate of effects on pool surface elevations, the Corps failed to fully assess effects to historic resources as required pursuant to 36 CFR Part 800 and the National Historic Protection Act (NHPA) Archaeological and Historic Preservation Act of 1974, the American Indian Religious Freedom Act of 1978, the Archaeological Resources Protection Act of 1979, the Abandoned

Shipwreck Act of 1987, and the Native American Graves Protection and Repatriation Act of 1990 (“Historic Resource Protection Laws”).

The NHPA and regulations require assessment of effects on historic resources within an area of potential effect. “Area of the undertaking’s potential environmental impact” or APE is defined as “that geographical area within which direct and indirect effects generated by the undertaking could reasonably be expected to occur and thus cause a change in the historical, architectural, archeological, or cultural qualities possessed by a National Register or eligible property.” 36 C.F.R. § 800.2; NHPA Regulations at 36 CFR Part 800, Protection of Historic Properties; Final Rule, 65 Fed. Reg. 77,698 (Tuesday, December 12, 2000 / Rules and Regulations) Because the Corps underestimated pool surface water elevations (Technical Report at V.A.), the Corps’ APE does not address all areas of direct and indirect effect. The Corps has failed to properly consider the scale and nature of the undertaking, which for direct effects of the Corps proposal is the 17 mile Savannah River Corridor that will experience reduced pool surface water elevations along the entire surface, as well as historic properties affected by the aesthetic change resulting from the pool elevation reduction. Indirect effects to historic resources have not been considered at all.

The Corps identified only fourteen historic properties are located within the APE, one of which is the NSBLD, but did not conduct a historic resource survey in the area of direct effect, indirect effect and APE. PAAR, at 35. Historic resource consultation, and NEPA analysis, cannot take place until the APE is surveyed and all eligible properties identified in consultation with the State Historic Protection Officer. The majority of the Corps analysis in the PAAR is simply photographs of select few of the fourteen resources it considered to be the totality of historic resources in the area. Augusta was founded in 1735 with a rich pre-settlement cultural history, and the river served as the focal point. By identifying only fourteen potentially affected resources, the Corps has inadequately considered historic and cultural resource effects and failed to meet the requirements of NEPA and the NHPA, and other Historic Resource Protection Laws.

For similar projects involving removal of dams, the Corps and other federal agencies have required in stream historic resource surveys.

The Corps must perform a cultural resource survey to properly identify historic resources, determine eligibility, and assess effects including all areas of direct and indirect effect within a proper APE, in consultation with Georgia DNR Historic Protection Division. Historic resource surveys including shovel tests should be conducted for the area of direct effect, including dewatered areas which have been fully or partially inundated since the NSBLD construction. As noted in Technical Comments at Section V.M., there is a high probability of encountering remains of previous occupations of Native Americans at New Savannah Bluffs. For similar projects involving dam removal, dewatering of river bottom and changes to flows, the Corps has conducted in-water assessments and found historic remains including native American historic effects, civil war related items, and others. No in stream work has been conducted here, and no shovel or other archeological survey standard studies.

Consultation documents attached to the PAAR consist largely of documents relating to the SHEP. The documents prove that the Corps undertook a much more detailed assessment of impacts to historic resources for the SHEP project, where here it simply lists fourteen historic resources with little to no analysis, and has done no survey or assessment. The Corps did contact the Georgia HPD, which wrote back that “HPD is unable to comment on the effects of the fish passage on archaeological resources or the effects of the related conveyance of the park and recreation area to Augusta-

Richmond County without additional information.” HPD re-confirmed the adverse effect of the project on the NSBLD. The Corps provided no information on water levels such that HPD could assess pool surface water elevation effects on historic resources. Consultation is not complete and must include survey information, eligibility determination and study, and effects report.

Under the NHPA and Historic Resource Laws, the direct effect on the NSBLD alone is sufficient to eliminate any alternative which would constitute removal or significant alteration of the NSBLD. The Corps has failed to consider and assess the beneficial effects of interpretive centers, educational and historic tourism under Alternatives 1-1 and 1-2 which leave the NSBLD in place. Similar projects, such as the City Mills and Eagle and Phenix dams in nearby Columbus Georgia, have had great historic resource benefits to the area and the Nation’s historic and cultural resource goals and preservation.

The Draft Reports conclude, erroneously, that “In accordance with Section 106 of the National Historic Preservation Act of 1966, as amended, the USACE determined that historic properties would be adversely affected by the recommended plan.” FONSI, at iii. This contradicts the direct conclusion of Georgia HPD and is of course incorrect when the removal of an eligible historic resource is involved.

The Corps has proposed no effective mitigation for the loss of historic resources.

Finally, issuing the Draft Reports before completion of historic resource consultation is complete is premature and in violation of the NHPA and NEPA, depriving the public and governments of Due Process and the ability to comment on effects to historic resources of the project. Without Georgia and South Carolina SHPO professional involvement in assisting with survey, eligibility, and effects determinations as well as mitigation, the public and local governments are deprived of the assistance of state and federal programs in determining historic and cultural resource effects and the ability to understand and comment on the effects, alternatives and benefits of leaving the NSBLD in place and eliminating effects of pool elevation on historic resources.

C. Environmental Impacts

Because the Corps underestimated pool surface water elevations, assessment of direct and indirect effects on environmental resources required by NEPA is incomplete.

As discussed in Technical Comments at V.A, each alternative presents drastic changes in pool surface water elevations, as well as flows, for a seventeen mile portion of the Savannah River. In addition to pool elevation impacts on habitat which were not assessed, the Corps’ proposal will drastically increase fluctuation of river level, scour, release and sluice sediment affecting benthic habitat, and increase flooding frequency. Technical Comments, Appendix J North Savannah Bluff Hydraulic Modeling Discrepancies Observed During Drawdown (McLaughlin Whitewater/Merrick & Company April 2019). Additionally, removal of the NSBLD will permanently and significantly effect flows downstream of the NSBLD. The Corps has not conducted assessment of environmental effects of the changes in flows, surface water elevations, and associated aquatic habitat, impact on species including life cycle stages, and associated impacts on resources such as recreation as required under NEPA. As noted in the Technical Comments, the area of direct effect includes habitat for ESA Candidate Species Robust Redhorse as well as numerous other species of importance and their habitat, including recreational fishing and protected birds. Technical Comments, Section V, V.J.1.

The Corps has also failed to assess construction related impacts. Alternatives which remove the NSBLD will have significant construction related direct and indirect impacts, and the alternatives and proposal involve several acres (10.24 to 11.88) of in-stream habitat alteration. PAAR, 3.6.3.3. The Corps has no analyzed effects of construction.

Construction related impacts have not been quantified or assessed and the construction analysis in the Draft Reports is insufficient lacking detail of the significant construction impacts which will affect environmental resources and will include direct impacts to the immediate NSLBD area as well as the over ten acres of river bottom altered by the proposal, and downstream effects from sediment release, disturbance, and required construction features. Hydraulic analysis of effects during construction, which will be substantial, were not assessed. Technical Comments, Appendix F, River Vision Plan, McLaughlin Whitewater (April 2019).

D. Aquatic Habitat Impacts

Contemporary standard environmental effects practice under these circumstances involves studies of the effect of changes on aquatic organisms and habitat, through studies and analysis such as the Instream Flow Incremental Methodology (IFIM). The Corps' "Instream Flow Incremental Methodology: A Synopsis with Recommendations for Use and Suggestions for Future Research (Nestler, Corps Environmental Laboratory, March 29, 1993) identifies IFIM studies as required to obtain impact assessment data which is 'quantifiable, repeatable, accepted, and defensible' to allow 'regulators, resource agencies, developers, and development agencies to determine relative impacts of different water resources development plans. The Corps identifies the USGS Physical Habitat Simulation System (PHABSIM) model as a recommended method to assess relationship between streamflow and physical habitat for various life stages of a species of fish or a recreational activity. Indeed, the City of Augusta canal, which is under proceedings with the Federal Energy Regulatory Commission under the Federal Power Act, 16 U.S.C. 791 et seq., conducted IFIM studies for a federal action which simply leaves the canal in place with no operations. IFIM studies have been used to assess suitability for sturgeon habitat. It would be arbitrary to require a local government to conduct IFIM studies to study alternatives in keeping the Augusta Canal in place, but not conduct any studies on the effects to flow and habitat presented by the wholesale removal of a dam which control the entire river flow but is proposed for removal.

Similarly, upstream and downstream habitat will be significantly modified including scour and sediment loss in benthic habitats, significantly increased fluctuations in river elevation and associated wetted habitat, increased flooding which creates habitat and stranding issues for aquatic organisms, and general effects overall of the substantial lowering of the seventeen mile reach of the Savannah River. Downstream reaches will also experience scour and sediment loss, increased fluctuations and flooding, and less stable depths and elevations. The Corps has not assessed these impacts in the Draft Reports in violation of NEPA. See Technical Comments, Appendix J North Savannah Bluff Hydraulic Modeling Discrepancies Observed During Drawdown (McLaughlin Whitewater/Merrick & Company April 2019).

Failing to conduct IFIM, PHABSIM, Sediment Transport Models, or similar studies renders the entire concept of passage to move sturgeon upstream of the NSBLD arbitrary and capricious, because without studies of habitat at the true anticipated habitat upstream of the NSBLD which is provided only through IFIM, PHABSIM and similar assessments, the Corps and NOAA-NMFS have no idea whether the habitat will be suitable for sturgeon. IFIM/PHABSIM will provide modeling of habitat

quality, water depths, flows and amount of habitat. Without IFIM/PHABSIM, the Corps may very well create a fish passage option which results in stranding of sturgeon, dewatering spawning habitat damaging egg and larval stages or preventing fertilization which would constitute take. Georgia EPD and South Carolina Department of Health and Environmental Control (SCDHEC) have identified the reach of Savannah River upstream of the NSBLD as impaired for several pollutants, and due to impairments Total Maximum Daily Loads and ongoing water quality assessments for dissolved oxygen, mercury, and other pollutants are in place. However, the Corps fails to include any assessment. Upstream Thurmond Dam has implemented dissolved oxygen measures, however, sturgeon can be particularly sensitive to oxygen supersaturation including artificial oxygenation systems, suffering mortality particularly at larval and juvenile stages. Dissolved gas supersaturation has negative effects on fish species as has been observed in other river systems in similar circumstances. Coughlin et al., The Effects of Dissolved Gas Supersaturation on White Sturgeon Larvae Issues; NMFS, Modeling the Effects of Dissolved Gas Supersaturation on Resident Aquatic Biota in the Mainstem Snake and Columbia Rivers (AR-1237)(undated). Oxygen supersaturation data at Section V. of the Technical Comments shows exceedance of supersaturation in the Savannah River in the habitat which the Corps seeks to introduce sturgeon. Levels as high as 120% have been documented, above the 103% identified as effecting salmonids and Current U.S. Environmental Protection Agency water quality criteria for saturation is 110%. In other river systems, sturgeon have shown proclivity to lay eggs at or near farthest upstream reach below dams, suffering from scour, egg displacement and other effects which would include lethal effects. The Corps regularly studies effects of supersaturation and it would be arbitrary and capricious and potentially constitute take under the ESA for the Corps to introduce sturgeon to habitat where eggs and larval stages would suffer harm and potential lethal effect. See, e.g. McGrath et al., "Total Dissolved Gas Effects on Fishes of the Lower Columbia River" Prepared for the U.S. Army Corps of Engineers Portland District, Portland, Oregon (Mar. 2006); Corps, Total Dissolved Gas Effects on Incubating Chum Salmon Below Bonneville Dam (Jan. 2009).

NOAA-NMFS and USFWS have concluded in other river system that dam operations constitute take of sturgeon due to effects of releases, scouring of substrate, and related dam water quality. See USFWS, Biological Opinion for ACF Water Control Manual (2016). As noted in the Technical Comments, Appendix J North Savannah Bluff Hydraulic Modeling Discrepancies Observed During Drawdown (McLaughlin Whitewater/Merrick & Company April 2019), the project is likely to create sediment scour, affecting habitat which can be important for spawning for sturgeon and other species including fishes, crayfish and other invertebrates, reduce sediment, and the design will actually promote sediment sluicing. The Corps has not considered these habitat issues or the potential for take of sturgeon within the upstream habitat, or the potential effect on upstream dam operations which would be required to be modified to avoid take under prohibitions under Section 9 of the ESA making take unlawful. If the purpose of the project is successful in introducing sturgeon, these impacts are direct, indirect and cumulative effects of the action which must be considered.

Additional assessment of upstream NSBLD habitat is necessary and appropriate where the Corps intends to place an endangered or threatened species in the area. Impacts from low dissolved oxygen, excessive oxygen supersaturation

E. Endangered and Protected Species

The Corps developed a list of protected species which omitted the seventeen mile upstream area from the NSBLD which will experience pool surface water elevation reductions up to several feet.

The Corps list, from the USFWS Information for Planning and Consultation identified only the immediate geographic area of the NSBLD. PAAR, Appendix C1. Therefore, the Corps has failed to assess direct and indirect and cumulative effects on protected species in violation of NEPA and the ESA.

F. Sediments

Dams retain sediment, and older dams are likely to accumulate materials which might include compounds, pollutants and elements which are banned or no longer utilized but persistent in the environment. Upon disturbance of the dam, or removal, these sediments become resuspended releasing pollutants, and would otherwise become available for exposure to aquatic organisms and recreational users. The Corps has not assessed sediments. The Corps states that sediment behind the dam will not be removed as part of this project (PAAR at 3.6.3.3) and therefore sediment release, resuspension, and exposure is an impact requiring assessment under NEPA.

As noted in the Technical Comments at V.I, limited data is available on sediment above the NSBLD, with some indication of toxic compounds and pollutants. Sturgeon particularly at the juvenile and larval stage spend life cycle at or near bottom sediments and accordingly exposure would be increased as compared to other aquatic species. A sediment screening analysis in accordance with EPA sediment toxicity screening criteria should be performed to assess impact of sediment release from any dam disturbance or breach; potential risks to downstream water supplies; and risks to the protected sturgeon which tend to utilize bottom habitat and could be exposed to the point of a take under the ESA by passage upstream. EPA, Sediment Toxicity Identification Evaluation (TIE) EPA/600/R-07/080 (Sept. 2007). These studies must be performed prior to agency action, and assessed in a publicly noticed environmental document.

G. Socioeconomic Impacts on the Augusta Region

The Corps has not performed analysis of socioeconomic impacts to the Augusta Region resulting from the proposal. Among NEPA's requirements are the mandate to analyze effects on the human environment. 42 U.S.C. § 4332(C). 2.2.14.1 Except limited real estate considerations which are limited, economic impact was not even considered in evaluation criteria. PAAR, at 3.1.1. Technical Comments at Section V.H identify flaws and omitted economic impacts. As part of the direct, indirect and cumulative effects analysis, impacts on tourism, recreation, fishing, government investment and general overall economic vitality of the area is required under NEPA. As noted throughout this document and the Technical Comments, including testimony of Congressmen Joe Wilson and Rick Allen, Mayors Hardie Davis, Jr. of Augusta and Bob Pettit of North Augusta, and Gary Bunker, Chairman of the Aiken County Council (incorporated into the Technical Comments at Appendix I, March 31, 2019 Hearing Transcript) the project will have significant economic effects on the Region.

For its environmental justice assessment, the Corps utilized the entire Augusta-Aiken GA-SC Metropolitan Statistical Area (Aiken County, Edgefield County, Richmond County, Columbia County, Burke County, McDuffie County). PAAR at 2.2.14.1. To not assess socioeconomic effect on the region while applying the regional demographic to determine environmental justice effects is arbitrary. We note that the Corps has failed to assess individual demographics in the vicinity of its proposal dam removal and the vicinity of the pool surface water elevations, to determine economic and social impact, potential effects on subsistence fishing and recreation, and other socioeconomic effect.

The Corps has failed to even consider riparian (water) rights of landowners, governments, and other entities resulting from the proposed project. The proposal affects riparian rights along a stretch of the Savannah River for the seventeen mile upstream area of direct impact, plus effects on tributaries of declining elevation in the mainstem resulting in lower tributary levels and increased flows, as well as the downstream effects which would include several miles (but has not even been contemplated by the Corps in the Draft Reports). Under the laws of both Georgia and South Carolina, owners of land adjacent to or underlying the affected waterbodies possess rights in the use of the water, as well as the increased property values resulting from uses and location including recreation, aesthetics, and water supply. The Corps has not assessed effects on riparian and water rights.

The proposal will result in significant diminution of property values, which has not been assessed by the Corps. Compensation under Constitutional provisions will be required.

H. Recreation Effects

As with wetland, riparian and fringe habitat, endangered species, historic resources and other resource areas, because the Corps failed to assess direct effects of the action on the seventeen mile stretch of the Savannah River upstream of the NSBLD, the Corps has failed to assess recreation effects. NEPA requires assessment of direct, indirect and cumulative effects on recreation, and in the case of this project WIIN 2016 specifically requires the pool surface water elevation be maintained to protect recreation. See Section I.

The Technical Comments at Section V.G. discusses recreation impacts.

XI. Coordination and Assessment of Impacts on Federal Power Act, 16 U.S.C. §§ 791 et seq., is Required

The Augusta Canal is undergoing proceedings under the Federal Power Act with Federal Energy Regulatory Commission ("FERC"). Three hydropower projects in the vicinity are also potentially subject to Federal Power Act proceedings. The Corps must consider direct, indirect, and cumulative effects on Federal Power Act projects and resources.

XII. Despite Significant Impacts, the Corps Has Failed to Propose Mitigation

The Corps proposes to forever change over seventeen miles of river, affect potentially thousands of acres of wetland, fringe, and riparian habitat, reconstruct and alter over ten acres of in-stream habitat, and has not proposed mitigation for effects. The Corps proposed only mitigation for 0.41 acres of wetland, limiting its own analysis to wetlands within the immediate vicinity of the NSBLD.

The Corps has proposed no mitigation for historic resources, despite its own conclusion of adverse effect and determination by the applicable State Historic Preservation Officers of adverse effect. As noted above, historic resource effects are underestimated and significant, and additional studies are necessary. In failing to assess historic resources, the Corps has failed to consider and apply mitigation measures.

The Corps has proposed no mitigation for construction related impacts.

The Corps has proposed no mitigation for socioeconomic effects, including economic effects to the Augusta Region, effects on subsistence fisheries long term and disruptions during construction.

Attachment: Legal Comments, City of Augusta, North Augusta and Augusta Utilities April 15, 2019 Comments on U.S. Army Corps February 14, 2019 Draft PAAR, SEA, FONSI Fish Passage at New Savannah Bluff Lock and Dam

The Corps has proposed no mitigation for impacts to recreation, despite clear and significant impacts and despite clear instruction from Congress to maintain the pool so as to avoid recreational impacts.



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District # 1

Camille Furguele
District # 2

Danny Feagin
District # 3

Chuck Smith
District # 4

Sandy Haskell
District # 5

Phil Napier
District # 6

L. Andrew Siders
District # 7

Willar H. Hightower, Jr.
District # 8

Comments from Aiken County Council Chairman Gary Bunker on the New Savannah Bluff Lock and Dam

The recent drawdown of the Savannah River to simulate the implementation of Option 2-6d on the New Savannah Bluff Lock and Dam was a real eye-opener. My understanding is that the estimated drop in the water surface elevation between the status quo at 114.3 feet to the simulated 112.4 feet for Option 2-6d should have totaled 1.9 feet. The observed change was greater than predicted. Is there an explanation for this discrepancy? And what have we learned about the reliability of the forecasting models?

A small example of what we saw during the drawdown occurred at the Horse Creek Wastewater Treatment Plant in Aiken County. We witnessed foaming conditions at the outfall, which was level with the surface of the pool. This didn't inhibit plant operations, but it is not an optimal solution. If Option 2-6d results in the pool being lowered to this level, then Aiken County taxpayers will foot the bill to lower and extend this outfall structure.

The Aiken County Council has been concerned about the future of the New Savannah Bluff Lock and Dam for nearly twenty years. In 2000 it passed a resolution requesting that the dam not be closed. It cited the importance of the current pool level for industrial users, water utilities, recreation, and tourism. And nearly twenty years ago, the millions spent by the Cities of Augusta and North Augusta were already a concern.

In 2017, the Aiken County Council supported repair and rehabilitation of the dam, including a fish passage, to preserve the pool at the current level and to mitigate flooding risks in Augusta and North Augusta. Council thought that the primary objectives under the Water Infrastructure Improvements for the Nation (WIIN) Act included the maintenance of the pool for water supply, recreation, and flood control.

And this past January, the Aiken County Council officially endorsed Option 1-1 over Option 2-6d. This option would best meet the WIIN Act requirement that any mitigation project must maintain the pool at the elevation existing on the date of its adoption. On the other hand, any significant lowering will create operational issues for industry and local

governments, along with aesthetic and recreational issues, putting at risk millions of dollars of investment along the riverfront.

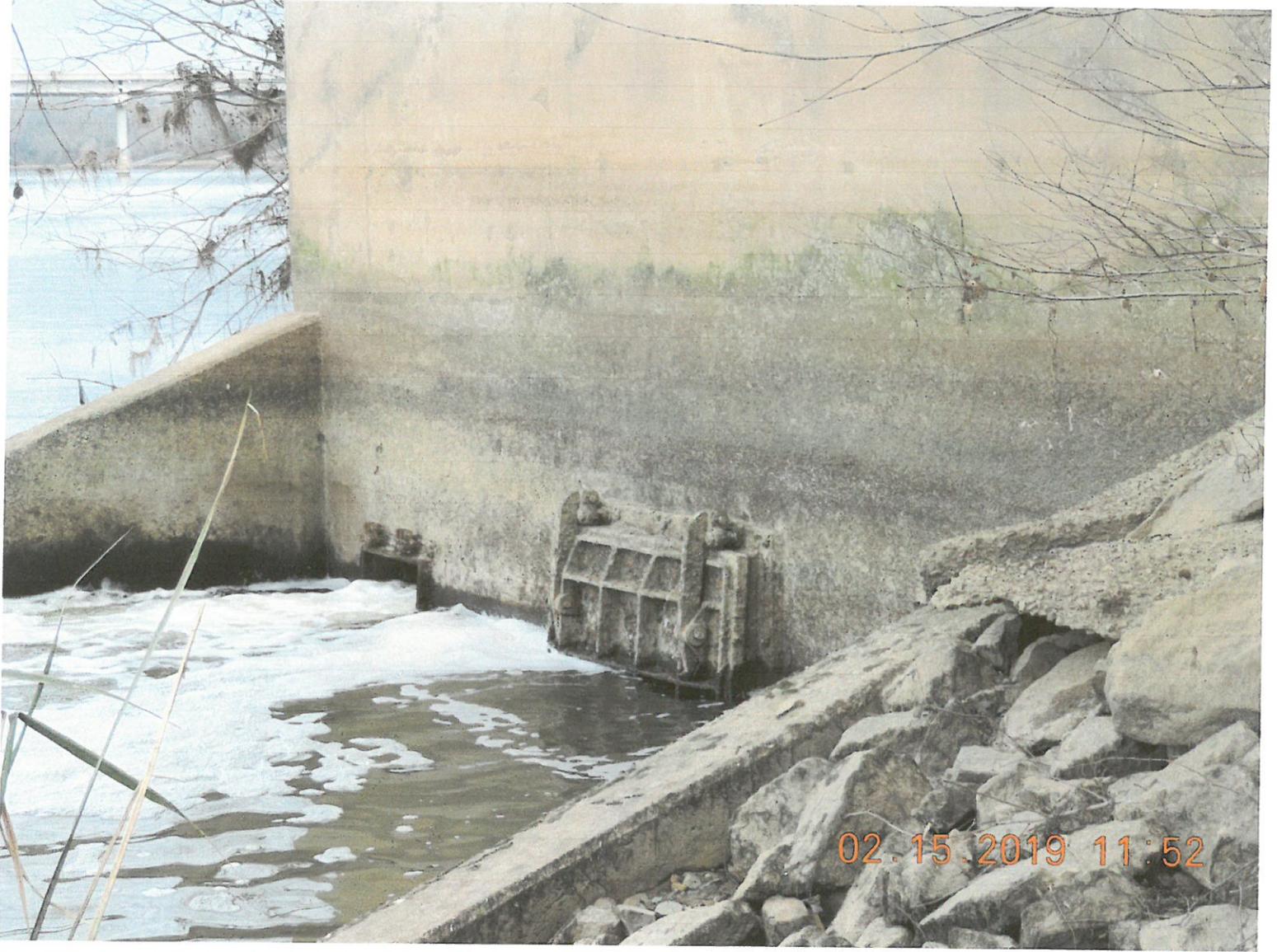
And in a further development, the South Carolina General Assembly passed a budgetary proviso prohibiting the South Carolina Department of Health and Environmental Control from assisting any efforts on the New Savannah Bluff Lock and Dam that are inconsistent with the existing water quality and navigability conditions. The proviso explicitly references the 114 foot elevation "for the preservation of adequate and sufficient water quality, navigation, water supply, and recreational activities."

Aiken County favors Option 1-1. From what we've seen, the recent drawdown has done nothing to convince us otherwise. If this is what Option 2-6d looks like, then the Aiken County Council wants nothing to do with it.

Gary Bunker
Chairman, Aiken County Council
1930 University Parkway, Suite 3600
Aiken, SC 29801
(803) 645-8388
gbunker@aikencountysc.gov

March 21, 2019







02.15.2019 11:50

NSBLD Comments

Andrew Barnett

savannahriver.org

Great website for accurate solution to the lock and dam. Both congressmen (Allen + Willson) are aware.

NSBLD Comments

Stephen Schroeder

Sojmaster@gmail.com

- why can't the proposed Dam maintain the current water levels?
- is there a DETAILED proposal?
The plan on the site is too simple & generic.
- I request a copy of the presentation from the ZI NAR Public hearing.

NSBLD Comments

Marcie Wilhelm, 2928 Brasford Rd, 30909 C-706-951-72
Augusta/North Augusta has put hundreds of million
of dollars into our river fronts based on a pool
level. The Corps and Savannah had no right to
trade our welfare as a community for theirs.

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

I'm in support of keeping the Lock and Dam. It is essential to the City of Augusta that the pool level upstream from the Savannah Bluff Lock and Dam be maintained at the average current levels and the Lock and Dam be repaired and kept as part of the Savannah River infrastructure.

Concerned citizen,



Moses Todd

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

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Concerned citizen,

A handwritten signature in black ink, appearing to read "Phillip Richards", written in a cursive style.

Phillip Richards

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

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Concerned citizen,

A handwritten signature in cursive script, appearing to read "Clayton Thompson".

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

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Concerned citizen,

Jeffrey M. Rice

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

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Concerned citizen,

Joseph Marion Powell

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

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Concerned citizen,

Wesley M. Adams



3/19/19

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

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Concerned citizen,



3-19-99

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

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Concerned citizen,

Justin VanderZaun

A handwritten signature in black ink, appearing to read "Justin VanderZaun", with a long horizontal flourish extending to the right.

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

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Concerned citizen,



NATHAN DONALD

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 314011

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

I'm in support of keeping the Lock and Dam. It is essential to the City of Augusta that the pool level upstream from the Savannah Bluff Lock and Dam be maintained at the average current levels and the Lock and Dam be repaired and kept as part of the Savannah River infrastructure.

Concerned citizen,

A handwritten signature in black ink, appearing to be the initials 'JPL' or similar, written in a cursive style.

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

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Concerned citizen,

A handwritten signature in black ink, appearing to be a stylized name, possibly "B. ...", written over a horizontal line.

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

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Concerned citizen,

A handwritten signature in cursive script, appearing to read "J. J. Mahal".

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

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Concerned citizen,

Samuel Will

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

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Concerned citizen,

A handwritten signature in black ink, appearing to read "Thomas R. Johnson". The signature is written in a cursive style with a large, sweeping initial "T".

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

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Concerned citizen,

Patrick Frank 3-19-19
Patrick Frank 3-19-19

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

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Concerned citizen,

A handwritten signature in cursive script, appearing to read "Tom Bunn". The signature is written in dark ink and is positioned above the date.

3-19-19

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

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Concerned citizen,

A handwritten signature in cursive script, reading "Scott R. Kimbrell". The signature is written in black ink and is positioned below the typed text of the comment.

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

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Concerned citizen,

Jacob McDonald

A handwritten signature in cursive script that reads "Jacob McDonald".

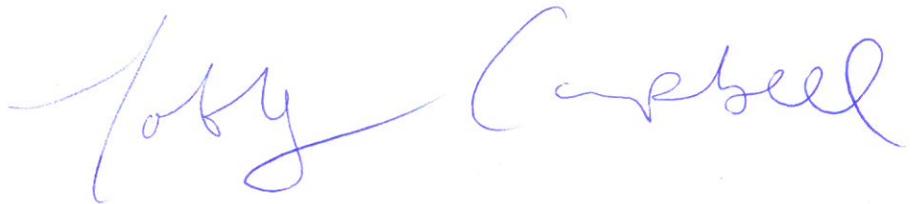
US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

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Concerned citizen,

A handwritten signature in blue ink that reads "Toby Campbell". The signature is written in a cursive style with a long horizontal stroke extending from the "y" in "Toby".

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

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Concerned citizen,

A handwritten signature in black ink, appearing to be "John A. [unclear]", enclosed within a hand-drawn oval border.

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

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Concerned citizen,

A handwritten signature in black ink, appearing to read "W. Adams", written over a horizontal line.

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

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Concerned citizen, 

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

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Concerned citizen,

Ralph E. III

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

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Concerned citizen,



Caleb Richardson

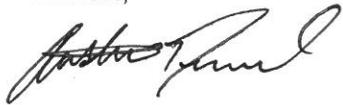
US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

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Concerned citizen,

A handwritten signature in black ink, appearing to read "Arthur J. [unclear]". The signature is written in a cursive style with a large, looping initial.

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

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Concerned citizen,

A handwritten signature in black ink, consisting of several overlapping, fluid strokes that form a cursive name, likely 'John Smith'.

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

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Concerned citizen,

A handwritten signature in cursive script that reads "William W. Bullard".

William W. Bullard

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

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Concerned citizen,

A handwritten signature in black ink, appearing to be the initials 'TJA' with a long horizontal stroke extending to the right.

3/19/19

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

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Concerned citizen,

A handwritten signature in black ink, appearing to read "Josh Reddish". The signature is fluid and cursive, with a large initial "J" and "R".

Josh Reddish

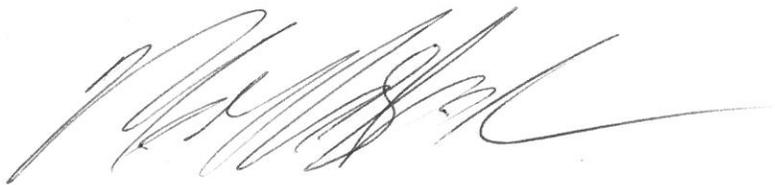
US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

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Concerned citizen,

A handwritten signature in black ink, appearing to be a cursive name, located at the bottom of the page.

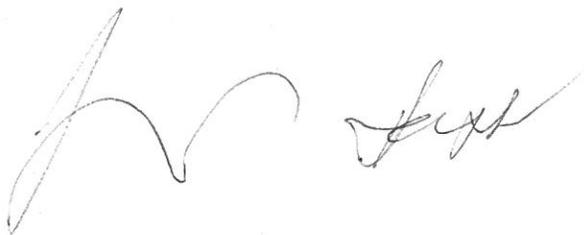
US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

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Concerned citizen,

A handwritten signature in black ink, appearing to read "John Smith", is written in a cursive style.

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

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Concerned citizen,

A handwritten signature in black ink, appearing to read "John Elbert". The signature is written in a cursive style with a long, sweeping underline.

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

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Concerned citizen,

A handwritten signature in black ink, appearing to read "Kiki Roberts", with a long horizontal flourish extending to the right.

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

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Concerned citizen,

A handwritten signature in black ink, appearing to read "B. S. S." with a horizontal line under the first name and a flourish at the end.

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

I'm in support of keeping the Lock and Dam. It is essential to the City of Augusta that the pool level upstream from the Savannah Bluff Lock and Dam be maintained at the average current levels and the Lock and Dam be repaired and kept as part of the Savannah River infrastructure.

Concerned citizen,

A handwritten signature in black ink, appearing to read "Mark Byrd".

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

I'm in support of keeping the Lock and Dam. It is essential to the City of Augusta that the pool level upstream from the Savannah Bluff Lock and Dam be maintained at the average current levels and the Lock and Dam be repaired and kept as part of the Savannah River infrastructure.

Concerned citizen,

A handwritten signature in black ink, appearing to read "Joseph Desobry". The signature is written in a cursive style with a long horizontal stroke extending to the right.

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

I'm in support of keeping the Lock and Dam. It is essential to the City of Augusta that the pool level upstream from the Savannah Bluff Lock and Dam be maintained at the average current levels and the Lock and Dam be repaired and kept as part of the Savannah River infrastructure.

Concerned citizen,

A handwritten signature in black ink, appearing to be the initials 'B. B.' followed by a stylized surname.

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

I'm in support of keeping the Lock and Dam. It is essential to the City of Augusta that the pool level upstream from the Savannah Bluff Lock and Dam be maintained at the average current levels and the Lock and Dam be repaired and kept as part of the Savannah River infrastructure.

Concerned citizen,

Brian Forsmark

A handwritten signature in black ink, appearing to be 'Brian Forsmark', written over a horizontal line. The signature is stylized with a large loop and a long horizontal stroke extending to the right.

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

I'm in support of keeping the Lock and Dam. It is essential to the City of Augusta that the pool level upstream from the Savannah Bluff Lock and Dam be maintained at the average current levels and the Lock and Dam be repaired and kept as part of the Savannah River infrastructure.

Concerned citizen,

G. M. ...
Menderson

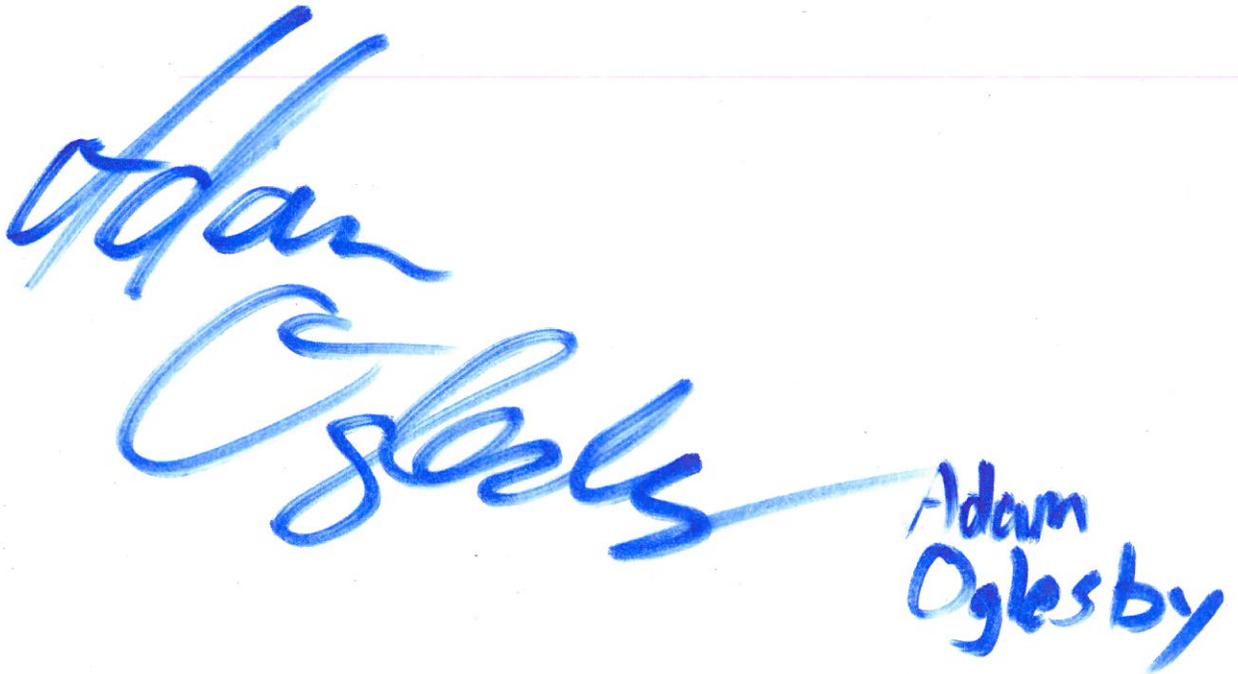
US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

I'm in support of keeping the Lock and Dam. It is essential to the City of Augusta that the pool level upstream from the Savannah Bluff Lock and Dam be maintained at the average current levels and the Lock and Dam be repaired and kept as part of the Savannah River infrastructure.

Concerned citizen,


Adam Oglesby

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

I'm in support of keeping the Lock and Dam. It is essential to the City of Augusta that the pool level upstream from the Savannah Bluff Lock and Dam be maintained at the average current levels and the Lock and Dam be repaired and kept as part of the Savannah River infrastructure.

Concerned citizen,

Eric English



3-18-19

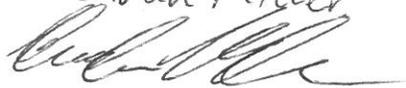
US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

I'm in support of keeping the Lock and Dam. It is essential to the City of Augusta that the pool level upstream from the Savannah Bluff Lock and Dam be maintained at the average current levels and the Lock and Dam be repaired and kept as part of the Savannah River infrastructure.

Concerned citizen,

Brendan Miller


US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

I'm in support of keeping the Lock and Dam. It is essential to the City of Augusta that the pool level upstream from the Savannah Bluff Lock and Dam be maintained at the average current levels and the Lock and Dam be repaired and kept as part of the Savannah River infrastructure.

Concerned citizen,

Gavin T. Grubbs

A handwritten signature in black ink, appearing to read "Gavin T. Grubbs", written over a large, loopy scribble.

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

I'm in support of keeping the Lock and Dam. It is essential to the City of Augusta that the pool level upstream from the Savannah Bluff Lock and Dam be maintained at the average current levels and the Lock and Dam be repaired and kept as part of the Savannah River infrastructure.

Concerned citizen,

Billie Wilson Jr.

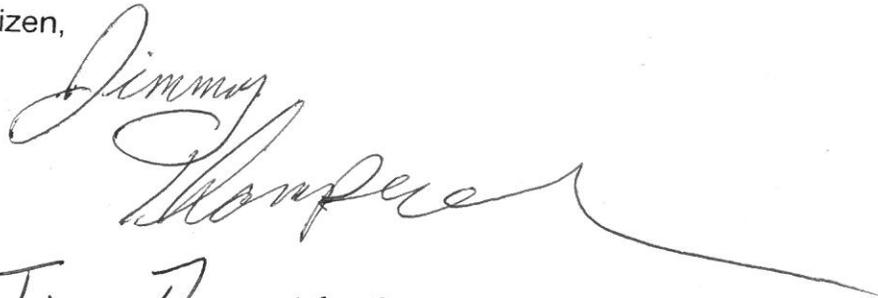
US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

I'm in support of keeping the Lock and Dam. It is essential to the City of Augusta that the pool level upstream from the Savannah Bluff Lock and Dam be maintained at the average current levels and the Lock and Dam be repaired and kept as part of the Savannah River infrastructure.

Concerned citizen,

A large, stylized handwritten signature in cursive script that reads "Jimmy Thompson". The signature is written in black ink and has a long, sweeping underline that extends to the right.

Jimmy Thompson

3-18-19

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

I'm in support of keeping the Lock and Dam. It is essential to the City of Augusta that the pool level upstream from the Savannah Bluff Lock and Dam be maintained at the average current levels and the Lock and Dam be repaired and kept as part of the Savannah River infrastructure.

Concerned citizen,

Kathy L Swett
Kathy L Swett
03-18-19

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

I'm in support of keeping the Lock and Dam. It is essential to the City of Augusta that the pool level upstream from the Savannah Bluff Lock and Dam be maintained at the average current levels and the Lock and Dam be repaired and kept as part of the Savannah River infrastructure.

Concerned citizen,

Myle Wilkinson, Myle Wilkinson

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

I'm in support of keeping the Lock and Dam. It is essential to the City of Augusta that the pool level upstream from the Savannah Bluff Lock and Dam be maintained at the average current levels and the Lock and Dam be repaired and kept as part of the Savannah River infrastructure.

Concerned citizen,

A large, stylized handwritten signature in black ink, appearing to read "Bobby Conway".

Bobby Conway 3/18/19

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

I'm in support of keeping the Lock and Dam. It is essential to the City of Augusta that the pool level upstream from the Savannah Bluff Lock and Dam be maintained at the average current levels and the Lock and Dam be repaired and kept as part of the Savannah River infrastructure.

Concerned citizen,

Jason Harriman

A handwritten signature in black ink, appearing to read "Jason Harriman", written in a cursive style.

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

I'm in support of keeping the Lock and Dam. It is essential to the City of Augusta that the pool level upstream from the Savannah Bluff Lock and Dam be maintained at the average current levels and the Lock and Dam be repaired and kept as part of the Savannah River infrastructure.

Concerned citizen,

Logan Oglethorpe

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

I'm in support of keeping the Lock and Dam. It is essential to the City of Augusta that the pool level upstream from the Savannah Bluff Lock and Dam be maintained at the average current levels and the Lock and Dam be repaired and kept as part of the Savannah River infrastructure.

Concerned citizen,

Elina Jarvi


US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

I'm in support of keeping the Lock and Dam. It is essential to the City of Augusta that the pool level upstream from the Savannah Bluff Lock and Dam be maintained at the average current levels and the Lock and Dam be repaired and kept as part of the Savannah River infrastructure.

Concerned citizen,

A handwritten signature in cursive script that reads "Aaron Patterson". The signature is written in black ink and is followed by a horizontal line.

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

I'm in support of keeping the Lock and Dam. It is essential to the City of Augusta that the pool level upstream from the Savannah Bluff Lock and Dam be maintained at the average current levels and the Lock and Dam be repaired and kept as part of the Savannah River infrastructure.

Concerned citizen,


Scott Kesterson

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

I'm in support of keeping the Lock and Dam. It is essential to the City of Augusta that the pool level upstream from the Savannah Bluff Lock and Dam be maintained at the average current levels and the Lock and Dam be repaired and kept as part of the Savannah River infrastructure.

Concerned citizen,

A handwritten signature in cursive script, reading "Steven Paulino Wade". The signature is written in black ink and is positioned below the typed text of the comment.

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

I'm in support of keeping the Lock and Dam. It is essential to the City of Augusta that the pool level upstream from the Savannah Bluff Lock and Dam be maintained at the average current levels and the Lock and Dam be repaired and kept as part of the Savannah River infrastructure.

Concerned citizen,

A handwritten signature in black ink, consisting of several loops and a long horizontal stroke at the end, positioned below the text "Concerned citizen,".

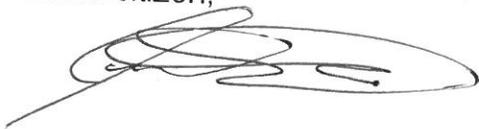
US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

I'm in support of keeping the Lock and Dam. It is essential to the City of Augusta that the pool level upstream from the Savannah Bluff Lock and Dam be maintained at the average current levels and the Lock and Dam be repaired and kept as part of the Savannah River infrastructure.

Concerned citizen,

A handwritten signature in black ink, consisting of several overlapping loops and a long horizontal stroke extending to the left.

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

I'm in support of keeping the Lock and Dam. It is essential to the City of Augusta that the pool level upstream from the Savannah Bluff Lock and Dam be maintained at the average current levels and the Lock and Dam be repaired and kept as part of the Savannah River infrastructure.

Concerned citizen,

A handwritten signature in black ink, appearing to be "B. L. Young", written in a cursive style.

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

I'm in support of keeping the Lock and Dam. It is essential to the City of Augusta that the pool level upstream from the Savannah Bluff Lock and Dam be maintained at the average current levels and the Lock and Dam be repaired and kept as part of the Savannah River infrastructure.

Concerned citizen,

Adrian
Barbosa

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

I'm in support of keeping the Lock and Dam. It is essential to the City of Augusta that the pool level upstream from the Savannah Bluff Lock and Dam be maintained at the average current levels and the Lock and Dam be repaired and kept as part of the Savannah River infrastructure.

Concerned citizen,

A handwritten signature in black ink, appearing to read "J. L. [unclear]", with a long horizontal flourish extending to the right.

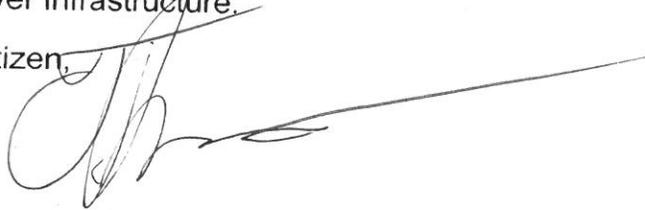
US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

I'm in support of keeping the Lock and Dam. It is essential to the City of Augusta that the pool level upstream from the Savannah Bluff Lock and Dam be maintained at the average current levels and the Lock and Dam be repaired and kept as part of the Savannah River infrastructure.

Concerned citizen,

A handwritten signature in black ink, consisting of a large, stylized initial 'S' followed by a long horizontal line extending to the right.

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

I'm in support of keeping the Lock and Dam. It is essential to the City of Augusta that the pool level upstream from the Savannah Bluff Lock and Dam be maintained at the average current levels and the Lock and Dam be repaired and kept as part of the Savannah River infrastructure.

Concerned citizen,

A handwritten signature in black ink, appearing to read "Michael B. C.", written in a cursive style.

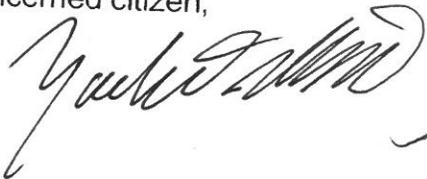
US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

I'm in support of keeping the Lock and Dam. It is essential to the City of Augusta that the pool level upstream from the Savannah Bluff Lock and Dam be maintained at the average current levels and the Lock and Dam be repaired and kept as part of the Savannah River infrastructure.

Concerned citizen,

A handwritten signature in black ink, appearing to read "Yach G. [unclear]". The signature is written in a cursive style and is positioned below the text "Concerned citizen,".

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

I'm in support of keeping the Lock and Dam. It is essential to the City of Augusta that the pool level upstream from the Savannah Bluff Lock and Dam be maintained at the average current levels and the Lock and Dam be repaired and kept as part of the Savannah River infrastructure.

Concerned citizen,

A handwritten signature in cursive script that reads "Hunter King". The signature is written in dark ink and is positioned below the text "Concerned citizen,".

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

I'm in support of keeping the Lock and Dam. It is essential to the City of Augusta that the pool level upstream from the Savannah Bluff Lock and Dam be maintained at the average current levels and the Lock and Dam be repaired and kept as part of the Savannah River infrastructure.

Concerned citizen,

Steven H Bradley

SHB

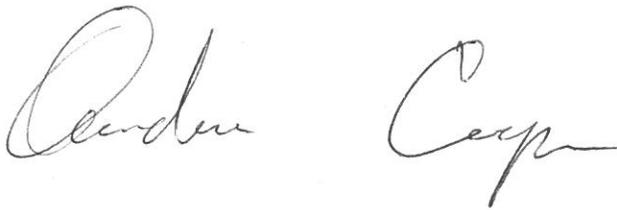
US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

I'm in support of keeping the Lock and Dam. It is essential to the City of Augusta that the pool level upstream from the Savannah Bluff Lock and Dam be maintained at the average current levels and the Lock and Dam be repaired and kept as part of the Savannah River infrastructure.

Concerned citizen,

Handwritten signature in cursive script, appearing to read "O'Brien Corp".

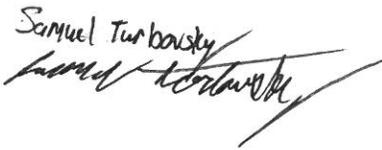
US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

I'm in support of keeping the Lock and Dam. It is essential to the City of Augusta that the pool level upstream from the Savannah Bluff Lock and Dam be maintained at the average current levels and the Lock and Dam be repaired and kept as part of the Savannah River infrastructure.

Concerned citizen,

Samuel Turbowsky


US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

I'm in support of keeping the Lock and Dam. It is essential to the City of Augusta that the pool level upstream from the Savannah Bluff Lock and Dam be maintained at the average current levels and the Lock and Dam be repaired and kept as part of the Savannah River infrastructure.

Concerned citizen,

A handwritten signature in black ink, appearing to read "W. J. [unclear]". The signature is written in a cursive style with a long horizontal flourish at the end.

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

I'm in support of keeping the Lock and Dam. It is essential to the City of Augusta that the pool level upstream from the Savannah Bluff Lock and Dam be maintained at the average current levels and the Lock and Dam be repaired and kept as part of the Savannah River infrastructure.

Concerned citizen,

A handwritten signature in black ink, reading "Benjamin Edward Dickey". The signature is written in a cursive style with a long, sweeping underline.

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

I'm in support of keeping the Lock and Dam. It is essential to the City of Augusta that the pool level upstream from the Savannah Bluff Lock and Dam be maintained at the average current levels and the Lock and Dam be repaired and kept as part of the Savannah River infrastructure.

Concerned citizen,



US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

I'm in support of keeping the Lock and Dam. It is essential to the City of Augusta that the pool level upstream from the Savannah Bluff Lock and Dam be maintained at the average current levels and the Lock and Dam be repaired and kept as part of the Savannah River infrastructure.

Concerned citizen,

A handwritten signature in cursive script, appearing to read "S. H. Danielson".

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

I'm in support of keeping the Lock and Dam. It is essential to the City of Augusta that the pool level upstream from the Savannah Bluff Lock and Dam be maintained at the average current levels and the Lock and Dam be repaired and kept as part of the Savannah River infrastructure.

Concerned citizen,

A handwritten signature in black ink, consisting of a large, stylized initial 'D' followed by a long, horizontal, wavy line.

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

I'm in support of keeping the Lock and Dam. It is essential to the City of Augusta that the pool level upstream from the Savannah Bluff Lock and Dam be maintained at the average current levels and the Lock and Dam be repaired and kept as part of the Savannah River infrastructure.

Concerned citizen,

A handwritten signature in black ink, appearing to read "John J. [unclear]". The signature is fluid and cursive, written on a white background.

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

I'm in support of keeping the Lock and Dam. It is essential to the City of Augusta that the pool level upstream from the Savannah Bluff Lock and Dam be maintained at the average current levels and the Lock and Dam be repaired and kept as part of the Savannah River infrastructure.

Concerned citizen,

Two handwritten signatures in cursive script, one on the left and one on the right, positioned below the text 'Concerned citizen,'.

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

I'm in support of keeping the Lock and Dam. It is essential to the City of Augusta that the pool level upstream from the Savannah Bluff Lock and Dam be maintained at the average current levels and the Lock and Dam be repaired and kept as part of the Savannah River infrastructure.

Concerned citizen,

A handwritten signature in cursive script that reads "Jeremy Jones". The signature is written in dark ink and is positioned below the typed name of the citizen.

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

I'm in support of keeping the Lock and Dam. It is essential to the City of Augusta that the pool level upstream from the Savannah Bluff Lock and Dam be maintained at the average current levels and the Lock and Dam be repaired and kept as part of the Savannah River infrastructure.

Concerned citizen,

A handwritten signature in cursive script that reads "Janet Pittman".

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

I'm in support of keeping the Lock and Dam. It is essential to the City of Augusta that the pool level upstream from the Savannah Bluff Lock and Dam be maintained at the average current levels and the Lock and Dam be repaired and kept as part of the Savannah River infrastructure.

Concerned citizen,

A handwritten signature in black ink, appearing to be the initials 'APL' followed by a stylized flourish.

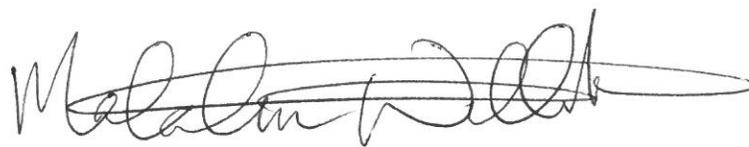
US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

I'm in support of keeping the Lock and Dam. It is essential to the City of Augusta that the pool level upstream from the Savannah Bluff Lock and Dam be maintained at the average current levels and the Lock and Dam be repaired and kept as part of the Savannah River infrastructure.

Concerned citizen,

A handwritten signature in black ink, appearing to read "Malcolm [unclear]", with a long horizontal flourish extending to the right.

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

I'm in support of keeping the Lock and Dam. It is essential to the City of Augusta that the pool level upstream from the Savannah Bluff Lock and Dam be maintained at the average current levels and the Lock and Dam be repaired and kept as part of the Savannah River infrastructure.

Concerned citizen,

A handwritten signature in black ink, appearing to read "M. L. Soloff". The signature is written in a cursive, flowing style.

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

I'm in support of keeping the Lock and Dam. It is essential to the City of Augusta that the pool level upstream from the Savannah Bluff Lock and Dam be maintained at the average current levels and the Lock and Dam be repaired and kept as part of the Savannah River infrastructure.

Concerned citizen,

A handwritten signature in black ink, consisting of a stylized first name followed by a long horizontal line extending to the right.

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

I'm in support of keeping the Lock and Dam. It is essential to the City of Augusta that the pool level upstream from the Savannah Bluff Lock and Dam be maintained at the average current levels and the Lock and Dam be repaired and kept as part of the Savannah River infrastructure.

Concerned citizen,

Benjamin Wallace,
1218 miles Rd, Harlem GA
706-699-2063



US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

I'm in support of keeping the Lock and Dam. It is essential to the City of Augusta that the pool level upstream from the Savannah Bluff Lock and Dam be maintained at the average current levels and the Lock and Dam be repaired and kept as part of the Savannah River infrastructure.

Concerned citizen,

Antonio Walker 

189 Lewis St

Wadley, GA 30477

3-19-19

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

I'm in support of keeping the Lock and Dam. It is essential to the City of Augusta that the pool level upstream from the Savannah Bluff Lock and Dam be maintained at the average current levels and the Lock and Dam be repaired and kept as part of the Savannah River infrastructure.

Concerned citizen,

Henry Edwards

165 Morningside Dr.

Lincolnton GA 30817

A large, stylized handwritten signature in black ink, appearing to read 'Henry Edwards', written over the typed name and address.

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

I'm in support of keeping the Lock and Dam. It is essential to the City of Augusta that the pool level upstream from the Savannah Bluff Lock and Dam be maintained at the average current levels and the Lock and Dam be repaired and kept as part of the Savannah River infrastructure.

Concerned citizen,

Zach Fultz 4372 Roxbury Dr Evans GA 30809
 706-833-4388

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

I'm in support of keeping the Lock and Dam. It is essential to the City of Augusta that the pool level upstream from the Savannah Bluff Lock and Dam be maintained at the average current levels and the Lock and Dam be repaired and kept as part of the Savannah River infrastructure.

Concerned citizen,

Lonnor Ricks
167 Seaton Ave.

Lonnor Ricks

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

I'm in support of keeping the Lock and Dam. It is essential to the City of Augusta that the pool level upstream from the Savannah Bluff Lock and Dam be maintained at the average current levels and the Lock and Dam be repaired and kept as part of the Savannah River infrastructure.

Concerned citizen,



Matthew Cartledge

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

I'm in support of keeping the Lock and Dam. It is essential to the City of Augusta that the pool level upstream from the Savannah Bluff Lock and Dam be maintained at the average current levels and the Lock and Dam be repaired and kept as part of the Savannah River infrastructure.

Concerned citizen,

A handwritten signature in black ink, appearing to read "P. Smith", written in a cursive style.

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

I'm in support of keeping the Lock and Dam. It is essential to the City of Augusta that the pool level upstream from the Savannah Bluff Lock and Dam be maintained at the average current levels and the Lock and Dam be repaired and kept as part of the Savannah River infrastructure.

Concerned citizen,

Crystal Andrews

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

I'm in support of keeping the Lock and Dam. It is essential to the City of Augusta that the pool level upstream from the Savannah Bluff Lock and Dam be maintained at the average current levels and the Lock and Dam be repaired and kept as part of the Savannah River infrastructure.

Concerned citizen,

A handwritten signature in black ink, appearing to be "W. B. ...", written in a cursive style.

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

I'm in support of keeping the Lock and Dam. It is essential to the City of Augusta that the pool level upstream from the Savannah Bluff Lock and Dam be maintained at the average current levels and the Lock and Dam be repaired and kept as part of the Savannah River infrastructure.

Concerned citizen,

Brandon Bode

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

I'm in support of keeping the Lock and Dam. It is essential to the City of Augusta that the pool level upstream from the Savannah Bluff Lock and Dam be maintained at the average current levels and the Lock and Dam be repaired and kept as part of the Savannah River infrastructure.

Concerned citizen,

A handwritten signature in cursive script, appearing to read "W. Keith Lee".

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

I'm in support of keeping the Lock and Dam. It is essential to the City of Augusta that the pool level upstream from the Savannah Bluff Lock and Dam be maintained at the average current levels and the Lock and Dam be repaired and kept as part of the Savannah River infrastructure.

Concerned citizen,

A handwritten signature in black ink, appearing to read "Edwin [unclear]", written over a horizontal line.

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

I'm in support of keeping the Lock and Dam. It is essential to the City of Augusta that the pool level upstream from the Savannah Bluff Lock and Dam be maintained at the average current levels and the Lock and Dam be repaired and kept as part of the Savannah River infrastructure.

Concerned citizen,

A handwritten signature in black ink, appearing to read "Paul Lane", written over a horizontal line.

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

I'm in support of keeping the Lock and Dam. It is essential to the City of Augusta that the pool level upstream from the Savannah Bluff Lock and Dam be maintained at the average current levels and the Lock and Dam be repaired and kept as part of the Savannah River infrastructure.

Concerned citizen,

A handwritten signature in black ink, appearing to read "Stan Bradley". The signature is written in a cursive style with a large, looping initial "S".

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

I'm in support of keeping the Lock and Dam. It is essential to the City of Augusta that the pool level upstream from the Savannah Bluff Lock and Dam be maintained at the average current levels and the Lock and Dam be repaired and kept as part of the Savannah River infrastructure.

Concerned citizen,

A handwritten signature in black ink, appearing to read "Bob Liley", with a long horizontal flourish extending to the right.

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

I'm in support of keeping the Lock and Dam. It is essential to the City of Augusta that the pool level upstream from the Savannah Bluff Lock and Dam be maintained at the average current levels and the Lock and Dam be repaired and kept as part of the Savannah River infrastructure.

Concerned citizen,

A handwritten signature in black ink, appearing to read "Jay R. Nitz". The signature is written in a cursive style with a large initial "J" and "N".

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

I'm in support of keeping the Lock and Dam. It is essential to the City of Augusta that the pool level upstream from the Savannah Bluff Lock and Dam be maintained at the average current levels and the Lock and Dam be repaired and kept as part of the Savannah River infrastructure.

Concerned citizen,

Jerry Taylor

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

I'm in support of keeping the Lock and Dam. It is essential to the City of Augusta that the pool level upstream from the Savannah Bluff Lock and Dam be maintained at the average current levels and the Lock and Dam be repaired and kept as part of the Savannah River infrastructure.

Concerned citizen,

Christian Carol Davis


US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

I'm in support of keeping the Lock and Dam. It is essential to the City of Augusta that the pool level upstream from the Savannah Bluff Lock and Dam be maintained at the average current levels and the Lock and Dam be repaired and kept as part of the Savannah River infrastructure.

Concerned citizen,

A handwritten signature in black ink, appearing to read "John Smith", written in a cursive style.

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

I'm in support of keeping the Lock and Dam. It is essential to the City of Augusta that the pool level upstream from the Savannah Bluff Lock and Dam be maintained at the average current levels and the Lock and Dam be repaired and kept as part of the Savannah River infrastructure.

Concerned citizen,

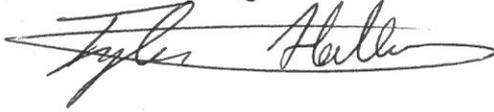
A handwritten signature in black ink, appearing to read "James J. Hill". The signature is fluid and cursive, with a large initial "J" and "H".

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

I'm in support of keeping the Lock and Dam. It is essential to the City of Augusta that the pool level upstream from the Savannah Bluff Lock and Dam be maintained at the average current levels and the Lock and Dam be repaired and kept as part of the Savannah River infrastructure.

Concerned citizen, *Tyler Holloway*


US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

I'm in support of keeping the Lock and Dam. It is essential to the City of Augusta that the pool level upstream from the Savannah Bluff Lock and Dam be maintained at the average current levels and the Lock and Dam be repaired and kept as part of the Savannah River infrastructure.

Concerned citizen, Andrew Wilson



US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

I'm in support of keeping the Lock and Dam. It is essential to the City of Augusta that the pool level upstream from the Savannah Bluff Lock and Dam be maintained at the average current levels and the Lock and Dam be repaired and kept as part of the Savannah River infrastructure.

Concerned citizen, *Carson Rausen*



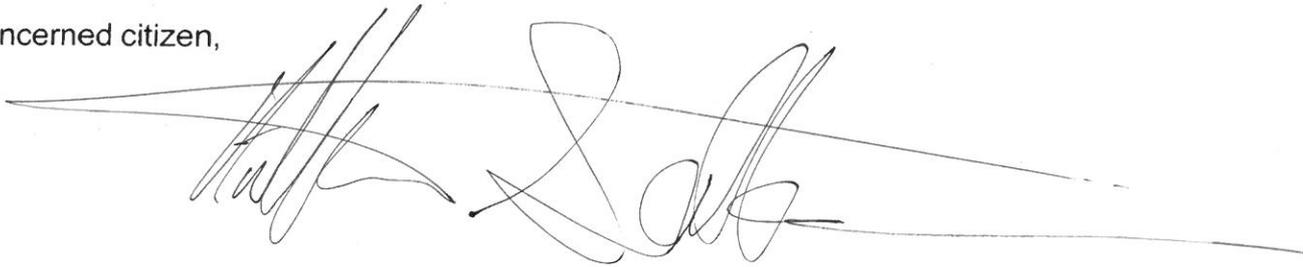
US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

I'm in support of keeping the Lock and Dam. It is essential to the City of Augusta that the pool level upstream from the Savannah Bluff Lock and Dam be maintained at the average current levels and the Lock and Dam be repaired and kept as part of the Savannah River infrastructure.

Concerned citizen,

A handwritten signature in black ink, consisting of several loops and strokes, positioned below the text "Concerned citizen,". The signature is written over a faint horizontal line that spans the width of the page.

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

I'm in support of keeping the Lock and Dam. It is essential to the City of Augusta that the pool level upstream from the Savannah Bluff Lock and Dam be maintained at the average current levels and the Lock and Dam be repaired and kept as part of the Savannah River infrastructure.

Concerned citizen,

Austin
Seckinger AS

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

I'm in support of keeping the Lock and Dam. It is essential to the City of Augusta that the pool level upstream from the Savannah Bluff Lock and Dam be maintained at the average current levels and the Lock and Dam be repaired and kept as part of the Savannah River infrastructure.

Concerned citizen,

BRETT T. KERN


US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

I'm in support of keeping the Lock and Dam. It is essential to the City of Augusta that the pool level upstream from the Savannah Bluff Lock and Dam be maintained at the average current levels and the Lock and Dam be repaired and kept as part of the Savannah River infrastructure.

Concerned citizen,

Cameron Greer

3 - 20 - 19

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

I'm in support of keeping the Lock and Dam. It is essential to the City of Augusta that the pool level upstream from the Savannah Bluff Lock and Dam be maintained at the average current levels and the Lock and Dam be repaired and kept as part of the Savannah River infrastructure.

Concerned citizen,

William Bull

3-20-19

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

I'm in support of keeping the Lock and Dam. It is essential to the City of Augusta that the pool level upstream from the Savannah Bluff Lock and Dam be maintained at the average current levels and the Lock and Dam be repaired and kept as part of the Savannah River infrastructure.

Concerned citizen,

Cal King
3-20-19

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

I'm in support of keeping the Lock and Dam. It is essential to the City of Augusta that the pool level upstream from the Savannah Bluff Lock and Dam be maintained at the average current levels and the Lock and Dam be repaired and kept as part of the Savannah River infrastructure.

Concerned citizen,

A handwritten signature in black ink, appearing to read "Jack Bades". The signature is fluid and cursive, with a long, sweeping underline that extends to the left.

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

I'm in support of keeping the Lock and Dam. It is essential to the City of Augusta that the pool level upstream from the Savannah Bluff Lock and Dam be maintained at the average current levels and the Lock and Dam be repaired and kept as part of the Savannah River infrastructure.

Concerned citizen,

Harris News

March 20, 2019

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

I'm in support of keeping the Lock and Dam. It is essential to the City of Augusta that the pool level upstream from the Savannah Bluff Lock and Dam be maintained at the average current levels and the Lock and Dam be repaired and kept as part of the Savannah River infrastructure.

Concerned citizen,


Clay Clark

3-20-19

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

I am a resident of Georgia who fish in the Savannah River. In addition to fishing, we rely on the Savannah River water pool for drinking water, boating, and recreational use. Georgia industry rely on the Savannah River for water for the production of products. Georgia Power/Southern Company, rely on the Savannah River for cooling water for 4 nuclear reactors.

I'm in support of keeping the Lock and Dam. It is essential to the City of Augusta that the pool level upstream from the Savannah Bluff Lock and Dam be maintained at the average current levels and the Lock and Dam be repaired and kept as part of the Savannah River infrastructure.

Concerned citizen,



3-20-19

Sid Slown

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

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Concerned citizen,

A handwritten signature in cursive script, appearing to read "Kathleen M. ...".

3-20-19

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

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Concerned citizen,

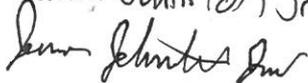
A handwritten signature in cursive script, appearing to read "Bruce Flot", followed by a horizontal line.

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

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Concerned citizen, James Johnston Jr.


US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

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Concerned citizen,

John Wayne Counsell

3/20/19

John Counsell

US Army Corps of Engineers
100 W Oglethorpe Avenue
Savannah, GA 31401

Environmental Impact Statement Comment

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Concerned citizen,

PA Cullens



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BY ELECTRONIC FILING

Savannah District U.S. Army Corps of Engineers
Planning Division, ATTN: Ms. Robin Armetta (PM-P)
Planning Division, ATTN: Ms. Julie Morgan (PM-P)
100 West Oglethorpe Avenue
Savannah, Georgia 31401-36046

Re: Savannah Riverkeeper comments on the Draft Integrated Post Authorization Analysis Report (PAAR) and Supplemental Environmental Assessment (SEA), Fish Passage at New Savannah Bluff Lock and Dam (NSBLD), and Draft Finding of No Significant Impact (FONSI) to evaluate proposed changes to the Fish Passage feature of the Savannah Harbor Expansion Project (SHEP).

Executive Summary

Savannah Riverkeeper and our expert colleagues believe that the best recommendation for the fish passage at New Savannah Bluff Lock and Dam is an adapted version of Alternative 2-3, detailed in the following comments, which includes a set of crest gates to allow for water control. This adaptation not only brings the project into better compliance with the WIIN act, but also satisfies the concerns voiced by the local community about pool level, flooding, and damage to the park. Other recommendations detailed herein include consideration for the safety of recreational users and the historical significance and future potential of the adjacent park as a community resource. We support plans for the removal of the current structure and implementation of a rock dam as a fish passage solution. We would like the Corps to consider and ultimately choose an alternative that passes fish successfully and meets the needs of the community invested in and affected by the project. It is our hope that the recommendations put forth below will assist in achieving that balance.

Background

These comments are being submitted on behalf of Savannah Riverkeeper, Inc. (SRK) and Waterkeeper Alliance (WKA). SRK is a 501(c)(3) nonprofit organization working to respect, protect, and improve the entire Savannah River Basin. We have over 4,500 members in Georgia and South Carolina and serve as a non-governmental liaison between the citizens who live in the watershed and government agencies. We represent more than 1.4 million people in both Georgia and South Carolina who rely on the watershed for drinking, fishing, recreation, and industry. WKA is a not-for-profit, member supported, international environmental organization which unites more than 300 Waterkeeper Organizations and Affiliates that are on the frontlines of the global water crisis, patrolling and protecting more than 2.5 million square miles of rivers, lakes, and coastal waterways on 6 continents. United as one powerful force, WKA fights for every community's right to drinkable, fishable, swimmable water.



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Savannah Riverkeeper has been heavily involved in all aspects of the Savannah Harbor Deepening Project (SHEP) since our inception in 2001. We served on the Environmental Impact Statement (EIS) stakeholder group throughout its existence, providing input along the way. We also are one of the parties to the settlement agreement related to the EIS and are intent on ensuring the efficacy of fish passage around the NSBLD.

Successful fish passage around the NSBLD is incredibly important not only for restoring anadromous fish access to the shoals above the City of Augusta, but the fish passage installation triggers improvements to two other structures at currently impassible dams located further upstream: the Augusta Canal Diversion Dam and the Stevens Creek Hydroelectric Dam. The two upstream dams are required to install fish passage per their licenses once NSBLD passage is complete. The successful installation of fish passages at the three dams would open up more than 36 miles of currently disconnected riverine habitat, much of the 36 miles is comprised of rocky shoals. If the entire 36 miles of river were restored, it would yield a whitewater canoeing and kayaking area that would be unmatched in the rest of the country. It would also restore vital habitat to a wide range of fish and other aquatic species. The Augusta economy would also benefit from these changes. It is for these reasons and others that we have been working so closely with the Army Corps of Engineers and other state and federal government agencies, as well as the Cities of Augusta and North Augusta, to design the project in such a way that the pool level is not significantly changed and fish passage is much more likely.

SRK has always championed a fish passage solution that incorporated a rock dam and, as a result, SRK was one of the driving forces behind the Water Infrastructure Improvements for the Nation Act of 2016 (WIIN Act). The WIIN Act made critical changes to the Water Resources Development Act of 2000 which allow for a project to be constructed in line with the SRK approach outlined below, in short, the 2.3 alternative with some modifications. SRK advocated so strongly for the WIIN Act because we are intent on seeing that every federal and non-federal dollar that is spent on this project yields the greatest positive impact on the river, the people living in the watershed, and the economies of both Georgia and South Carolina.

The original design of the project specified that 100% of the funds for the project would be spent on creating a fish passage structure on the South Carolina side of the failing dam, without regard to local considerations. That section would have been separated from the historic park located on the Georgia side. This would have disconnected the Augusta community from a large portion of their river and would have left the dam, already in a documented state of disrepair, to continue its downward spiral. If the NSBLD were to fail, it would be a catastrophe—the elevation



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of the upstream pool would drop precipitously, water supply intakes upstream would be left high and dry, and the efforts of upstream municipalities to encourage economic and recreational revitalization would slow significantly. Thus, it is extremely fortunate that Congress demonstrated its understanding through the WIIN Act that repairing the lock and dam may not be the best solution to solving the dam failure and fish passage challenges. Instead of insisting that the deteriorating and dangerous structure be repaired, Congress focused on maintaining the pool level to the extent possible and providing appropriate fish passage. In so doing, Congress left the door open to creative approaches to addressing these two issues, such as the rock dam, described below.

Regardless of the approach ultimately selected, it is crucial that any negative impacts on the community are mitigated to the highest practical extent and that some benefits to greater Augusta are also provided by the project. For instance, the historic park must be preserved or enhanced. The current chosen alternative requires much of the park to be excavated and turned into a flood control structure. Destroying the park is something we should avoid at all costs. We should also strive to maintain a reasonable pool level behind the NSBLD so that the recreational activities, and water intake structures that the pool supports are not eliminated or impaired.

The project must be designed in such a way that the surrounding communities feel that the project benefits them and is not being designed solely to benefit the Georgia Ports Authority, the citizens of Savannah, or the Atlantic sturgeon. If people within the greater Augusta area accept this “us versus them” narrative, it will be difficult to convince them otherwise and they will resent the project whether it is beneficial to them or not. This project must not be allowed to perpetuate the idea that it is the community vs. the fish.

Since our inception 18 years ago, SRK has understood that the most effective long-term way to get people to care about the health of the Savannah River is to encourage them to paddle and fish on it and swim in it. Recreation is key to developing ownership in the river. For this reason, we have held events on the water and fought for safe access to waterways throughout the Savannah River basin. River recreation is more than just a way to improve the health of the waterway; it can also be a major economic driver for a community.

For example, Columbus, Georgia credits its economic revival on the removal of two low-head dams. This restored rocky shoals habitat and fish passage along the Chattahoochee River. It also created an outstanding two-mile long white-water run that has drawn paddlers, rafters, and anglers to Columbus. Maximizing the river’s recreational and natural potential in this way has resulted in community growth and a vastly improved quality of life for all socioeconomic groups in the city. That economic boost has spurred millions of dollars in investments in both Columbus and Phenix City, Alabama, which lies directly across the river.



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Augusta's River Region could see an even greater resurgence if a white water component is included in the project. If the two small dams upstream of the NSBLD are modified in a manner similar to what we propose in these comments for the NSBLD, the shoals on the Savannah River could run 36 miles, a distance 18 times longer than the run in Columbus. This burgeoning "blue way" would attract paddlers from across the country. Successful fish passage and safe passage for recreational river users should go hand in hand, especially when the preferred fish passage can be readily adapted to meet the mandated needs of both.

While the currently recommended alternative, 2-6D, appears to meet the requirement for fish passage, it fails to maintain the current uses of the project area, that is, it would destroy the historic park. For this reason, we have been working to identify ways to adapt this alternative in a way that preserves the park, ensures adequate fish passage, creates safe passage for humans around the structure, and enhances the community by creating a white water course that would serve as a recreational magnet that will draw tourists to greater Augusta.

Shortcomings of the Recommended Alternative (2-6d)

The Corps is recommending Alternative 2-6d, despite its shortcomings which are detailed below.

The Historic Park

Under the WIIN Act, the historic park's current uses should be considered as part of the project. Alternative 2-6d, however, would allow the park to be destroyed. This would be a devastating loss to the South Augusta community, which has used the park for over 80 years. Because it is a federal park, the park was not segregated. For these reasons, the park is historically significant. Yet, under alternative 2-6d, the historic park receives no protection. Impacts to the many uses of this park should be avoided. With the modifications discussed below, the historic park could be preserved for future generations and the project could enhance the South Augusta community. These opportunities should be fully explored before any decision is made that would adversely affect the historic park.

Furthermore, the park has long been one of the few places in Augusta and North Augusta that cater to bank fishing. Although the area is not as heavily visited by regular park goers as in years past, there are very few times one can visit the park without finding numerous bank fishermen. The current plan destroys bank fishermen's access, which is in clear conflict with the intent of the WIIN Act to ensure current recreational uses of the river are maintained. The final plan must include mitigation, including reestablished bank fishing locations at the park, and this historic use of the park should be recognized in Cultural Resource Coordination.

We did not receive notice of the Section 106 Cultural Resources Coordination process and are appalled that all correspondences from agencies and other non-governmental organizations



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focused solely on the Lock and Dam structure. SRK requests that we be included in any continuing discussion about Section 106 Mitigation requirements, and strongly urge that any mitigation considerations moving forward include increased access for our fisherman, as well as recognition and protection of the historically significant uses of the park. We also request the South Augusta Neighborhood Alliance be included in those discussions moving forward.

The Historical Significance of the Park was highlighted in a recent request by the City of Augusta to develop a master recreation plan for the park and Augusta's River assets, quoted below. (RFP 18-300):

The plan must also incorporate multiple access points for anglers into the non-whitewater portion of the river. This site has been one of the main access points for bank fishing since at least the early 1950s, and maintaining that access is imperative to the community to maintain current uses and to avoid exclusion and gentrification. The two boat ramps that currently exist above and downstream of the dam are expected to undergo changes, however, maintaining motorboat access to the above and below portions of the river is also imperative. Access to navigation between the lock and dam to the Lower Savannah Region including to Savannah and the coast should not be impeded.

The New Savannah Bluff Lock and Dam (NSBLD) has historical race relations importance. During the 1950-70s when the majority of the City of Augusta was segregated, the park was not. It has served a social function as a gathering place for all of our citizens for over 65 years. Its pavilions have provided the location for hundreds if not thousands of family reunions, birthday parties, and civic meeting spots over time. It is an amenity that should remain with the community who has enjoyed it historically. That history and future use needs to be incorporated into the plan, ensuring the site's importance is recognized and maintained in the future.

The park is also home to many centuries-old large cypress trees and other protected wetland species whose protection merits strong consideration. We recommend working with local groups to identify species of interest. Plans must be designed to preserve as many of the existing trees in this category as possible. The site also includes challenges related to stormwater maintenance and control as much of the area is situated in flood zones and swampland. All future designs should allow for responsible stormwater retention, to incorporate innovative stormwater design features as well as strategic landscaping through bioswales, rain gardens, etc. Leaders and planners should seize the opportunity to implement green stormwater techniques and be recognized as a model site for river-friendly design that minimizes the impacts of runoff and pollution on the groundwater and waterway.

NSBLD park sits on the confluence of two emerging bike/nature/walking trails whose development is ongoing. The levee which starts above the remaining shoals in the river 17 miles upstream from the park creates an elevated path and contiguous trail through



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downtown Augusta ending at the park. Over 3/4 of this levee has been converted into a trail with remaining miles slated for conversion in the next few years. The Butler Creek trail starts at Lombard Mill Pond near Fort Gordon Gate 5 and running the length of the creek ending at the NSBLD park. That trail is 20% completed and is slated to be finished in coming years.

The overarching goals of the design should be to create connectivity among a growing metropolitan area and to provide opportunities for enhanced recreation and appreciation of our natural resources in ways that will contribute to improving the economy, pride, and quality of life for locals and visitors.

Mitigation for Lost Sea Connection

The NSBLD locks have provided a connection to the sea for upstream communities since the 1930s. Although the locks have been inoperable due to their deteriorated condition since 2014, it is clear the intent of the WIIN Act's inclusion of the lock wall in criteria to be assessed was based on the recognized importance of human passage around the structure. While we agree that motorized boat passage through the rock structure in the future is not a reality, we believe strongly that many non-motorized users will attempt to pass through the rock weir regardless of the configuration of the structure. *It is imperative that safe passage for in-river non-motorized recreational users be provided in this project.* It is for this reason, and for the safety of our citizens, that we strongly urge the Corps to consider a designated floodway/bypass channel that provides passage around the rock dam through the park, and that the project have minimal negative impact on boat ramp access and the possibility of improvements below the dam structure.

Upstream Water Level

SRK toured the entirety of the project area from the shoals to the dam almost daily during the Corps' recent demonstrated drawdown. We enlisted the help of a professional photographer to document drawdown conditions and impacts to the riverfront.

The following photos were taken between 9:00 am and 11:00 am on February 14, 2019. <https://brianphillips.zenfolio.com/p349061372>. The video taken that day is accessible here: <https://www.facebook.com/tonya.bonitatibus/videos/10155800554187455/>

River conditions during the drawdown created an emergent sandbar at the upper end of the Waters Edge subdivision and left a number of docks beached on the ground, with significant impacts to five private docks in the River North subdivision. Many public boat landings became unusable, with only the North Augusta Boat Ramp remaining functional throughout the entire drawdown. The training wall located through downtown Augusta was further exposed, blocking access from upstream to the docks below the training wall. It is almost certain that the larger boats at those docks would not be able to make it over the training wall to gain access to the river, rendering those docks useless. Currently, the Corps is only requesting that buoys be placed along the wall to mitigate the navigation hazard. We do not believe this is an appropriate mitigation; the wall presents a serious danger to river users and needs to be removed. It needs



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to be removed whether the elevation changes or not, as it is currently a hazard, the drawdown just exacerbated the issue. The drawdown exposed pilings from the wall well below the Boathouse in Augusta. If not removed, the newly exposed pilings will result in serious and potentially fatal accidents, as they are a new hazard previously unrecognized. The removal of the training wall will have many positive impacts on the river and the project, as it would eliminate the navigation hazard and the sandbar built up behind the wall will begin to assimilate back into the river. Considering the increased flow expected as a result of the project, it is likely that the sandbar will quickly decrease in size. This would help with the dock depths as well as the weed accumulation on the South Carolina side of the river. It is imperative that the training wall is removed as part of the project, it is currently a threat that will be exacerbated with any changes in water level.

The drop in pool elevation witnessed during the drawdown does not reflect the WINN Act's intended use of the pool. While we do agree the type of control currently enjoyed by the cities will change, the communities should be able to continue to use the resource above the dam as they did before this project. The EA designates 3' as the navigation channel to determine the availability of recreational use after the rock weir installation. Although we did not find any section of the river with less than 3' in the channel during the drawdown, we believe that this lower pool elevation would not support the same level of recreation that it does today. We also believe the goal of this project needs to be focused on retaining a 110-113' pool elevation, no more than a 2' drop in pool elevation at the dam. Our modifications to alternative 2-3, which are described below, would maintain such this pool elevation and thus would not deny upstream user current uses of the pool.

Fish Passage

SRK strongly supports rock dams as an appropriate technology for fish passage when complete dam removals are not possible. Rock dams have been used successfully throughout the nation, and the understanding of how best to design them is only improving with each implementation. One of the main challenges of ensuring successful fish passage is maintaining the appropriate depth (over 4') and velocity (no more than 5.0ft/sec) through the designated channels of the rock passage throughout crucial times of the year. We believe the addition of mechanized flow structures, which can be folded down completely to create a weir opening, can help significantly improve the effectiveness of the fish passage by allowing complete control of how the water flows through the passage structure. This also allows for greater flexibility to concentrate flow in the various channels through the rock weir and thus maximize fish passage. As explained below, we support alternative 2-3 with certain modifications. The modifications include the installation of crest gates in the rock weir. This refinement to the alternative not only allows for greater control of the water through the rock weir, it also leaves the pool higher upstream.

As this project moves forward, we believe it is incredibly important that the very best FWS and NOAA guidance criteria available be used in the design of the rock weir including the creation of pools large enough for the sturgeon, as well as channels for the other anadromous fish expected to make their return. The deficiencies and successes from the Cape Fear Lock and



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Dam #1 project should shape the design of this project. This will not only enhance the NSBLD project but also provide valuable information to inform the Cape Fear Lock and Dam #1 currently underway.

Our Suggested Path Forward: Adaptations to Alternative 2-3

SRK remains convinced the solution to meeting the requirements of the ongoing project is a rock weir. However, the currently proposed rock weir alternatives need to be modified. SRK along with a variety of fish passage experts have focused our efforts on an adaptation of Alternative 2-3 that includes the addition of gates and a bypass channel through the historic park (see Attachment 1). The adapted 2-3 has the lowest floodplain bench, thus, the historic park would not have to be used as a flood retention pond. However, the current design creates a significant drop in the pool upstream during normal conditions. Based upon the PAAR, we believe the solution to that issue is the installation of a series of crest gates, such as those described below, across the crest of the weir.

The fixed weir height set at 107 NAVD 29 could remain, but the addition of perhaps 6' crest gates (this height would need to be determined based upon refined design and modeling) would allow the ability to maintain a pool upstream in Downtown Augusta during drought within 1.5' of current conditions. However, with the excavation of a tiered channel through the historic park, the rock weir height could be raised slightly due to the floodway offset through the park. We believe this modification to alternative 2-3 would be the best solution. Much of the invert flood modeling will remain the same, and only slight modeling adjustments will be necessary to include our suggested adaptations. We would also like to request a 3D CFD model be used towards the completion of the design. This will provide the Corps with the information needed to facilitate construction and to minimize any adaptive management required in the future. Also, we believe strongly that the communities upstream be provided with consultants with suitable expertise on retainer and equipped with any necessary data if requested.

As stated, a bypass channel around the rock weir should be included in the project. This bypass can serve several important purposes:

1. It will provide crucial safe passage by humans in non-motorized boats around the structure. Note, however, that the rock weir will be a natural attractant to boaters, thus, warning buoys and markers must be deployed, as well as a bypass channel around the weir, with a series of additional buoys and appropriate signage that would require paddlers to bypass the rock weir. The bypass channel can also provide additional flood control and minor flow regulation to aid in upstream stabilization of pool elevations. If the channel were constructed with multiple tiers. The bottom tier could be used as a small-boat passageway, while the second tier would be available in times of flood. This tiered approach will provide even greater protection against flooding for the upstream communities and will allow even better control of rock weir flow velocities during high water events (see image 1.2).
2. The bypass channel can easily be adapted into a world-class whitewater course for Augusta's River Region, providing the community a desperately needed economic



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benefit. The vision of converting the historic park into a whitewater venue was adopted by the City of Augusta in its [Destination Blueprint](#) plan, and again in the recently commissioned *City of Augusta - River Vision Concept for the Savannah River* included in the City of Augusta's comments as an attachment.

- a. The 106 Mitigation or other mitigation funding should only include the excavation of the tiered channel, a bridge over the channel, and the installation of the crest gates at the channel's origin. This will provide low-hazard passage around the rock weir structure, and the ability to facilitate floodway control. The local municipalities can choose to move forward with creating additional features within the channel to maximize its potential as a recreational resource. It is our intent to advocate for, and belief that the cities will move forward with maximizing this recreational potential concurrent with the ongoing fish passage work.
 - b. This modified 2-3 alternative raises the level of the pool during low water periods as needed without increasing the flooding frequencies upstream. This prevents the need to mitigate or purchase easements upstream.
 - c. If the Corps chooses to move forward with this design, a stakeholder team should be considered to provide for greater sharing of expertise and design work. Recognizing the incredibly tight timeline, even if this group operates in an unofficial capacity, the sharing of data and design expertise can help greatly expedite this process. The stakeholder group should involve NOAA, USACE, FWS, and the local municipalities' fish passage experts.
3. Safe passage around this dam is crucial to unlocking the potential of the two imminent fish passage projects at the small dams upstream. The success of those projects and the community's acceptance of them will be framed by the success or failure of the NSBLD. The Corps of Engineers and Georgia Ports Authority have an opportunity to help ensure future projects geared towards increasing the viability of our anadromous endangered fish are able to move forward successfully. Allowing whitewater passage around the NSBLD achieves that goal, creating a win for our citizens and a win for the fish. It will keep individuals out of the fish passage, reducing any harassment of the fish, and will become a shining example of how projects like this can benefit all of our communities.

Design Considerations

The upstream entrance of the whitewater bypass channel would have a series of crest gates regulating the flow into the channel as required. The park channel would be designed to be operated over a range of flows. Typically this could be around 400-800 CFS and would include movable features that could be configured to allow extra water through the rock weir as needed. The tiered channel could be grass or made from rock and concrete to prevent fish from being trapped in the channel should they enter the channel during high water periods. We believe the best location for the end of the channel is one of the existing ephemeral ditches that terminate at Butler Creek. The increased flow into Butler Creek may serve to help build the gravel bar directly upstream of the creek's terminus at the river. The bypass channel could be operated as a whitewater channel outside of spawning periods, during spawning periods the



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gate at the top of the channel could be closed completely eliminating the possibility of attractant flows. A variety of techniques could be applied at the terminus of the channel to further reduce the possibility of attractant flows confusing spawning fish.

To prevent sturgeon from being trapped behind the gates on the rock weir on their descent, we suggest a variety of semi-separated parallel routes that would terminate at certain channels of the weir. These routes could be optimized for a wide range of flows. Specific sills downstream of the gates, located within the rock ramp, could serve to route sturgeon towards lowered gates.

Ensuring successful fish passage is not just science but an art. We recommend that an adaptive management approach be taken to include monitoring the passage of target species and making adjustments to improve such passage if necessary. The addition of crest gates will allow changes to flow rates and hydraulic conditions thereby enhancing the effectiveness of adaptive management and improving passage success.

Description of Crest Gates

There are a number of different types and brands of crest gates, also called automated flashboards, that could be used for the project. ([Video of Obermeyer system here.](#)) Obermeyer gates, which are pneumatically actuated gates, have become the industry standard flashboard/crest gate over the years, largely due to the simplicity and hardiness of their design. In fact, Obermeyer supplies the majority of gates for this type of application in the United States. This technology utilizes a combination of metal flap-gates and multiple small inflatable bladders to adjust the elevation of the gates as shown in Figure 4. The metal gate protects the inflatable bladders from debris, provides a much more predictable water surface elevation and discharge rate, and also provides a cover for the bladders when they are deflated. The gates could be installed in independently controlled 10'-15' sections, allowing for maximum control of flow through the fish passage structure. For safety and to prevent attractant flows the gates should not be significantly overtopped. Instead, gate sections would be folded down creating the weir length needed to route the flow through the intended zone or channel of passage needed to optimize the passage of sturgeon. It is highly likely the gates would not extend across the entire weir and would vary in height depending on the location within the structure. During normal and high flow, very few if any of the gates would need to be raised.

Obermeyer gates are economical to install and to maintain. Obermeyer gates will require periodic inspection to check the integrity of the air bladders and steel gates. The bladders are constructed of multiple plies of polyester and tire fabric which help protect them from tough environmental and vandal encounters. They are also UV and puncture resistant. The estimated life of the rubber hinge and bladder is reported by the manufacturer to be about 35 years. The life cycle cost of the Obermeyer gates greatly outperforms other gate systems on the market today. The Obermeyer gate air bladders can be connected to controls individually or in banks of multiple bladders to achieve virtually any desired gate operation scenario. Obermeyer gate set



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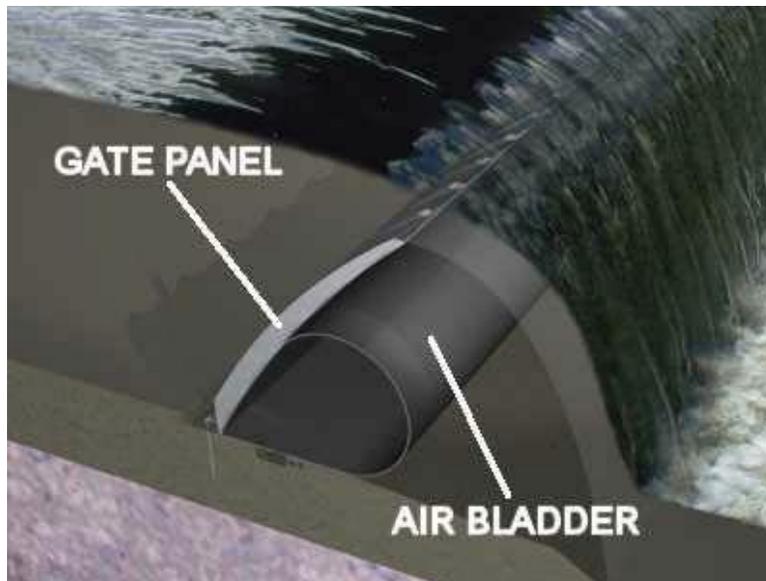
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up for low- hazard modulating sections will require separate sets of controls to adjust the air pressure in the support bladders.

The advantages of this modification of Alternative 2-3 are numerous. It allows for a great amount of control of the flows of water through the rock weir structure, making fish passage more effective throughout a wider range of flows. The gates would improve fish passage conditions by maintaining minimum target depths while reducing flow velocities. The gates would also cause a decrease in the variations of peak velocities for a wider range of flows. This highly adjustable control allows for the fine-tuning of the flow through the weir, allowing it to not only be maximized for sturgeon passage, but for other species as well.



The addition of the crest gates also allows for a reduced elevation change upstream during drought situations while providing crucial flood protection when needed. In a high flow or flooding event, the gates would simply fold down. However, in lower flow situations, some of the gates can be raised as needed to maintain the pool at a higher level, preventing negative impacts to upstream users.

Figure 4. Schematic of Water Flow Over



This technology has been in use for about 15 years and gates with heights of up to approximately 5.5 m (18 ft) have been installed. Until now, most Obermeyer spillway gates have been installed in the U.S., but with contracts in India, Peru, and Germany underway, its use will become as global as that of the inflatable rubber dam within a very short period (Obermeyer, 2006).



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An example of a Tiered Rock Channel: (Image 1.2) S20 Apple Valley Bank Stabilization

(From Union Street Dam Betterment Plan Traverse, City MI 2015): *Obermeyer has provided the unit cost information as a function of gate height. For gates between 2 feet and 4 feet high, the range in cost is \$450 - \$500 per square foot. For gates between 4 feet and 8 feet high, the range in cost is \$550 - \$650 per square foot. For gates between 8 feet and up, the range in cost is \$850 - \$950 per square foot. These costs include the gates, bladders, and control equipment delivered to the site. However, recent bids have shown these figures to be 8 to 40 percent low.*

Conclusion

The Corps' proposed project will improve fish habitats in the area but could have detrimental effects on recreational opportunities and water levels upstream. Having worked with experts as well as people in the community to provide informed comments within the required period, our goal is to help ensure recreational opportunities, such as those in our modified alternative 2-3, are implemented. In summation, Savannah Riverkeeper's requests that the chosen option:

- Successfully implements fish passage at the same level or better;
- Does not degrade, destroy or damage the current condition or potential for improvement at the historic park.
- Includes low-hazard passage for public use of non-motorized boats through or around the structure, as well as fishing access to the river, and;
- Leaves water levels significantly higher than the February 2019 test drawdown, between 111-113 ft., by use of installation of crest gates (adapted version of 2-3).

We can and must preserve the pool, free the fish, save the park, and improve recreation for the ecology, economy, and quality of life in Augusta's River Region. We believe that local compromise and the adaptations and recommendations detailed in these comments are the way to balance a complex set of needs.

Rock Ramp with Crest Gates & Recreational Bypass Option



Entrance Gate to Whitewater Course



Series of Crest Gates Along Crest of Rock Ramp



Buoys and signs to guide river users to Whitewater Bypass

ALTERNATIVES SUMMARY

1. Crest gates added along the Crest of the Rock Ramp
2. Recreational Whitewater Bypass Channel around Rock Ramp
3. Enhanced Usage and Accessibility of the Park

1" = 200 feet



support-savannah-riverkeepers-plan-for-lock-and-dam_041619

Number	Date	First Name	Last Name	City	State/Province	Country	Why is this important to you?
1	03-04-2019	Dana	Griffin	NORTH AUGUSTA	South Carolina	United States	I personally looked at the impacts and did not see anything of significant concern. I love the idea of protecting the local wildlife.
2	03-04-2019	Parin	Amin		Georgia	United States	
3	03-04-2019	jimmy	todd	belvedere	South Carolina	United States	recreation ,life in general
4	03-04-2019	Laurie	Moore	Evans	Georgia	United States	Augusta is trying so hard to improve its downtown area and the Savannah River is a major part of it. As a resident of Columbia County and a GA tax payer what strengthens Augusta increases my quality of life and property value. Certainly lowering the river to the Corps proposed level would make the river less of an asset for the city and all the surrounding towns whose populations view and enjoy the river daily. Given what the Port of Savannah's project is costing, Augusta's small portion of the cost to improve our lock and dam area in a way that will guarantee the Savannah River be maintained at a level no more than a foot below it
5	03-04-2019	E.	Richards	North Augusta	South Carolina	United States	
6	03-04-2019	Nancy	James	Augusta	Georgia	United States	Lock and Dam Park.
7	03-04-2019	Katerina	Richardson	augusta	Georgia	United States	I live near this river, i swim in it. It is important for Augusta - many awesome events happen on it and bring people to town
8	03-04-2019	Dennis	Patterson	Augusta	Georgia	United States	I think the rusted relic of a dam should've been removed years ago.
9	03-04-2019	Heather	Berry	Augusta	Georgia	United States	
10	03-04-2019	Greg	Sutherland	Dearing	Georgia	United States	
11	03-04-2019	kristen	tharpe	augusta	Georgia	United States	i am a homeowner on the river, with a dock and boat.
12	03-04-2019	Richard	Kamulda	North Augusta	South Carolina	United States	Investments and improvements in downtown Augusta and North Augusta would be rendered valueless if the pool is not maintained. The solution for the Lock and Dam must include a preservation of the pool. A passageway for
13	03-04-2019	Roger	Byers	McCormick	South Carolina	United States	
14	03-04-2019	Kevin	Fox	Evans	Georgia	United States	
15	03-04-2019	Ann	Sutherland	Dearing	Georgia	United States	
16	03-04-2019	Lawrence	Komp	Martinez	Georgia	United States	
17	03-04-2019	alicia	bible	Evans	Georgia	United States	
18	03-04-2019	Jonathon	Anderson	Augusta	Georgia	United States	I am avid Kayaker
19	03-04-2019	William	Pruitt	Martinez	Georgia	United States	
20	03-04-2019	Carol	Campbell	Augusta	Georgia	United States	Current plan by Corp of Engineers appear to care more for the fish than they do on the citizens and economics of the entire CSRA. The Corp plan will be extremely harmful for the economic environment and future of the area
21	03-04-2019	Amy	Corbitt	North Augusta	South Carolina	United States	
22	03-04-2019	Coy	Wehant	Tignall	Georgia	United States	
23	03-04-2019	Christina	MacPhee	Augusta	Georgia	United States	
24	03-04-2019	Loretta	Patterson	Augusta	Georgia	United States	
25	03-04-2019	Jessica	Badger	Thomson	Georgia	United States	
26	03-04-2019	Christina	Berkshire	Augusta	Georgia	United States	
27	03-04-2019	Mark	Peacock	Augusta	Georgia	United States	help the fish, but preserve pool of water upstream, no drastic lowering of water level
28	03-04-2019	Mike	W	Martinez	Georgia	United States	Augusta and North Augusta have both developed largely based on the "pool" the Lock & Dam created since 1937. Removing or significantly reducing the pool now, >80 years later, will have a lasting negative impact on fur
29	03-04-2019	Michael	Jones	North Augusta	South Carolina	United States	
30	03-04-2019	Gary	Elder	Tignall	Georgia	United States	I live on the Broad River.
31	03-04-2019	Joe	Hinely	Garden City		Georgia	
32	03-04-2019	Dave	McCluskey	North Augusta	South Carolina	United States	Water is life. Improve the river
33	03-04-2019	Jeremy	Hill	Bamberg	South Carolina	United States	
34	03-04-2019	Tyler	Farmer	Evans	Georgia	United States	Water is life.
35	03-04-2019	Tonya	Bonitatibus	Hephzibah	Georgia	United States	
36	03-04-2019	Josh	Williford	Greenville	South Carolina	United States	I want to see a restored Shad run and the Sturgeon rebound back from endangered status. I want people to allow the river to awe them with what she can do.
37	03-04-2019	Ron	Bryant	North Augusta	South Carolina	United States	I live on the River! New business and existing businesses depend on the current level. Drag boat races , regatta races , iron man competitions , amph theatre , concerts , etc. Surely this is not about the fish. We need to follo
38	03-04-2019	ken	lang			Canada	
39	03-04-2019	Sharon	Brooks	Augusta	Georgia	United States	I utilize safe navigation of the Savannah River above and below the Augusta lock and dam for recreational purposes. I would like to restore the natural spanning grounds of the Atlantic Sturgeon.
40	03-04-2019	Mary	Jacobson	Hephzibah	Georgia	United States	
41	03-04-2019	Jason	Jacobson	Hephzibah	Georgia	United States	Healthy water and fish
42	03-04-2019	lydia	piper	Augusta	Georgia	United States	I enjoy kayaking and support improving the recreational use of the river .I want a good balance between keeping the water levels adequate for fish access and navigation by non-motorized vehicles.I want to preserve the river
43	03-04-2019	Alex	Baker	North Augusta	South Carolina	United States	The Savannah River is a crucial part of life for the people of Augusta and North Augusta. Outdoor recreation is one of the main aspects of the river that the citizens of the CSRA can enjoy. The health of the river and the wildlif
44	03-04-2019	David	Hoel	Aiken	South Carolina	United States	I want to be able to kayak, canoe and fish rapids at the lock & dam
45	03-04-2019	Jonathan	Frazier	Augusta	Georgia	United States	To be able to go boating safely up river,swimming, fish,and other water craft activities.
46	03-04-2019	Patricia	Lynch-Hayes	Augusta	Georgia	United States	Our river is a tremendously important natural resource. It is vital to our community that we make the best possible decisions about its use.
47	03-04-2019	Craig	Wildi	Newington	Georgia	United States	
48	03-04-2019	nick	robley	manchester		United Kingdom	
49	03-04-2019	Jeff	Coffey	Augusta	Georgia	United States	I use the river for recreation.
50	03-05-2019	Sheldon	Yoder	Hephzibah	Georgia	United States	Because the pool level is important
51	03-05-2019	Joyce	Ramsbotham	Augusta	Georgia	United States	Why shouldn't it be important to us.Repair the Lock and Dam.Get out rather than setting behind your desk.LOOK OPEN YOUR CLOSED EYES.
52	03-05-2019	Justin	Martin	Liberty	South Carolina	United States	
53	03-05-2019	Marcia	Frank	Evans	Georgia	United States	
54	03-05-2019	Kyle	Daniel	Augusta	Georgia	United States	I fish frequently on the Savannah river in a kayak and enjoy the natural beauty this place has provided me. Even though I am moving from town soon, I want it to be preserved the way it is now for years to come.
55	03-05-2019	Brian	Allen	North Augusta	South Carolina	United States	For numerous reasons, the primary being riverfront property values,boating safety,aesthetics and bank integrity. It is entirely unfair to Augusta and North Augusta to implement change in favor of Savannah's bay project at the
56	03-05-2019	Terrie	Phenicie	ATHELSTANE	Wisconsin	United States	
57	03-05-2019	David	Mewborn	Savannah	Georgia	United States	It concerns the health and access to Savannah River
58	03-05-2019	Kelsey	Davidson	North Augusta	South Carolina	United States	
59	03-05-2019	Jason	Timmerman	THOMSON	Georgia	United States	I am a kayaker and love the river. Taking away the Locks would destroy the beauty we already have.
60	03-05-2019	Barbara	Barnett	North Augusta	South Carolina	United States	I live in this area and often enjoy kayaking and fishing on the river. Many of my friends enjoy boating on the river also.
61	03-05-2019	Laura	Phinizy	Augusta	Georgia	United States	The Savannah River has been the lifeblood of Augusta since its founding in 1736. The lock and dam originally enabled boats to reach the city as the decades went by. The pool the dam created has enabled Augustans to co
62	03-05-2019	Kathryn	Watkins	Augu	Georgia	United States	
63	03-05-2019	Keith	Mehlenbacher	N. Charleston	South Carolina	United States	
64	03-05-2019	Keri	West	Port Saint lucie	Florida	United States	
65	03-05-2019	Stephen	Scott	Appling	Georgia	United States	I have fished this river all of my life
66	03-05-2019	Varnell	Bentley	Grovetown	Georgia	United States	
67	03-05-2019	Lisa	Clarke	Evans	Georgia	United States	
68	03-05-2019	Jean	Yarsawich	Augusta	Georgia	United States	I visited downtown Augusta and spent time enjoying the riverfront area, years before I moved to this area - that visit stayed in my mind and heart. Years later I was thrilled to move here. Our riverfront is an asset for the entire
69	03-05-2019	Amber	Porterfield	Augusta	Georgia	United States	The preservation of the river is important to our county and the state. I want my grandchildren to be able to enjoy the Savannah river in all its natural, protected, HEALTHY glory.
70	03-05-2019	Michael	Neal	Savannah	Georgia	United States	
71	03-05-2019	Chad	Kimbrell	Aiken	South Carolina	United States	
72	03-05-2019	Ashley	Holmes	Augusta	Georgia	United States	
73	03-05-2019	Todd	Tharpe	Augusta	Georgia	United States	Protecting property values
74	03-05-2019	Angela	Carter	Beech island	South Carolina	United States	I spend my every off day on the savannahriverwith my kids. We gill and enjoy tge wild life and kayak as well as boat. Please its our only vacation from the n l rm of life where we can enjoy the scenery the sounds of the riv
75	03-05-2019	Ellen	Clark	Augusta	Georgia	United States	For the obvious reasons of course, we did not utilize the Savannah River like we need to and should! And doing that wall at the Lock and Dam is preposterous! The devastating effect it will have to all involved!
76	03-06-2019	Pamela	Bowe	North Augusta	South Carolina	United States	
77	03-06-2019	William	Stovall	Savannah	Georgia	United States	
78	03-06-2019	John	Cogley	Martinez	Georgia	United States	I wish to preserve the beauty of our downtown waterfront and protect the river for recreational use.
79	03-06-2019	Lawton	Hair	Clarks Hill	South Carolina	United States	
80	03-06-2019	Brad	Wittfeld	Savannah	Georgia	United States	
81	03-06-2019	Scott	Mann	Augusta	Georgia	United States	
82	03-06-2019	B.A.	Sikes	Augusta	Georgia	United States	
83	03-06-2019	Monica	Tatela	Augusta	Georgia	United States	
84	03-06-2019	kerry	chrisswell	graniteville	South Carolina	United States	
85	03-06-2019	Siera	Jensen	HOLLIDAY	Utah	United States	
86	03-06-2019	Richard	Kent	Augusta	Georgia	United States	
87	03-06-2019	Dawn	Smith	Lebanon	Tennessee	United States	
88	03-07-2019	Michelle	Watkins	Augusta	Georgia	United States	
89	03-07-2019	Nancy	Tomlinson	Williston	South Carolina	United States	
90	03-07-2019	L	H	Evans	Georgia	United States	
91	03-07-2019	Karmen	Giddens	Augusta	Georgia	United States	
92	03-07-2019	Michael	Friedmann	BRONX	New York	United States	
93	03-07-2019	Marie	Taylor	Millen	Georgia	United States	I am worried about down stream. We love to fish and they have the river down stream in a mess. How will this affect down stream?
94	03-07-2019	Steven	Hott	Augusta	Georgia	United States	Protecting our natural resources is important for future generations like our kids and their kids. Keep Georgia beautiful and
95	03-07-2019	mauricio	carvajal	santiago		Chile	
96	03-08-2019	Dana	Parish	Hephzibah	Georgia	United States	
97	03-08-2019	David	Caldwell	Lawndale	North Carolina	United States	For the river
98	03-08-2019	Frank	Sidener	Augusta	Georgia	United States	
99	03-08-2019	Leslie	Wright	Martinez	Georgia	United States	
100	03-09-2019	Jonathan	Fuller	Appling	Georgia	United States	

102	03-10-2019	Michael	Frazier	Augusta	Georgia	United States	
103	03-12-2019	Marilyn	McLeod	Martinez	Georgia	United States	
104	03-19-2019	Kimberly	Roberts	Savannah	Georgia	United States	I am excited about the newer technology that will preserve the natural beauty of the river, will benefit wildlife and promote recreational use of the river banks. The health of the Savannah River Watershed is important to the sta
105	03-19-2019	Jody	Tinsley	Mtn Rest	South Carolina	United States	I've paddled the whole length of the beautiful Savannah River, and one of the awkward parts was portaging this dam. An option that allows the passage of canoes and kayaks, as well as fish, is the right option. This isn't a p
106	03-19-2019	David	Dexter	Aiken	South Carolina	United States	This plan is all positives.
107	03-19-2019	chad	plumly	ATLANTA	Georgia	United States	
108	03-19-2019	Jessica	Yu	Augusta	Georgia	United States	It is life blood to Augusta. Events, walkways and businesses thrive on a healthy river level.
109	03-19-2019	Elizabeth	Goodson	Waynesboro	Georgia	United States	
110	03-19-2019	matt	lyon	North Augusta	South Carolina	United States	The river is the major attraction in Augusta. The degradation of this will affect the whole eastern side of Georgia economically. I work for the medical school and recruitment of students, residents, and faculty depends (in Aug
111	03-19-2019	Delores	Moxley	North Augusta	South Carolina	United States	To maintain recreational activities in the area and beautification. Realistic Tax-payer compromise!
112	03-19-2019	Paula	Wheatley	Guyton	Georgia	United States	
113	03-19-2019	Kevin	Ionno	Savannah	Georgia	United States	For the reasons outlined in the Savannah Riverkeeper's plan: • Successfully implements fish passage at the same level or better; • Does not degrade, destroy or damage the potential for improvement at the adjacent Lock & Dam Park; • Includes safe passage for public use of non-motorized boats through or around the structure, as well as fishing access, and; • Leaves water levels significantly higher than the Feb. 2019 test drawdown, lowering the pool no more than 1 foot.
114	03-19-2019	chris	owens	hoschtton	Georgia	United States	I travel to Augusta once a month to paddle on the river
115	03-19-2019	Teddy	Forbes	Grovetown	Georgia	United States	Fishing, kayaking and public park access
116	03-19-2019	Victor	Yu	Augusta	Georgia	United States	River water level must not be drawdown to the level as tested in Feb 2019. It will ruin the economy of both Augusta and North Augusta.
117	03-19-2019	Tim	Nelken	Martinez	Georgia	United States	The simplicity of the rock dam, a copy of what nature does, and has been working for thousands of years, over repeating a failed project because maintenance did not keep up with deterioration. There will be maintenance re
118	03-19-2019	Mark	Stipsits	Evans	Georgia	United States	
119	03-19-2019	Charles	Busbee	Graniteville	South Carolina	United States	
120	03-19-2019	Steven	Joubert	Hephzibah	Georgia	United States	
121	03-20-2019	Angeletic	Swiecki	Beech island	South Carolina	United States	To preserve the rivers antural beauty, as well as allowing continuous usage for recreation and to preserve animal sustainability.
122	03-20-2019	Stuart	Thompson	Martinez	Georgia	United States	
123	03-20-2019	Nancy	Albert	Grovetown	Georgia	United States	Cost, fish and whitewater.
124	03-20-2019	Karon	Mansell	Augusta	Georgia	United States	Because I am a tax payer in an area that does not benefit from tax money.
125	03-21-2019	Jim & Elke	Slaughter	Dearing	Georgia	United States	It is part of Augusta history! It should be restored and maintained.
126	03-21-2019	Chris	Johnson	Dearing	Georgia	United States	Childhood memories
127	03-21-2019	Bj	Joubert	Woodstock	Georgia	United States	
128	03-22-2019	Melanie	Wade Larsen	Augusta	Georgia	United States	All of the progress that has been made downtown could be threaded by lowered river levels.
129	03-22-2019	R	M	Augusta	Georgia	United States	
130	03-24-2019	JAMES	BETZ	DEMOREST	Georgia	United States	
131	04-01-2019	Taylor	Stacy	North Augusta	South Carolina	United States	
132	04-05-2019	DONNA	GOINS	Martinez	Georgia	United States	This is an optimal opportunity to make this site the best it can be for wildlife and most user friendly for recreation.
133	04-05-2019	Henry	Smith	Hephzibah	Georgia	United States	
134	04-08-2019	Rebecca	Ricks	Augusta	Georgia	United States	
135	04-08-2019	Deborah	Brooks	North Augusta	South Carolina	United States	
136	04-08-2019	Freda	Tylor	Martinez	Georgia	United States	
137	04-14-2019	Rick	Marschalk	Augusta	Georgia	United States	Thanks for coming up with a better solution than what has been already proposed by Army Corps of Engineers.
138	04-14-2019	Richard	Pope	Appling	Georgia	United States	
139	04-15-2019	June	Visintainer	Augusta	Georgia	United States	The Corps of Engineers proposal is extremely damaging to the recreational aspect of the river, not to mention killing potential for boating events, half iron man, etc. This would effect downtown financially in a major way.
140	04-16-2019	Samantha	Pollock	Appling	Georgia	United States	As a current resident of Columbia county and former resident of Richmond county I have utilized various regions of the Savannah river for recreational activities. I would hate to see a change made that would negatively imp

Russell V. Mobley
202 Altamaha Drive
North Augusta, South Carolina 29841

April 16, 2019

U. S. Mail and Email: CESAS-PD@usace.army.mil
Savannah District
U.S. Army Corps of Engineers
Planning Division
ATTN: Ms. Robin Armetta (PM-P)
100 West Oglethorpe Avenue
Savannah, Georgia 31401-3604

Dear Ms. Armetta:

I live in North Augusta, South Carolina on the Savannah River in River North subdivision. During the recent draw down most of the docks and boats within view of my house were grounded in river mud, looking dreadful. Although my dock barely floated, venturing out on the river would not have been safe.

I am opposed to the proposed rock weir with the resulting drop in river pool. Such a plan will have an adverse effect on me and my neighbors in lowered property values and in the enjoyment of our homes.

From my law office on the river in downtown Augusta, the lowered pool was even more dreadful looking bringing to mind the likely adverse effect to Augusta, at a time when our economy is set for the biggest expansion in memory.

The following is a list of reasons residents are against lowering the river pool:

Adverse Economic Impact

- Industry and local municipalities draw water from the river;
- Millions of dollars in lost revenue from events on the river (Half Iron Man, Regattas, Power Boat Races, Concerts, etc.) choosing another river that stays full. The Half Iron Man alone provides more than \$5,000,000 annually to the area.
- Over a billion dollars in recent investments has relied on a full pool (2 cyber security buildings, SRP Baseball Park, Crown Plaza Hotel, apartments, condominiums and parking decks). Will investors commit additional funds to projects overlooking a river swamp?

- The Patriot Tour Boat puts 225,000 people on the river annually. The lowered pool may prevent the boat from being able to continue operations and would certainly decrease interest in potential customers touring a shrunken river.
- One of my neighbors recently purchased a lot on the river in our subdivision. Because of the Corps' proposed plan to lower the pool, the neighbor decided not to build a home. How many more people are taking the same position?

Safety

- Portions of the wall mid-river were visible during the draw down. Countless boats and passengers will be at risk in striking objects that were once well below the surface and out of harm's way.
- At full pool, many trees, sandbars, a barge and other hazards are a safe distance below the surface. Decreasing the pool will make river travel more dangerous.
- A lower pool will increase the number of trees and foliage on the expanded muddy banks, providing a habitat for snakes and alligators and posing new hazards to swimmers and fishermen.
- The last two drawdowns damaged the sea wall at Goodale Landing. Certainly the change in ground pressure from a lowered pool will affect many other structures along the river. Has the Corps offered to repair damage caused by the lowered pool?

Beauty

- The draw down exposed shallow areas on both sides of the river, littered with logs, concrete slabs and other debris. A reflecting pool is beautiful even though it only has a few inches of water in it. The same is true for our river. Muddy, littered banks are an eyesore.

Follow the Law

- As an attorney, I reviewed the law governing the Corps' duties. It is required to maintain the river at full pool on the day the law went into effect on December 16, 2016, which was 114.5 feet above sea level. As the Corps is required to adhere to a plain reading of the law, it has no discretion to decide the pool should be maintained at a lower level. The Corps failure to follow the law will certainly result in protracted litigation.

Cooperation

- The Corp appears to be proposing the rock weir as a negotiating tactic to get the local governments to share in the cost of what it has been mandated by law to do. As an adversary relationship will never work, the Corp should change its stance to form a partnership with the local governments to solve the problem.

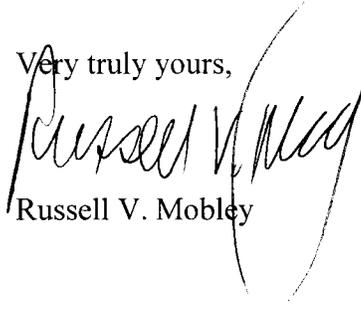
U.S. Army Corps of Engineers

April 16, 2019

Page 3

In conclusion, the rock weir with the resulting lowered pool is a bad idea, will result in an unsightly river swamp, will adversely affect the local residents and the economy and is contrary to the law. We urge the Corps to devise a plan in compliance with the law and one which will maintain the current pool.

Very truly yours,

A handwritten signature in black ink, appearing to read "Russell V. Mobley". The signature is written in a cursive style with a large, sweeping flourish at the end.

Russell V. Mobley

RVM:rmb

Savannah District, U.S. Army Corps of Engineers
Planning Division
ATTN: Ms. Robin Armetta (PM-P)
100 West Oglethorpe Avenue
Savannah, Georgia 31401-3640

April 16, 2019

Via email: CESAS-PD@usace.army.mil

Re. Draft Integrated Post Authorization Analysis Report (PAAR) and Supplemental Environmental Assessment (SEA), Fish Passage at New Savannah Bluff Lock and Dam (NSBLD), and Draft Finding of No Significant Impact (FONSI) to evaluate proposed changes to the Fish Passage feature of the Savannah Harbor Expansion Project (SHEP)

Dear Ms. Armetta,

The City of North Augusta and Augusta-Richmond County have jointly submitted comments on the above referenced documents. The comments are extensive and contain relevant citations.

The attachment to this letter provides separate, equally important, general comments regarding the U.S. Army Corps of Engineers approach utilized in determining its preferred alternative to accommodate the expansion of the Savannah Harbor.

Sincerely,

Robert A. Pettit
Mayor

1 Attachment: Specific Comments



Specific Comments

1. The conditions anticipated if Alternative 2-6d were implemented simulated in the February drawdown were clearly unacceptable to the residents of North Augusta. Citizens were assured prior to the simulation the change would be only minimally noticeable. In fact, riverfront residents were left with docks and boats high and dry, far from the river's edge. The potential economic impact to all residents residing in what were riverfront homes would be devastating. The City of North Augusta's \$80+ million investment in the \$240 million Riverfront Village development along the banks of the Savannah River was put at risk. The river has been an integral part of North Augusta for more than 80 years. The City is "South Carolina's Riverfront."

This impact is unacceptable. And clearly not what was intended when the WIIN Act was drafted.

2. A meeting was held in Washington, DC in November, 2017 with Senators Perdue and Isakson about this issue. M/G Donald Jackson, Deputy Commanding General for Civil and Emergency Operations, attended this meeting. A key point made by representatives of North Augusta, Augusta, and other local area officials was the language of the WIIN Act of 2016 required the pool elevation be maintained as it was on the date of enactment of the law.

In response to my letter of December 4, 2017, General Jackson offered the following observation in his reply to me dated March 15, 2018:

"With regard to your concern that existing pool elevations be maintained, please note that water levels in the pool fluctuate throughout the year and do not remain at a constant level. Since this is the case, the Corps' focus is to maintain the pool elevation at a level that ensures recreation and water supply needs are met throughout the year. The Corps intends to present a solution that allows for continued recreational opportunities, while providing sufficient depth for water users to continue to withdraw water from the pool and minimizing the risk of property damage due to flooding."

The letter fails to acknowledge the interpretation of the local officials might, in fact, be the correct interpretation. Instead, the letter focuses on the natural fluctuation of the levels as the discharges from Thurmond Dam vary and as the gates of the New Savannah Bluff Lock and Dam (NSBLD) are adjusted.

The April 9, 2019 letter signed by the four U.S. Senators from South Carolina and Georgia and the Representative Joe Wilson from SC and Georgia Representative Rick Allen to The Undersecretary of the Army (Civil Works) and Lt. Gen. Semonite, Commanding General and Chief of Engineers, U.S. Army Corps of Engineers, addresses the intent of Congress as it relates to maintaining the pool elevation and the recent Corps position the Congressional intent in the WIIN Act of 2016 related to



“functionality,” not pool elevation. As the letter makes clear, Alternative 2-6d, does not meet the intent of the WIIN Act of 2016.

The City of North Augusta’s position remains the language in the WIIN Act of 2016 specifically refers to the elevation of the pool as it was on the date of enactment of the law. This is the target elevation of 114.5 ft. NGVD 29. The City believes the Corps’ Implementation Guidance¹ is incorrect, and needs to be reissued to reflect the actual intent of Congress when the WIIN Act of 2016 was passed.

3. A letter from the Commander, Savannah District of March 14, 2019 provided updated cost estimates for Alternatives 1-1 and 2-6d. The cost estimate for Alternative 1-1 differed so greatly from the series of previous estimates as to be astounding. Additionally, no information was provided about the major assumptions, the rationale, or the basis of the costs was included. Essentially rendering the cost estimate little more than numbers to any who attempted to understand them. The City of North Augusta’s letter, dated March 29, 2016, to Colonel Hibner requesting a more detailed explanation of the bases for the cost estimate remains unanswered. Without a more detailed explanation, including risk of failure to successfully meet the target criteria in the Amended Biological Opinion, it is impossible to provide complete comments on the several documents out for public comment.
4. The Consortium of local governments and industries has been an integral part of discussions and meetings with the Savannah District for many years. In a letter to Colonel Hibner, dated, March 19, 2019, a number of specific requests were made to enable members to effectively evaluate the conditions simulated during the drawdown during the week of February 11, 2019.

The request for the record of river elevations and flows measured at the various gauges throughout the period of the simulation, from beginning of the drawdown to return to normal conditions, remains unanswered. In addition, records of the discharges from the Thurmond Dam over the same period of time were requested to calculate the likely impact of lower flows on facilities.

Without this data, it is not possible to accurately estimate the conditions at drought flows, 3,600 cfs, at the City of North Augusta’s drinking water intake. For that reason, it is important to make the point these comments are being provided based on limited and incomplete information.

5. The draft Finding of No Significant Impact is inconsistent with Army guidance as codified in Title 32, Subtitle A, Chapter V, Subchapter K, Part 651-Environmental Analysis of Army Action (AR 200-2). The City believes an Environmental Impact

¹ <https://balancingthebasin.armylive.dodlive.mil/2019/03/18/how-two-fish-passage-alternatives-compare/>, Draft Report, 4.3 Cost Sharing, p. 105, Implementation Guidance, May 25, 2017.



Statement (EIS) is required for the proposed action. The following conditions in §651.41 are met, each of which standing alone requires an EIS:

- (a) Significantly affect environmental quality, or public health or safety.
 - (b) Significantly affect historic (listed or eligible for listing in the National Register of Historic Places, maintained by the National Park Service, Department of Interior), or cultural, archaeological, or scientific resources, public parks and recreation areas, wildlife refuge or wilderness areas, wild and scenic rivers, or aquifers.
 - (d) Result in significant or uncertain environmental effects, or unique or unknown environmental risks.
 - (i) Be highly controversial from an environmental standpoint.
6. The Amended Biological Opinion (BiOp) establishes criteria for measuring the success of the alternative implemented at the NSBLD: achieve
- a. at least 75 percent upstream passage effectiveness for both Shortnose and Atlantic sturgeon
 - b. at least 85 percent downstream passage effectiveness, and
 - c. cause no serious injury to sturgeon that come into contact with the passage or dam structure.

The BiOp also states the previously presented fish passage design called an Off-Channel Rock Ramp would effectively pass sturgeon and other anadromous species. The proposed Alternative 2-6d is different than the Off-Channel Rock Ramp, and to the City's understanding, there is no existing structure which meets the criteria established in the BiOp.

Subsequent to opening the comment period for the subject documents, the City received from Representative Allen's office a letter to Colonel Hibner, dated 4/8/2019, from the National Marine Fisheries Service (NMFS) evaluating the relative effectiveness of Alternatives 1-1 and 2-6d for passage of fish. The conclusion in that report is that "Alternative 1-1 is unlikely to be as effective at passing fishes relative to the Alternative 2-6d."

This conclusion is vague and clearly not definitive in assessing the effectiveness of either alternative to meet the criteria in the BiOp. It also does not answer the concern expressed by the City and other local officials about the decision matrix contained in the Savannah District's November 14, 2018 presentation titled "*Fish Passage at the New Savannah Bluff Lock and Dam*" for effectiveness in passing fish. The Evaluation Criteria in that presentation for Fish Passage contained three elements:



- a. +1 = Successful migration, no delay
- b. 0 = Successful migration, delay possible
- c. -1 = Inability to pass fish

The letter states, for Alternative 2-6d: "The fishes are more likely to find suitable routes of passage at a multitude of flow conditions." Note that nothing is said about there being "no delay."

Selecting Alternative 2-6d as the alternative for successful fish passage over Alternative 1-1 is unsubstantiated by the information presented by NMFS. It is the City's understanding there is no structure that has been shown to meet the criteria in the BiOp for passing fish. Without that evidence as a basis for comparison, the information provided by NMFS does not provide a basis for determining that Alternative 1-1 would not meet the criteria in the BiOp any more than it provides confidence that Alternative 2-6d would meet those criteria.

7. The BiOp is frequently cited as being most important in the decision making process. Using the Savannah Harbor deepening as justification, the NMFS has determined access to the historic spawning area, the Augusta shoals, is the mitigation for the habitat destruction caused by dredging the harbor. The BiOp states "Moreover, passage at NSBLD is a pivotal component of NMFS's conversation and recovery efforts for both Atlantic and shortnose sturgeon." The NMFS has proposed mitigation far beyond that necessitated by SHEP dredging.

The BiOp states "Adult Atlantic sturgeon are currently using spawning areas downstream of NSBLD ..." The NSBLD is more than 180 miles upstream from the Savannah Harbor. The BiOp evaluates neither the extent of the spawning areas in the Savannah River between Savannah and the NSBLD nor the capacity of those areas to accommodate the recovery of the species of sturgeon, as clearly identified as an objective of NMFS.

A more comprehensive evaluation of the 180+ miles of the Savannah River should have been completed prior to selecting the final alternative.



April 16, 2019

The Savannah District
U.S. Army Corps of Engineers Planning Division
ATTN: Ms. Robin Armetta (PM-P)
100 West Oglethorpe Avenue
Savannah, Georgia 31401-3640

VIA: Email: CESAS-PD@usace.army.mil.

RE: Comments regarding the Draft Integrated Post Authorization Analysis Report and Supplemental Environmental Assessment for Savannah Harbor Expansion Project, Georgia and South Carolina: Fish Passage at New Savannah Bluff Lock and Dam

Dear Sir/Madam:

The Augusta Metro Chamber of Commerce serves a member constituency of 1,200 businesses and organizations throughout the Augusta Region. We serve as the voice of the business community by educating our members and advocating for public policy that supports a thriving economy.

For nearly 20 years, the Chamber has played a vital role in developing a long-term solution to the Savannah river conditions created by the New Savannah Bluff Lock and Dam. In its deteriorated state, the NSBLD threatens the sustainability of existing river elevations up-stream. The conditions of the pool play an important role for our industries and municipalities to draw water as well as significantly contribute to the existing and increasing use of the river for recreation, tourism and adjacent land use for both residential and commercial development.

From 2000 to 2014, the Chamber's efforts were largely concentrated on working with our members of congress to secure funding for its rehabilitation. When the NSBLD became the site of a fish mitigation project for SHEP in 2014, we were very engaged in understanding how the project would impact the NSBLD. With the passage of the WINN Act in 2016, our efforts refocused on monitoring the implementation of the requirements set forth in the Act including the development of a final project and its impact to the pool.

WINN ACT Project Modifications as Described Section 1319 (c)(1)(A)(i)(I)(II)

It is the opinion of the Chamber that the Corps has not met the requirements of the WINN Act by failing to fully study and examine an Alternative 1 project modification as specified in this section of the law.

Question: How many project concepts were developed during the planning period that repaired and modified the NSBLD so as to maintain the pool and meet other requirements including fish passage? We were told it was one concept in order to meet the minimum standard of the law. Is this accurate?

Question: What weight was given to the Chamber’s letter of May 26th, 2017, (exhibit A) which emphasized the continued need for navigation so that the Augusta Region was not cut off from areas down river and that the recreational value of the park should not diminish? How were the Chamber’s concerns about the engineering complexities of both impounding water and the passage of high flows considered in the formulation of project concepts, especially weirs?

Question: Please describe the Corps interpretation of (c) (1)(A)(II) that describes safe fish passage *over* the structure.... Was the language in the WIIN act to require a rock ramp to the crest of the dam for fish passage or around the dam/gates?

Question: Given that alternative 1-1 received a total score of 4 but a neutral rating on fish passage, what variations of alternative 1-1 were considered that improved fish passage? In reference to the previous question, did the Corps consider fish passage in channel, as a bypass or as a rock ramp over the dam? Additionally, did the Corps consider the 2014 fish bypass design, which met the requirements of the BO, as a feature of an Alternative 1 design?

Question: In a communication posted by the Corps on May 5th, 2017 (exhibit B) please clarify and further explain the Corps opinion that “The large costs for repair make the NSBLD a poor investment from the national perspective”?

Question: In the same communication posted by the Corps on May 5th, 2017, it is stated that the cost to rehabilitate the NSBLD would cost approximately \$30 million. In a communication posted March 18, 2019 by the Corps (exhibit C), the cost to rehabilitate the NSBLD is now estimated to be \$93,711,000. Please provide details on the certified cost and factors relating to an increase in cost of approximately \$60 million.

Question: In the March 18, 2019 communication, please further explain the following comment. Does this statement mean that the final project has already been specified by the Corps as a full-river fish passage and weir without consideration of any Alternative 1 concept? What is the purpose of public comment on the Draft Plan if the Corps has pre-determined the outcome?

“We are open to conversations with our non-federal sponsors and our water policy experts on other alternatives that would provide water surface elevations similar to Alt 1-1, but that include a full-river fish passage and weir”.

Question: The Evaluation Matrix utilized to compare and contrast alternatives specifies a cost of the No Action Alternative to be \$62,734,742. Is this a parametric or certified cost? What portion of the cost would have been investment for the project and what portion of the cost would have been rehabilitation to the NSBLD?

Draft Plan Recommendation 2-6d

It is the opinion of the Chamber that the current project modification proposed, 2-6D, does not meet the requirements of the WIIN Act because it fails to preserve an elevation adequate for water supply and recreational activities as in existence on the date of enactment of the Act.

Question: The Corps has interpreted the WIIN Act for depth of the pool to mean the functionality of the pool as of the date of enactment. Please state the minimum depth/range of water surface functionality the Corps has determined that will be required by the final project?

Question: Please explain if there are any plans to remove/deconstruct the training wall?

Summary and Chamber Resolution

On February 21st, the Chamber issued the following resolution so that our members could be better informed about the Draft Plan and participate in the public comment period. The names of 280 individuals and their affiliations are listed below. We urge the Corps of Engineers to develop a project that meets the needs of our community.

- Adhere to the implementation guidelines as set forth in the WINN Act, without bias, which requires maintaining the pool for navigation, water supply and recreational activities as in existence on the date of the enactment and to allow for safe passage of shortnose sturgeon, Atlantic sturgeon and other migratory fish to historic spawning grounds. As of the date of enactment, the water level of the Savannah River at the 5th Street Bridge was between 113.5 and 114.5 feet.
- Reassessment of the evaluation matrix and disqualification of the proposed project 2-6d based on significant losses in pool elevation for water supply and recreational activities. The loss of recreational activities includes the construction of a detention pond approximately 275 feet wide and 10 feet deep in the New Savannah Bluff Lock and Dam Park adjacent to the project rendering a significant portion of the park unadaptable for public use and jeopardizing the health, safety and welfare of the public.
- Ensure a fair and good faith process that supports the local community's desire to participate in the final project design and provide full disclosure and supporting documentation of the construction and management and operational costs of project 1-1.
- Conduct a comprehensive comparison and evaluation of the No Action Alternative (WRDA 2014) to projects 1-1 and 2-6d.

James Norwood	A3 Missions
Heather Griffin	ADP, Inc
Robert Johnson	AECOM
Harvey, Christy	AGS
Angela Chang	Alison South Marketing
Cynthia South	Alison South Marketing Group
deVane Batchelor	Allen Batchelor Const
Fletcher Dickert	Allen+Batchelor Construction, Inc.
Anne Bell	Anne Bell Enterprise
Charles C. Haywood	Applegraph Construction, LLC
Shelby Knostman	ARc
Jan Yu	Association Link
Shelly Martin	ATC Development
Brandi True	Atlanta Communities
Nancy Hannan	AU Health
Lee Ann Liska	AU Health
rebecca j woo	AU psychiatry
Kelly Hill	Augusta Best Hotel
Brandon Garrett	Augusta Commission
Sarah Childers	Augusta Convention & Visitors Bureau
Trent Snyder	Augusta Convention & Visitors Bureau, Inc.

Daniel Lee Burnfield	Augusta Custom Clubs
Kevin Enright	Augusta Developmental Specialists
Margaret Woodard	Augusta Downtown Development Authority
Timothy McFalls Sr	Augusta Economic Development
Gordon B. Hardy	Augusta Industrial Services, Inc.
Sharon Koon	Augusta Marriott at the Convention Center
Ira Miller	AUGUSTA MUNICIPALE GOLF COURSE
Brian Graham	Augusta Sports Council
Keith Edmondson	Augusta Sports Leagues, LLC
Isaac Kelly	Augusta Staffing Associates
Camille Price	Augusta Tomorrow, Inc.
Walter Welborn	Augusta Transportation
lynn cochran	AUGUSTA UNIVERSITY
Michele Reed	Augusta University
Teri Mobley	Augusta University Health
Donna Smith	Augusta University Medical Center
Joseph P John	AUMC
Lawrence Babbitt	BABBITT'S INC.
Sean Burke	Backyard Cookshop
David Bagwell	Bagwell Insurance Services
Sarah Peacock	BankSouth
Mike Guthrie	Bar on Broad
Larry Baratto	Baratto Consulting
Anthony Prestifilippo	Bb construction
Phillip Bell	Bell Security Systems
Christy Siverhus	Bella Holistics Skin Studio
Tom Blanchard	Blanchard and Calhoun
Michelle Lockhart	Blanchard and Calhoun Real Estate
Matthew	Boyce
Thomas D'Abruzzo	BrandStorm Promotions, LLC
William Mullis	Brian Mullis
Amy Dalton	Brookfield Properties
William regan	C & R HOME IMPROVEMENTS
Marcus Reid	C. A. Reid Sr. Memorial Funeral Home
Cameron Nixon	Cadence Bank
Joyce McLaughlin	Career Recruiting Specialists, LLC
Kate McGilvray	Caring resident of River Island
Frank Andrew	Carole Fabrics
Michael Perry	Catalyst Executive Advising and Development
Jerry Channell	CCWU

Mary Cheek	Charles W Cheek Agency, Inc.
Bert Dean	ClarionSouth, LLC
Coleman Scroggs	Clemson University
Rob Clifton	Clifton Construction
Warren Dixon	Coastal Services
Rod Barrie	Comfort Keepers
Bryan Howie	Communiographics
Jennifer Howie	Communiographics
Nancy Hohlwein	Concierge Real Estate
Deke Copenhaver	Copenhaver Consulting LLC
Bill Phillips	Countersync
Mitchell Murchison	Cranston Engineering
Ryan Sheridan	Cranston Engineering Group, P.C.
Ponita Hotchkiss	Critical Nurse Staffing
Tom Clark	CSRA, Alliance for Fort Gordon
Mark Barkley	CYBERMAVENS LLC
Eve Turner	Decorator's Outlet and Interiors
Maria Stephens	Does not apply
Susan Glenn	DoubleTree by Hilton Augusta
wolfart2@comcast.net	EAT Local CSRA
Velveeta Tanksley	Education
Butch Holley	Ellefson Transportation Group
Brian Ellefson	Ellefson Transportation Group
joshua keck	ellefson transportation group
Elizabeth Finch	Elliott Davis, LLC
Scott Hardigree	Email Industries
Scott Tomlinson	Episcopal Day School
Gordon Renshaw	Express Employment Professionals of Augusta
wendell s stephens	f
Rick Berry	faith housing coalition
Judy Fickling	FicklingAssociates
Will Dyer	First Baptist Church of Augusta
Michael Tomaszewski	First Call Environmental
Jordan Pierce	First Community Bank
Kim Elle	ForcesUnited
Bonnie Black	Forest Hills Storage
James Riley	Forward Dataworks
Russell Mobley	Fulcher Hagler LLP
Steve Sanders	Fulcher Hagler LLP
Fran Forehand	Georgia Power Company

Len Collins	GEORGIA STATE FLORAL DIST
keith shafer	Goodale Landing Homeowners Association
TERENCE SATONIA CANTY	Goodale landing resident
Samantha Clark	Goodale Lansing
Tripp Harrison	Goodwill
Kyle Titus	Goodwyn, Mills and Cawood, Inc. (GMC)
Randy A Stover	Graves Environmental & Geotechnical Services, Inc.
David R Hagler	Hagler Systems, Inc.
Gary L Heavener	Heavener and Associates
Jimmy Harris	Helping People Start Over
Caroline Herlong Turner	Herlong and Doran Financial Group
Rick Marschalk	Hildebrandt's
Charles Hock	Hock Development Company
William Keogh	Hull Barrett, PC
Mitchell Snyder	Hull Barrett, PC
Stephanie Dammen- Morrell	Hussey Gay Bell
Carolyn Baggott	Independent sales with Brown & Bigelow
Diana Cato	Individual
Billy Middleton	Industrial Metal Finishing, Inc.
Martin Click	International Link
Jason Whinghter	Ivey Development, LLC
Ty Whitman	Ivey Homes
Allison Waites	Ivey Homes
Colby Williford	Ivey Homes
Matt Ivey	Ivey Residential LLC
Jay Frye	Ivey Residential LLC
Ruby Vanzant Ray	James Ray Family Dentistry
James Burroughs	James W Burroughs CPA PC
Lisa McKinney	JMar Builders & Services Inc.
Holton Brinson	Jordan Trotter Commercial
Henry Pruett	Keller Williams- Augusta Partners
Christy Jones	Lark W. Jones Attorney at law
Lauren Black	Lauren Black
Steve Briggs	Legendary Sports
Louis Imbrognp	Live Healthy MD, LLC
Christine Miller-Betts	Lucy Lucy Craft Laney Museum of Black History
M. Brannon Sell	M. Brannon Sell & Co.
Robert E. McCrary III	Maner Builders Supply Co.

Ashley Wilson	Market House Realty
Kristen Dye	Mastermind Escape Games
Russ Martin	Meridian Waste
Dr. Robert L Williams	Miracle Making Ministries, Inc.
Holly Hulse	Morgan Advanced Materials
Jeff Siverhus	Mr
Donald Coulter	N/A
Brenda joyce Jackson	N/A
Barbara Moreadith	n/a
John Jopling	N/A
Yi Liu	n/a
Philipp Liu	N/A
Kari Brown	N/A
Chris smith	na
Everett Greenwood	National Electrical Contractors Assn
Everett Greenwood	NECA
Leila Schaper	None
Brent Zachow	None
Al Turner	Occidental Chemical Corp.
Holly Parkman	Orion Waste
Brenda Brown	Patterson-Brown & Associates
Kaden Jacobs	Peel PR
Erick Montgomery	Personal
Jason Goldberg	Personal Submission
Tom Werner	Pierwood Construction Co.
Lillian Huber	Pizza Guys
Ricky markwalter	Pools ,welding, and more..
Janet Bentley	Portable Services Inc
Jonathan Aceves	Presley Realty Inc.
Janie Terrell Peel	Prime Commercial Properties
Kim Hutto	Property owner on the river
J. Martin Ford	Pruett Ford and Associates, Inc.
Karen Burroughs	Qualified Plan Administrators Inc
Helen Caldwell	Queenborough National Bank & Trust
Ashby Bethune	Queensborough
William R Thompson	Queensborough National Bank
Adam Harris	Queensborough National Bank & Trust
richard peacock	queensborough national bank and trust
James Ray	Ray Family Dentistry
Robert willert	RBW Logisitics

Charles Anderson	RBW Logistics
renee lambert	rbw logistics
Kristofer Solomon	RBW Logistics
Shannon Hall	RBW Logistics
Aaron Ferguson	RBW Logistics
Willie Corthen	RBW Logistics
Tracee Abraham	RBW Logistics
Jennifer Bennett	RBW Logistics
Robyn Harvison	RBW Logistics
Walter Hutto	RBW Logistics
Ray Story	RBW Logistics
Dani McDermott	RBW Logistics
Libby Young	RBW Logistics Corp
Phyllis McKinney	RBW Logistics Corp.
James Newman	RCN
John Wilson	Retired
Joyce Jackson	Retired
Angie Carlton	Retired
Terry Chafin	Retired
Velma Eckhart	Retired
Ann Martin	Retired
Carolyn Loper	Retired
Dennis Bell	Retired
Charles Martin	Retired
Yaqi Gong	Retired
Andrew VonPlinsky	Retired
Anne Bell	Retired
Melinda Ball	River Ball's Residence River North Neighborhood
Dorota J Hanling	River island
Peter Johnston	River Island Homeowner
James K Smith	River patron
Raymond Picklesimer	River patron
Daniela Chancey	River patron
Mignon Phillips	River patron
Mary Willis	River patron
Dorothea Anderson	River patron
Robert Chaplin	Robert Chaplin
Rob Fulkerson	SA Recycling
Ginger Reeves	SA Recycling
Dale Adams	Sake2mee

Michael Duckworth	Security Federal Bank
John L Kennedy, III	Security Federal Bank
PHILIP WAHL	SECURITY FEDERAL BANK
Freda Baker	Security Federal Bank
Andrea Usry	Serotta Maddocks Evans CPA
Kat Johnson	Sheraton Augusta Hotel
Jeff Wilson	Sherman & Hemstreet
Joe Edge	Sherman & Hemstreet
Connie Wilson	Sherman and Hemstreet
Chris Farrow	Sherman and Hemstreet
Lindsay Jacobs	Showpony Promo
Jane Miller	Shrpeatd Community Blood Center
Ruthie McGhee	Sitec LLC
Ronald	Skenes
Christopher Hines	slippery slope stays
Russ Martin	Smartcare Medical Services, Inc.
Mark Long	Solvay Speciality Polymers
ALAIN DE GREEF	SOLVAY SPECIALTY POLYMERS
Adrian Tillman	Solvay Specialty Polymers
Jack Clausen	Southbound Smokehouse
Hunter Hensley	Southern State
Angela Swarts	Spherion Staffing Services
Walter Wilson	SRNS
Kevin Toole	SRP FCU
lawrence smith	standardaero
Takiyah A Douse	State Farm Insurance/Chris Douse Agency
Christopher Douse	State Farm Insurance/Chris Douse Agency
Jennifer Powell	Studio 3 Design Group
John Forde	SuperSavers and More
Ivan Hazlewood	Surplus Warehouse
Brian Rhodes	TaxSlayer
Tony Bernados, President	The Augusta Chronicle
Cindy Summer	The Hair Summery
Wil Kacos	The High Tide Company, Inc
Russell Wilder	Top Shelf Cigar, LLC
Wesley Kennedy	TranterGrey
Patrick Zoeckler	UNISYS
Grey Murray	United Brokerage Co
Daniel J Boudreaux	University Health Care
Jim Davis	University Health Care System

JOYCE LAUW	University hospital
Venetia Northrop	University Hospital
Mei Zheng	University Hospital Dept. of Pathology
James H Henderson-Coffey	US Navy Repair lock and Damn and keep the pool.
Keith carpenter	Va
Megan Waters	Villa Europa
Sylvie Leland	Villa Europa
Patricia Schaffer	Villa Europa Restaurant
Peggy Schaffer	Villa Inc. (Villa Europa Restaurant & Lounge)
Scott Poag	W&A Engineering
Rebecca Johnson	We live on the river
Hollis Bush	Webster University Fort Gordon Campus
Patsy Ann Garrett	Weichert Realtors, Pendarvis Company
Harold Wright	Wright one paint and body
Egan Kelly	Y
Rebecca Johnson	Yes
Dan Rickabaugh	ZEL Engineers
Jorge Jimenez	Zimmerman, Evans & Leopold, Inc.

Sincerely,

Susan E. Parr, IOM, GCCE
President/CEO



Exhibit A

May 26, 2017

Savannah District, U.S. Army Corps of Engineers
ATTN: Mr. Nathan Dayan (PD)
100 West Oglethorpe Avenue
Savannah, Georgia 31401-3640

RE: Comments on the Savannah Harbor Expansion Project (SHEP), Modification to Fish Passage Feature at the New Savannah Bluff Lock and Dam (NSBLD)

Dear Mr. Dayan:

The Augusta Metro Chamber of Commerce represents the interests of 1,200 businesses and organizations throughout the Central Savannah River Area (CSRA) and is very interested in the ongoing planning activity with regard to the New Savannah Bluff Lock and Dam by the United States Army Corps of Engineers. The NSBLD structure has become a part of the fabric of the Augusta/North Augusta Community over the past eighty-plus years. Alterations to, or replacement of the current structure could result in changes to the Savannah River which will have meaningful impacts on the greater community and our members for many, many years to come.

Thousands of jobs as well as millions of dollars and product depend on the level and use of water from the pool for process-water. Hundreds of millions of dollars in development have been created along the banks of the Savannah River because the pool of water created by the lock and dam creates the environment that makes them attractive and viable. This development includes hotels, conference and convention space, restaurants, a golf course, housing, museums and office space. Future plans include additional housing, retail, meeting space and professional space. The State of Georgia is building its Cyber Center on the banks of the river, North Augusta is developing a new baseball stadium directly next to the pool and conceptual plans to create an Augusta visitor destination center on the banks of the river are all developments currently underway.

For over 17 years, the Augusta Metro Chamber has been a leading voice in advocating for the rehabilitation of the NSBLD structure to ensure and safeguard our community's future dependency on the pool, especially as the structure has steadily deteriorated. As you are aware, the Water Resources Development Act of 2000 authorized the repair and conveyance of the NSBLD, and we remain committed in stating that this solution was viable and met the needs of our community. Had the project occurred as authorized, mitigation required by SHEP for the migration of endangered fish could have been accomplished with the construction of a Fish Passage/Bypass and without the need to legislatively fashion alternate projects as outlined in the Water Infrastructure Improvements for the Nation Act of 2016.

While we are encouraged that these project modifications legislate the security of the pool, it is still the opinion of the Augusta Metro Chamber that repair of the

lock and dam, and the construction of a fish bypass, is an optimal solution that meets our needs while reducing possible negative impacts on the community, and accomplishes the needs of the Savannah Harbor Expansion Project.

As stated, we are greatly encouraged that a project modification as outlined in WIIN 2016 requires the structure [to maintain the pool for navigation, water supply and recreational activities, as in existence on the date of enactment of this Act;] ((C) PROJECT MODIFICATIONS (1)(A)(i)). This is a significant legislative achievement for our community but we remain rightfully concerned that the projects as described in the law may not be able to achieve the desired result for both our community and SHEP and at the same time minimize the possible impacts of both not enough water or too much water. We understand final guidance is yet to be provided to the district on how it should proceed and how the feasibility of projects will be evaluated. Given the two project descriptions currently outlined in the law, the Augusta Metro Chamber of Commerce feels that one option offers more to our community than the other.

The Chamber believes that an option that provides for continued access from above the structure to the lower half of the Savannah River via an operational lock is preferable. We believe to permanently cut off the center of our region from the lower parts of the river and the Atlantic Ocean beyond is short-sighted. While there has not been significant usage of the existing lock in recent years that need could change in the future, and by permanently blocking the river entirely we may prevent a number of important and useful developments in the future. The existing lock's poor condition and lack of consistent operation has surely reduced demand in recent years; meanwhile our community is growing and we do not know what the future may hold. To forever seal Greater Augusta from the areas down river is not in our best interest.

The Chamber also believes that choosing an option that includes the lock has the further benefit of re-using the existing dam structure, which we view as preferable to constructing a new structure at a different location. The park at the existing lock and dam is popular with the public and a great asset to the county. We believe the value of this asset would be diminished should the dam structure move. In addition to the benefit to the park we feel that using the existing footprint for a new structure would reduce uncertainty and possible environmental impacts from construction at a new site.

For these multiple reasons, the Augusta Metro Chamber considers a project that repurposes the existing structure to include a lock more preferable over other project modifications described in WIIN 2016, if those options are the only ones currently under consideration. However, should further guidance allow for the full repair of the existing structure and construction of a bypass around the dam, we feel this option is best for the community.

The Augusta Metro Chamber of Commerce stands ready to continue to work in partnership with the USACoE to find the best way to move forward together. We believe that a solution that meets local needs as well as those of the Corps and that of the Savannah Harbor Expansion Project is an achievable goal that should be pursued.

Sincerely,



Susan E. Parr, GCCE, IOM
President/CEO

cc: Honorable Nathan Deal, Governor, State of Georgia
Honorable Johnny Isakson, United States Senate
Honorable David Perdue, United States Senate
Honorable Lindsey Graham, United States Senate
Honorable Tim Scott, United States Senate
Honorable Rick Allen, United States House of Representatives
Honorable Jody Hice, United States House of Representatives
Honorable Joe Wilson, United States House of Representatives
Honorable Jesse Stone, Georgia Senate
Honorable Harold Jones, Georgia Senate
Honorable Lee Anderson, Georgia Senate
Honorable Wayne Howard, Georgia House of Representatives
Honorable Gloria Frazier, Georgia House of Representatives
Honorable Sheila Nelson, Georgia House of Representative
Honorable Mark Newton, Georgia House of Representatives
Honorable Jodi Lott, Georgia House of Representatives
Honorable Barry Fleming, Georgia House of Representatives
Honorable Brian Prince, Georgia House of Representatives
Honorable Hardie Davis, Jr., Mayor, City of Augusta
Honorable Mary Davis, Commissioner, City of Augusta
Honorable Sammie Sias, Commissioner, City of Augusta
Honorable Ben Hasan, Commissioner, City of Augusta
Honorable Grady Smith, Commissioner, City of Augusta
Honorable Sean Frantom, Commissioner, City of Augusta
Honorable Dennis Williams, Commissioner, City of Augusta
Honorable Marion Williams, Commissioner, City of Augusta
Honorable Andrew Jefferson, Commissioner, City of Augusta
Honorable Wayne Guilfoyle, Commissioner, City of Augusta
Honorable Bill Fennoy, Commissioner, City of Augusta

Exhibit B

Misconceptions on Fish Passage Corrected

Posted on May 5, 2017 by US Army Corps of Engineers Savannah District

MISCONCEPTION: Funding to rehabilitate the NSBL&D was included in the budget for the Savannah Harbor Expansion Project (SHEP).

RESPONSE: Incorrect. No funds from SHEP were authorized for rehabilitation of the lock and dam. A small amount of SHEP funding was budgeted to modify two gates of the NSBL&D so that the original fish passage design would function properly – but that is all. The NSBL&D is presently in poor shape and would remain so. Rehabilitation of the structure would cost approximately \$30 million and Congress has not provided such funds for 25 years. Since the NSBL&D is in [caretaker status](#), there is very little chance funds would be appropriated to repair the structure. Like all other federal projects, it must compete for limited funding with projects across the nation, many of which produce more benefits to the nation and receive a higher funding priority. The large costs for repair make the NSBL&D a poor investment from the national perspective. Furthermore, the original fish passage depended on a fully functional NSBL&D in order to work as designed. Yet, the lock and dam are in such disrepair that our engineers say its collapse is inevitable. This is why the WIIN Act legislation is good news for the Cities of Augusta and North Augusta: it solves the problem of pending failure of the lock and dam and provides federal protection for the pool.

Exhibit C

Comparing the two Fish Passage alternatives

Posted on [March 18, 2019](#) by [US Army Corps of Engineers Savannah District](#)

Since we announced the recommended plan of Alternative 2-6d that would replace the New Savannah Bluff Lock and Dam with a fixed weir, many in the Augusta area have expressed interest in a different alternative, namely Alternative 1-1.

The Alt 1-1 design retains part of the current lock and dam with the fish passage moved partially out of the channel and onto the Georgia side of the river. We have received a number of inquiries on the cost of Alt 1-1, specifically compared to the recommended plan Alt 2-6d.

In order to provide more clarity to the public about the differences in cost, we requested a certified cost from our center of expertise and initiated consultation with NOAA Fisheries for Alt 1-1.

The feedback we received from the certified cost estimate confirmed Alt 1-1 costs more to operate and maintain than Alt 2-6d and, upon consultation with NOAA Fisheries the design is less likely to successfully pass fish.

The draft cost estimates for Alt 1-1 is more than twice the amount when compared with the recommended plan (Alt 2-6d) as shown in the below table below.

	Fed Share	Non Fed Share	Total
Alt 1-1: Repair the lock wall and construct a Georgia-side Fish Passage			
Investment	\$ 48,151,500	\$ 28,497,000	\$ 76,649,000
Major Rehab		\$ 93,711,000	\$ 93,711,000
O&M	\$ 13,307,000	\$ 196,652,000	\$ 209,959,000
Total	\$ 61,458,500	\$ 318,860,500	\$ 380,319,000
Alt 2-6d: Fixed crest weir with a flood plain bench			
Investment	\$ 48,151,500	\$ 43,997,500	\$ 92,149,000
O&M	\$ 13,307,000		\$ 13,307,000
Total	\$ 61,458,500	\$ 43,997,500	\$ 105,456,000

In accordance with our engineer regulations, the estimate is provided as a project first cost; that is, the full amount over time if one were to pay for everything up front in the current fiscal year.

The construction, real estate and major rehabilitation are shown in the dollar amounts expected if the entire option were paid for all at once in cash today. The operation and

maintenance equate to the value of the effort in today's dollar value if this project is completed over the next 100 years with an estimated wage growth, using the government labor estimate.

It helps to understand that the construction cost for the entire Savannah Harbor Expansion Project is shared with Georgia as the non-federal sponsor: 75 percent federal, 25 percent non-federal.

Based on the WIIN Act changes for the lock and dam, the federal cost share of the SHEP Fish Passage feature is limited to 75 percent of the original SHEP Fish Passage authorized in 2014, which is currently estimated at \$62,673,000.

Alt 1-1 was not selected as the federal plan. Therefore, any possibility to implement Alt 1-1 would require the non-federal sponsors, Georgia Ports Authority (GPA) and Georgia Department of Transportation (GDOT), to request a Locally Preferred Plan (LPP).

Under the cost-sharing requirements for a LPP, the non-federal sponsor is required to pay the difference in cost between the federal plan and the LPP alternative if the LPP is more costly than the federal plan.

Also, the locally preferred plan's ability to adequately pass endangered fish must be similar to the ability of the federal plan. Therefore, NOAA Fisheries consultation needs to provide assurance of equal benefits.

To date, our discussions with NOAA Fisheries indicate that the fish passing efficacy of Alt 1-1 is expected to be less than the ability of the 2-6d design. For this reason, we eliminated Alt 1-1 from further consideration.

The simulation exercise and the public comments are adding to our knowledge on the project as we continue to move forward with the mandate to begin construction by January 2021.

We are open to conversations with our non-federal sponsors and our water policy experts on other alternatives that would provide water surface elevations similar to Alt 1-1, but that include a full-river fish passage and weir.

Any alternative will require dedicated, cooperative and timely engagement with our non-federal sponsors to address all cost and real estate issues, which may occur with alternatives other than Alt 2-6d.

We remain committed to meeting the schedule as outlined in the NOAA-issued Biological Opinion, which requires start of construction by January 2021.

~ Russell Wicke, Corporate Communications Office

J. Noel Schweers III

619 Bourne Place
Augusta, GA 30904

April 16, 2019

VIA Email: CESAS-PD@usace.army.mil
Savannah District, US Army Corps of Engineers
Planning Division
5625 Anderson Highway
Hartwell, Georgia 30643-5259

ATTN: Ms. Julie Morgan (PM-P)

Re: Comments on the proposed Fish Passage (the “Fish Bypass”) and other issues related to the New Savannah Bluff Lock and Dam (“NSBLD”) in connection with the Savannah Harbor Expansion Project (“SHEP”)

Dear Ms. Morgan:

I write to raise some serious concerns regarding the SHEP mitigation by means of the addition of the Fish Passage at the NSBLD. While I recognize it is difficult to balance the many competing factors involved in a project of this size, the Corps and the Georgia Ports Authority have clearly placed the anticipated benefits of SHEP ahead of the current known interests of the residents of Augusta, North Augusta and Aiken County.

It is my understanding that there are many individuals and groups submitting comments on this subject, and I do not want to submit comments that are duplicative. Therefore, I will keep my comments brief and limit them to important legal considerations. Below are my comments.

1. The various in-river weirs (including Alternative 2-6d) are not authorized under Federal law. The authority for the proposed weir and its various iterations (the “Weir Proposal”) is the Amendment to the WIIN Act of 2016, sponsored by the two current Georgia Senators (the “Perdue-Isakson Amendment”). As has been repeatedly raised by interested parties, the Corps’ interpretation of the Perdue-Isakson Amendment ignores its plain language. By the continued pursuit of the Weir Proposal, the Corps is subjecting itself and the US taxpayers to the significant costs and delay likely associated with litigation. The two most glaring departures from the law are:
 - a. The announced intention of the Corps to reduce the level of the Augusta pool below the level on the date of enactment, despite the plain language in Perdue-Isakson

Amendment, is reckless. The Corps has previously stated that the language regarding the water level merely requires a water level with the same functionality. However, if functionality were the test, then the Corps could have stated such when it drafted the amendment.

- b. Of the two options provided in the Perdue-Isakson Amendment, only Option 1, which calls for the modification of the NSBLD structure, allows for the expenditure of funds to address concerns about the short-nosed sturgeon and the Atlantic sturgeon (collectively, the “Sturgeon”). This Option contains the directive that modifications to the structure must be such that the Sturgeon can to swim over the structure. By contrast, Option 2, which would include a weir, does not allow the Sturgeon to be considered. When viewed in this light, the extensive funds required to allow the Sturgeon to pass, is not permitted. The fact the Corps has conditioned the approval of SHEP upon the required construction of the NOAA recommended Fish Passage is irrelevant. The Perdue-Isakson Amendment would control over any administrative mitigation requirement imposed by the Corps. This is especially true here, where the Amendment was adopted subsequent to NOAA’s recommended mitigation, and legally presumed made with knowledge of this requirement.
2. The Savannah River to Augusta is navigable at law. It has also been determined to be navigable under the applicable Corps’ regulations. (See generally, 33 CFR 329.2, et. seq.) In fact, Augusta was founded where it is because it is located at the northern most limit of the River’s navigability. The placement of a weir and removal of the current lock structure would destroy the River’s navigability.

All traffic has ceased at the NSBLD because the Corps has failed to keep the Lock in working order. The Corps apparently believes that it can blocked all traffic for many years, and then points to the lack of use as a justification for permanently removing the Lock from service. Further, the Corps has adopted a narrow view of what qualifies as traffic for purposes of authorized purpose of the NSBLD. While barge traffic has greatly decreased in recent decades, this is not the only relevant commercial traffic.

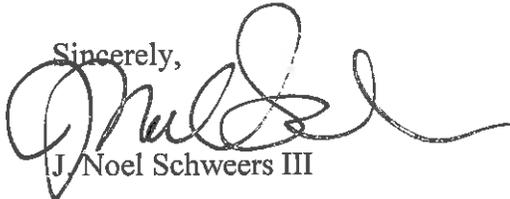
The ability to travel from Augusta to the ocean is a benefit to Augusta’s tourism industry. Unfortunately, the extent of this benefit cannot be determined because the Corps has prevented traffic through the Lock.

It is well-settled law that navigability is a question for a Federal Court to determine. When a navigable river is navigable at law, only Congress can declare it unnavigable. By advancing the Weir Proposal, the Corps ignores the law. This current position is also inconsistent with the position taken by the Corps in similar situations, such as the impact of river obstructions in the recent dispute involving the Trinity River in Dallas, Texas.

Also, in evaluating the options described at Section 1b above, please keep in mind that, if Option 1 is selected, the Lock must be returned to service. This option requires the Lock

wall to be repaired and that the structure continue to allow for navigation. Reportedly, the repair of the Lock wall is necessary before the Lock can be returned to service. If the Lock were not to be returned to service, then Congress would not have included the obligation to repair of the Lock wall.

Thank you for considering these comments as you develop a plan for the NSBLD.

Sincerely,

J. Noel Schweers III



Augusta, Georgia
Mayor's Office
535 Telfair Street, Suite 200
Augusta, Georgia 30901



North Augusta, South Carolina
Mayor's Office
100 Georgia Avenue
North Augusta, South Carolina 29841

April 16, 2019

Savannah District
U.S. Army Corps of Engineers
Planning Division
ATTN: Ms. Robin Armetta (PM-P)
100 West Oglethorpe Avenue,
Savannah, Georgia 31401-3640

Via Hand Delivery and electronic
mail to [CESAS- PD@usace.army.mil](mailto:CESAS-PD@usace.army.mil)

Re: *New Savannah Bluff Lock & Dam Comment on Savannah Harbor Expansion Project, Georgia and South Carolina: Fish Passage at New Savannah Bluff Lock and Dam Integrated Post Authorization Analysis Report and Supplemental Environmental Assessment*

Dear Ladies and Gentlemen:

The Cities of Augusta, Georgia and North Augusta, South Carolina ("Cities") file these Technical Comments and Legal Comments regarding the Draft Integrated Post Authorization Analysis Report ("PAAR") and Supplemental Environmental Assessment ("SEA"), Fish Passage at New Savannah Bluff Lock and Dam ("NSBLD") and Draft Finding of No Significant Impact ("FONSI") to evaluate proposed changes to the Fish Passage feature of the Savannah Harbor Expansion Project ("SHEP")(hereinafter, collectively, "Draft Report").ⁱ These comments are submitted in accordance with the National Environmental Policy Act, 42 U.S.C. § 4321 et seq. ("NEPA") and applicable Federal laws, regulations and policy including United States Army Corps of Engineers - Procedures for Implementing the National Environmental Policy Act (ER 200-2-2). US Army Corps of Engineers. Engineer Regulation 200-2-2, 33 C.F.R. Part 230.

Savannah District
U.S. Army Corps of Engineers
Planning Division
April 16, 2019
Page 2

Please accept and include these comments in the administrative record for the proceeding and processing in accordance with applicable requirements.

AUGUSTA, GEORGIA



Hardie Davis, Jr.
Mayor

NORTH AUGUSTA, SOUTH CAROLINA



Robert Pettit
Mayor



Sean Frantom
Mayor, Pro-tem

i The public comment period for the SHEP PAAR/SEA/FONSI was extended to April 16, 2019 via U.S. Army Corps News Release No. 19-10 (Feb. 26, 2019). As discussed in detail below, given the extensive nature of the Federal Action and its significant effect on the quality of the human environment, the public notice period is exceedingly short and inadequate, particularly where the Corps is combining the PAAR/SEA/FONSI and legal requirements of the National Environmental Policy Act, 42 U.S.C. 4331 et seq., WIIN Act.

**Legal Comments of the Cities of
Augusta, Georgia and North Augusta, South Carolina
on**

*U.S. Army Corps of Engineers Report:
“Savannah Harbor Expansion Project,
Georgia and South Carolina: Fish Passage at New Savannah Bluff
Lock and Dam
Integrated Post Authorization Analysis Report and
Supplemental Environmental Assessment”
and Related Documents*

Submitted by



Augusta, Georgia

and

North Augusta, South Carolina



April 15, 2019

Contents

Summary1

I. The Proposed Action Violates Congress’ Explicit Mandate in the WIIN2016 Act.....4

A. WIIN 2016 requires the Corps to repair the Lock Wall and Modify the NSBLD, Not Remove it, if the Secretary determines that Fish Passage is Necessary.....8

 i. The Corps Preferred Alternative, Proposal 2-6D to Remove the NSBLD Falls Under Option 2 Section 1319 (c)(1)(A)(ii) which Explicitly Omits Fish Passage8

 ii. If the Secretary determines Fish Passage is Necessary, then it is Required to Repair the Lock and Modify the NSBLD, not Remove the NSBLD8

B. The Proposal and Alternatives Fail to Meet the Requirement of both OPTION 1 and OPTION 2 in Section 1319 (c)(1)(A) to Maintain the Pool9

 i. The Proposal and Alternatives Fail to Maintain the Pool and Reduce Surface Elevation from Existing Conditions13

 ii. PAAR documents apply incorrect criteria for Impacts in Violation of WIIN 201613

 iii. The Corps is Prohibited by the WIIN 2016 Act from expending funds except in accordance with the Specific Authorization, Including Maintaining the Pool13

II. Deauthorization of NSBLD is a Separate Federal Actions for the Purpose of NEPA Analysis13

III. The Corps Failed to Develop an Appropriate No Action Alternative and Baseline15

IV. The Corps failed to Consider a Reasonable Range of Alternatives16

V. Alternative Evaluation Criteria Fail to Adequately Compare Impacts19

VI. The Corps Improperly Eliminated Alternatives Prior to the Close of the Comment Period and Prior to Receiving Comment.....21

VII. The Corps Predetermined the Action Prior to Public Comment in Violation of NEPA22

A. Because the Corps did not Assess Habitat Alternatives to the Purpose of SHEP Mitigation, the Corps Improperly Predetermined it Would Implement Fish Passage at the NSBLD22

B. The Corps Applied for a Revision to the Endangered Species Act Biological Opinion Illegally Pre-Disposing has Already Determined it Will Implement Fish Passage in Violation of the WIIN 2016 Act22

C. NOAA-NMFS States that the Decision to Remove the NSBLD Has been Made23

D. Issuing the Draft FONSI before Receiving Comments on the Proposal Violates NEPA and Due Process23

	E. By Committing Irreversible and Irretrievable Resources, the Corps has Impermissibly Predetermined the Outcome in Violation of NEPA	23
VIII.	401 Certifications and Coastal Zone Consistency	23
IX.	The Corps Proposal and Analysis is Arbitrary, Capricious, and an Abuse of Discretion	23
X.	The Corps Failed to Fully Assess All Direct, Indirect and Cumulative Effects, and Impermissibly Limited Geographic Scope of Analysis	25
	A. Wetland, Fringe Wetland, and Sensitive Riparian Areas	25
	B. Historic Resources	25
	C. Environmental Impacts	27
	D. Aquatic Habitat Impacts	28
	E. Endangered and Protected Species	29
	F. Sediments	30
	G. Socioeconomic Impacts on the Augusta Region	30
	H. Recreation Effects	27
XI.	Coordination and Assessment of Impacts on Federal Power Act, 16 U.S.C. §§ 791 et seq., is Required	31
XII.	Despite Significant Impacts, the Corps Has Failed to Propose Mitigation	31

These comments address legal issues regarding the February 14, 2019 Draft Integrated Post Authorization Analysis Report (PAAR) and Supplemental Environmental Assessment (SEA), Fish Passage at New Savannah Bluff Lock and Dam (NSBLD) and Draft Finding of no Significant Impact (FONSI) to evaluate proposed changes to the Fish Passage feature of the Savannah Harbor Expansion Project (SHEP)(hereinafter “SHEP PAAR/SEA/FONSI” or “Draft Report”). These comments are submitted in accordance with the National Environmental Policy Act, 42 U.S.C. § 4321 et seq. (“NEPA”) and applicable Federal laws, regulations and policy including United States Army Corps of Engineers - Procedures for Implementing the National Environmental Policy Act (ER 200-2-2), US Army Corps of Engineers. Engineer Regulation 200-2-2, 33 C.F.R. Part 230. Please accept these comments include these comments in the administrative record for the proceeding and processing in accordance with applicable requirements.

Summary

The SHEP PAAR/SEA/FONSI constitutes a new, separate action significantly affecting the environment. Accordingly, the Corps is required to follow NEPA procedures including developing a reasonable range of alternatives with public input regarding issues and effects. Here, the Corps has impermissibly combined two federal actions: the Savannah Harbor Expansion Project (“SHEP”) which is underway, commencing in 2012 and located 180 miles away, and the deauthorization of the New Savannah Bluff Lock and Dam (“NSBLD”) as authorized by the Water Infrastructure Improvements for the Nation Act, 114 P.L. , 130 Stat. 1703 (Dec. 16, 2016), § 1319 (“WIIN 2016”).

The two projects have completely separate NEPA purpose and need. By combining the two separate federal actions, the Corps has failed to follow NEPA procedures, deprived the public of due process and processes afforded by the National Environmental Policy Act, 42 U.S.C §§ 4321 *et seq.*, and Corps regulations and policies. Where the SHEP purpose was to address inefficiencies in the marine transportation of goods through Savannah Harbor by deepening the Savannah Harbor for international commerce and economics, WIIN 2016 is explicitly for the purpose of deauthorization of the NSBLD specifically and explicitly maintaining existing pool surface water elevations. As none of the Corps’ alternatives maintains existing surface water pool elevations – dropping the pool by as much as 6 feet depending upon the alternative and location – no alternative proposed by the Corps satisfies the requirements of WIIN 2016.

The Corps’ proposal will result in severe damage to the Augusta Region’s economic future, impacts to millions in government investment, its water supply, its water-dependent quality of life, lifestyle and character, to mitigate for a single effect – fishery impact – from a \$ 706 million Corps deepening project is unconscionable. The impacts are along seventeen miles of the Savannah River, and will range in reduction from economic damage to serious quality of life damage to a water dependent City and Region which has been built around the current pool in place for nearly a century, since 1937.

The entire basis for fish passage at the NSBLD is for mitigation for impacts from the Savannah Harbor Expansion. Passage of sturgeon is experimental, at best, with very, very few instances of measurable success making the Corps proposal certain to harm Augusta but uncertain in terms of providing any meaningful environmental benefit. When it was determined in 2012 that passage around the

NSBLD for sturgeon¹ would mitigate for environmental adverse impacts from Savannah Harbor deepening, the Corps and its sister Federal Agency the National Marine Fisheries Service (“NOAA-NMFS” or “NOAA-Fisheries”) concluded that **only four** sturgeon would be potentially taken (killed) by the SHEP work, and twenty ‘takes’ due to trawling and relocation (which releases the individuals alive). NOAA-NMFS, Biological Opinion, Deepening of the Savannah Harbor Federal Navigational Channel in association with the Savannah Harbor Expansion Project (NMFS Consultation No. F/SERJ2010105579) (Nov. 4, 2011). Nationally, fish passage for sturgeon has been ineffective. The NSBLD passage is being designed after the Cape Fear fish passage and is being studied by NOAA-NMFS “to apply these lessons learned to the Savannah River where a rock-arch ramp fishway will be constructed at New Savannah Bluff Lock and Dam. That project is being constructed to mitigate impacts to shortnose sturgeon from the Savannah Harbor Expansion Project.” Notably, we are unable to find any record of a single sturgeon passing the Cape Fear fish passage project which was also designed to pass Atlantic sturgeon and shortnose sturgeon. https://sero.nmfs.noaa.gov/habitat_conservation/hcd_headlines/cape_fear_ld1_fishway.html. The Cape Fear lock and dam was removed and replaced with a rock ramp fishway designed consistent with Corps Alternatives 2-1 through 2-9. Thus, the benefits of NSBLD removal and modification are overstated and not justified scientifically. Further, the Cape Fear passage is also reportedly less successful than the lock and dam for striped bass migration and potadromy.² The Corps has done no assessment of this data and information.

Therefore, the drastic impacts to the environment and economic vitality of the Augusta Region is sacrificed for an uncertain benefit to mitigation for impacts 180 miles away on very few sturgeon. Augusta supports ecosystem and species protection. It is unlawful, as set forth below, to place disproportionate impact to the Augusta area to achieve scientifically questionable and arguably experimental ecosystem and species benefits as mitigation for impacts from a separate harbor deepening project 180 miles away, and improper to do so prior to assessing alternatives more beneficial to the sturgeon and less impactful to the region and the ecosystem and resources in the Augusta and North Augusta region.

Given that the purpose of the Corps proposal is mitigation for four sturgeon would be potentially taken (killed) by the SHEP work, and twenty ‘takes’ due to trawling and relocation,³ the Corps has violated NEPA by failing to consider a reasonable range of alternatives which would satisfy mitigation for the anticipated level of take by the Savannah Harbor deepening. If the Corps has determined that it is unable to satisfy the original mitigation it identified, issued for public notice, and selected in a Record of Decision (“ROD”), it is required under NEPA and federal statutes including the Endangered Species Act, 16 U.S.C. §§ 1531 et seq. to develop and assess a reasonable range of alternatives to

¹ Although other species are expected to use passage, and would also use functional locks at the NSBLD, the Atlantic Sturgeon (*Acipenser oxyrinchus oxyrinchus*) and Shortnose Sturgeon (*Acipenser brevirostrum*) drive the fish passage design and mitigation purpose.

² Raabe, J., "Evaluation of Fish Passage Following Installation of a Rock Arch Rapids at Lock and Dam #1, Cape Fear River, North Carolina" (2014). International Conference on Engineering and Ecohydrology for Fish Passage. 69. https://scholarworks.umass.edu/fishpassage_conference/2014/June9/69

³ We recognize that in subsequent consultations the Corps has increased its incidental take request to 10 sturgeon. NOAA-NMFS. NOAA-NMFS, 2017 Biological Opinion Supplement Biological Opinion, Deepening of the Savannah Harbor Federal Navigational Channel in association with the Savannah Harbor Expansion Project (NMFS Consultation No. F/SERJ2010105579)(Oct. 13, 2017)("2017 BiOp Supplement")

effectuate the mitigation. Here, the Corps has only assessed fish passage at the NSBLD as its only alternative to the impacts to very few sturgeon 180 miles away. NEPA requires a reasonable range of alternatives, which here would include any number of habitat enhancements, conservation measures, alternative passage methods which would not drastically affect the Augusta Region, and may not affect it at all, but satisfy ESA Section 7 consultation requirements and provide for protection of a species impact by harbor deepening. By failing to consider a reasonable range of alternatives, the Corps has failed to comply with NEPA to assess a reasonable range of alternatives to achieve the sturgeon mitigation required under the 2012 SHEP EIS and ROD.

It is inappropriate, illegal and patently unfair to place such a significant impact on the Augusta region simply to permit benefits to another region. At the time the SHEP was approved, the position of the Corps and all parties was clear: removal of the New Savannah Bluff Lock and Dam was infeasible. 2012 SHEP EIS, App. C Mitigation, at 65. Nothing has changed since that 2012 Corps pronouncement respecting feasibility. When the Corps suggested fish passage at the NSBLD as a mitigation feature for SHEP impacts to sturgeon, here was no discussion of removing the NSBLD; there was no consideration of reduction of water levels along a seventeen mile segment. 2012 SHEP EIS generally; 2012 SHEP EIS, App. C Mitigation. Based upon the assertions that removal of the NSBLD is infeasible, and would not occur, governments and the public did not comment adversely or otherwise exercise rights of appeal, challenge or review of the 2012 SHEP EIS and related determinations. The 2019 PAAR by proposing drastic changes from the 2012 SHEP EIS forever altering the Augusta Region impermissibly changes the purpose, need, and scope of the 2012 SHEP EIS, lacking logical outgrowth from the original action and arbitrarily reversing numerous key scientific, technical, and other determinations.

The only change since the 2012 SHEP EIS identified by the Corps is WIIN 2016. As explained below and made clear in Corps guidance and memoranda, WIIN 2016 requires that the NSBLD be kept in place with the lock repaired and other necessary modifications including capability of passing fish over the structure, or alternatively removal of the NSBLD without a requirement to pass fish. Under any and all options, the pool surface water level is required to be maintained under WIIN 2016 specifically such that the Augusta Region would not be affected. As discussed below, if the Corps decides to remove the NSBLD, WIIN 2016 is clear that Congress did not intend that fish be passed. Accordingly, if the Corps still wishes to implement fish passage as mitigation for its other project, the Savannah Harbor Expansion, then it must keep the NSBLD in place, repair it, and construct a fish passage over it.

The Corps has proceeded with the NSBLD deauthorization to remove the NSBLD without following complete NEPA procedures discussed in detail below. Among the issues with the NEPA process are the Corps utilized an improper baseline for analysis by using a 2012 SHEP EIS mitigation plan for passage around the NSBLD, a project it now says it will never complete. Baseline is existing conditions under NEPA. The Corps also impermissibly predisposed its decision – over a year ago on January 14, 2017 it announced its decision to cast aside the 2012 SHEP EIS through consultation with NOAA-NMFS and instead removal the NSBLD. The Corps also recently ‘eliminated’ Alternative 1-1 through a blog post, impermissibly, before close of the comment period. The Corps issued the PAAR/SEA/FONSI before data from its February 8 through 15 drawdown could be used to calibrate modeling and consider true effects of its proposal and alternatives. The modeling is shown in our Technical Comments to be in error and understate water elevation drops. See Section V.A.

The Corps has illegally proposed and issued a draft Finding of No Significant Impact (“FONSI”) at the same time as its public notice of the proposal and before completion of the comment period. In essence the Corps is saying there is no significant impact from the action proposed in the 2019 PAAR/SEA/FONSI before even asking for public comment on impacts. The alternatives considered also fail to comply with federal law, specifically the WIIN 2016 Act, which requires that the pool surface water elevation upstream of the NSBLD be maintained. No alternatives assessed by the Corps maintains the pool which has been in existence since 1937, significantly affecting hundreds of thousands in the Augusta Region, millions in local and state investment, parks, recreation, municipal water supply, property values and environmental and aquatic resources.

As set forth below and in Technical Comments, the Corps erred in its NEPA analysis failing to take a hard look at direct, indirect and cumulative effects; applied an incorrect NEPA baseline for alternative analysis; narrowed the range of alternatives and omitted consideration of reasonable and feasible alternatives; failed to comply with the National Historic Protection Act, 54 U.S.C. §§ 300101 et seq. and other Historic Resource Laws by failing to conduct historic and cultural resource surveys in an appropriate area of direct effect. The Technical Comments identify significant underestimate of effects including pool surface water elevations and scope of effects rendering the NEPA analysis insufficient as a matter of law. Due to significant impacts of the proposal, and consistent with other dam removal and construction and modification projects of this magnitude, the Corps is required to complete an Environmental Impact Statement with full public participation; full public notice in the Federal Register following an adequate draft environmental document; incorporation of all data and completion of NEPA studies. The Corps has impermissibly cut short the NEPA and Corps processes, for example issuing the Draft Reports before information from the February 8 to February 15 drawdown field verification information could be processed and effects determined. For these reasons and issues detailed below, the Corps must revise its analysis, assess alternatives as discussed below, conduct necessary consultation and studies and reissue a draft document in Environmental Impact Statement form prior to taking federal action. NOAA-NMFS has stated in consultation documents that for bids for any work relating to the Corps proposal would not be awarded until January 2021 and that fish passage would be completed in October 2022, eight months after completion of the inner harbor dredging. NOAA-NMFS, 2017 Biological Opinion Supplement Biological Opinion, Deepening of the Savannah Harbor Federal Navigational Channel in association with the Savannah Harbor Expansion Project (NMFS Consultation No. F/SERJ2010105579)(Oct. 13, 2017)("2017 BiOp Supplement"), at 9. NEPA and Due Process may not be evaded by deadlines, but here the artificially short public participation is avoidable and inappropriate in light of the significant nature of the impacts.

I. The Proposed Action Violates Congress’ Explicit Mandate in the WIIN2016 Act

Under WIIN 2016, the Secretary is authorized to take one of two Options respecting the NSBLD as necessary: repair and modify the NSBLD and allow fish passage, or remove the NSBLD and construct a new structure.

(c) PROJECT MODIFICATIONS.—

(1) IN GENERAL.—Notwithstanding any other provision of law, the Project is modified to include, as the Secretary determines to be necessary—

(A)(i) repair of the lock wall of the New Savannah Bluff Lock and Dam and modification of the structure such that the structure is able—

(I) to maintain the pool for navigation, water supply, and recreational activities, as in existence on the date of enactment of this Act; and

(II) to allow safe passage over the structure to historic spawning grounds of shortnose sturgeon, Atlantic sturgeon, and other migratory fish; or

(ii)(I) construction at an appropriate location across the Savannah River of a structure that is able to maintain the pool for water supply and recreational activities, as in existence on the date of enactment of this Act; and

(II) removal of the New Savannah Bluff Lock and Dam on completion of construction of the structure; and

(B) conveyance by the Secretary to Augusta-Richmond County, Georgia, of the park and recreation area adjacent to the New Savannah Bluff Lock and Dam, without consideration.

WIIN2016 Act, 14 P.L. 322, 130 Stat. 1703 (Dec. 16, 2016), § 1319(C). WIIN 2016 was enacted December 16, 2016.

WIIN 2016 deauthorizes the NSBLD. WIIN 2016 does not require the Secretary to take any action, but if the Secretary determines action is necessary Congress has specifically prescribed the Secretary's actions as one of two options:

OPTION 1 Section 1319 (c)(1)(A)(i): repair of the lock wall of the NSBLD such that it would 'maintain the pool for navigation, water supply, and recreational activities, as in existence on the date of enactment of this Act,' and 'allow safe passage over the [NSBLD]' or shortnose sturgeon, Atlantic sturgeon and other migratory fish, OR

OPTION 2 Section 1319 (c)(1)(A)(ii): construction of a structure 'able to maintain the pool for water supply and recreational activities,' and removal of the NSBLD on completion of this construction. As a third alternative, the Secretary may take 'no action' and decide neither option is necessary.

Because Congress did not mandate the Secretary implement either OPTION 1 Section 1319 (c)(1)(A)(i) or OPTION 2 Section 1319 (c)(1)(A)(ii), the Secretary has a third option: take no action. The NSBLD would remain in place, unchanged. 1319 (c)(1)(A)(i) will be referred to as Option 1: NSBLD Lock Repair and Modification with Fish Passage and 1319 (c)(1)(A)(ii) will be referred to as Option 2: NSBLD Removal without Fish Passage. The No Action alternative will be referred to as Option 3: No Action.

Regardless of option selected, the Secretary is required to maintain the NSBLD pool surface water elevation albeit for slightly different purposes. Navigational purposes are included in Option 1, but not Option 2. Notably, Option 3: No Action would also maintain pool surface water elevation.

There is no legal disagreement between the Corps and Augusta regarding the Secretary's options under WIIN 2016 and limitation to the two Options under WIIN 2016. The Corps has, however, failed

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to apply the clear language requiring pool surface water elevations be maintained, and the Corps has proposed alternatives not authorized by WIIN 2016 and exceeding its scope. The Department of Army, U.S. Army Corps of Engineers (“Corps”) issued a legal interpretation on May 25, 2017 stating that the Corps could implement “either of the following alternatives” reciting Option 1: NSBLD Lock Repair and Modification Option 1 and Option 2: NSBLD Removal without Fish Passage. U.S. Army Corps of Engineers, Memorandum for Commander South Atlantic Division, “Implementation Guidance for Section 1319 of the Water Resources Development Act of 2016 (WRDA 2016), New Savannah Bluff Lock and Dam, Georgia.” The Corps’ PAAR/SEA/FONSI public notice and PAAR/SEA/FONSI documents concur and recite these two options and so there is no legal disagreement as to applicability of the language. See PAAR/SEA/FONSI, Executive Summary, at i.

Augusta Utilities and North Augusta comment that despite the clear language of WIIN 2016, the Corps PAAR/SEA/FONSI proposed action, and alternatives violate the language of WIIN2016 in two major ways:

WIIN 2016 requires the Corps to repair the Lock Wall and Modify the NSBLD, not remove it, if the Secretary determines that Fish Passage is Necessary.

If the Secretary determines fish passage is necessary, WIIN 2016 requires the Corps to leave the NSBLD in place, repair the lock wall, and modify the NSBLD. OPTION 1 Section 1319 (c)(1)(A)(i). Congress explicitly **omitted fish** passage from Option 2 Section 1319 (c)(1)(A)(ii). Congress made clear that it intended that the NSBLD remain in place with repair and modification if fish passage was necessary. Thus, Alternatives 2-3 and 2-6 (including sub-alternatives) are not authorized under WIIN 2016 and are in fact contrary to WIIN 2016. The Secretary is not authorized to remove the NSBLD such that it would ‘maintain the pool for navigation, water supply, and recreational activities, as in existence on the date of enactment of this Act,’ and ‘allow safe passage over the [NSBLD].’

The Proposal and Alternatives Fail to Meet the Requirement of both OPTION 1 and OPTION 2 in Section 1319 (c)(1)(A) to Maintain the Pool.

The Corps’ proposed alternative 2-6D lowers pool elevation failing to meet the requirements of WIIN 2016. Corps HECRAS modeling shows each alternative lowers pools surface elevation and therefore no proposed alternative meets the requirements of WIIN 2016 to maintain pool surface elevations as in existence on the date of enactment. Augusta Utilities experts have shown that the Corps analysis actually understates the level of lowering of the pool surface water elevation, and is confirmed by field data from the February 8 through February 15 Corps drawdown of the pool behind the NSBLD done to demonstrate post-project conditions. Thus, no alternative proposed by the Corps meets the Congressional mandate that the Corps maintain the pool that existed on the date of enactment.

Congressmen Joe Wilson and Rick Allen testified at a March 31, 2019 Hearing regarding the Corps proposal and the WIIN 2016 Act, explaining the congressional intent was to maintain the pool upstream of the NSBLD and expressing concern that the Corps had misinterpreted the statute. Technical Comments, Appendix I, Transcript of City of Augusta Public Meeting, Lock and Dam Meeting, March 31, 2019. Congressman Wilson stated he was disappointed that the misinterpreted the intent of the WIIN Act and confirmed that the physical level of the pool at the time of WIIN 2016 enactment was clearly the required surface elevation criteria. Congressman Allen agreed and stated he was assured by the Corps that the pool level would be maintained. Congressman Allen and Wilson were joined in April 9, 2019 Letter by Senators Lindsey Graham, Johnny Isakson, Tim Scott, and David Perdue expressing concern at the Corps’ interpretation of the WIIN 2016 Act and reiterating the intent to maintain pool surface water elevation. Technical Comments, Appendix B, Letter from Senators and Congressmen to Department of the Army, Corps of Engineers, April 9, 2019. That letter also expresses concern that the February 8 through 15 drawdown proved that the Corps’ proposal ‘does not appear to meet the requirements of the plain text of the legislation or the intent of Congress when it passed the WIIN Act.’

A. WIIN 2016 requires the Corps to repair the Lock Wall and Modify the NSBLD, Not Remove it, if the Secretary determines that Fish Passage is Necessary.

Where Congress includes particular language in one section of a statute but omits it in another section of the same Act, the Supreme Court has repeatedly interpreted the omission as clear Congressional intent that Congress intentionally and purposely omitted the provision or requirement. *Nat'l Ass's of Mfrs v. Department of Defense*, 138 S. Ct. 617, 625 (2018); *INS v. Cardoza-Fonseca*, 480 U.S. 421, 432 (1987); *Russello v. United States*, 464 U.S. 16 (1983).

i. The Corps Preferred Alternative, Proposal 2-6D to Remove the NSBLD Falls Under Option 2 Section 1319 (c)(1)(A)(ii) which Explicitly Omits Fish Passage

Congress was clear: if the Secretary determined Option 2 Section 1319 (c)(1)(A)(ii) was necessary, Congress did not authorize fish passage be implemented at NSBLD. By omitting fish passage, Congress clearly intended that fish passage not be included.

According, if fish passage is 'necessary' as per the Secretary's determination, the only option available to the Secretary is Option 1 Section 1319 (c)(1)(A)(i): repair of the lock wall of the NSBLD such that it would 'maintain the pool for navigation, water supply, and recreational activities, as in existence on the date of enactment of this Act.'

Congressional intent could not be more clear. By selecting Alternative 2-6D *and* including fish passage, the Corps has contravened Congress clear intent.

ii. If the Secretary determines Fish Passage is Necessary, then it is Required to Repair the Lock and Modify the NSBLD, not Remove the NSBLD

The language of the WIIN 2016 Act is clear. If the Corps wishes to address fish passage, it must repair the lock wall such that it maintains the pool for navigation, water supply, and recreational activities under Section 1319 (c)(1)(A)(i) of WIIN 2016. As discussed below, the Corps did not assess potential use of adjustable gates on the existing structure which will maintain the pool surface water elevation and allow for adaptive management, and include fish passage. See Figure 1, below:

Table 19: List of Intermediate Alternatives with Refinements	
Alternative Number	Alternative Description
2012 SHEP GRR (NAA)	Construct a 285' wide fixed crest weir at elevation 110 around SC side of NSBLD
1-1	Repair lock wall, retain dam, 200' wide fish passage ramp on GA side
1-2	Repair lock wall, remove dam, 380' wide fish passage ramp in place of dam
2-1	Remove lock and dam, 500' wide fixed crest weir @ elevation 105
2-2	Remove lock and dam, 500' wide fixed crest weir @ elevation 106
2-3	Remove lock and dam, 500' wide fixed crest weir @ elevation 107
2-4	Remove lock and dam, 500' wide fixed crest weir @ elevation 107.6
2-5	Remove lock and dam, 500' wide fixed crest weir @ elevation 110
2-6a	Remove lock and dam, 500' wide fixed crest weir @ elevation 110 with floodplain bench
2-6b	Remove lock and dam, 500' wide fixed crest weir @ elevation 107 with floodplain bench
2-6c	Remove lock and dam, 500' wide fixed crest weir @ elevation 108 with floodplain bench
2-6d	Remove lock and dam, 500' wide fixed crest weir @ elevation 109 with floodplain bench
2-7	Remove lock and dam, 500' wide fixed crest weir @ elevation 110 with bypass channel and one 50' wide gate
2-8	Remove lock and dam, 500' wide fixed crest weir @ elevation 110 with bypass channel and two 50' wide gates
2-9	Remove lock and dam, excavate park, 920' wide fixed crest weir @ elevation 110

Figure 1: List of Intermediate Alternatives from Corps PAAR/SEA/FONSI (Table 19 of PAAR)

The no action alternative under WIIN 2016, as well as NEPA, is retention of the current NSBLD in place with no change, as discussed below.⁴

B. The Proposal and Alternatives Fail to Meet the Requirement of both OPTION 1 and OPTION 2 in Section 1319 (c)(1)(A) to Maintain the Pool.

i. The Proposal and Alternatives Fail to Maintain the Pool and Reduce Surface Elevation from Existing Conditions.

None of the Corps' alternatives maintain the pool as it existed on the date of enactment. The pool has a water surface elevation of 115, as agreed by the Corps and confirmed below. See Technical Comments, Section V.A.; Technical Comments, Appendix C Report on Hydraulics Methodology, April 15, 2019; Appendix D New Savannah Bluff Hydraulic Modeling Discrepancies Observed During Drawdown (McLaughlin Whitewater/Merrick & Company April 2019); Sections III, IV and V below. Each of the Corps alternatives fail to maintain pool surface water elevation. For example, regarding

⁴ As discussed below, the no action alternative identified by the Corps in the PAAR/SEA/FONSI is legally incorrect in that no action is considered to be a plan altering the NSBLD respecting the separate Federal action involved in the SHEP.

water intakes, the Corps models predicts pool surface water elevations at 111.9 at Augusta’s Hicks Raw Water intake station for alternative 2-6D:

Location	Pool Elevation (ft NGVD29) @3600 cfs							
	NAA	Alt 1-1	Alt 2-3	Alt 2-6a	Alt 2-6b	Alt 2-6c	Alt 2-6d	Alt 2-8
NSBLD	113.5	112.4	108.7	111.8	108.7	109.6	110.5	111.9
Potash/Fibrant/ et al.	113.9	112.8	109.9	112.3	109.9	110.6	111.3	112.4
SCE&G	114.0	112.9	110.2	112.5	110.1	110.7	111.4	112.5
Kimberly Clark	114.0	112.9	110.2	112.5	110.1	110.7	111.4	112.5
Hicks Raw Water	114.1	113.1	110.9	112.7	110.9	111.3	111.9	112.8
City of North Augusta	114.5	113.7	111.9	113.3	111.9	112.2	112.6	113.3

2019 PAAR, at 3.6.13, P. 93 (Table 27).

Indeed, under the Corps own analysis, each alternative would place surface water levels below the Corps’ calculated surface elevation of 114.1 feet mean sea level. No proposed alternative or assessed alternative complies with Congress’ mandate in WIIN 2016 that pool surface water elevations be maintained. The proposed alternative 2-6D violates WIIN 2016, as do all alternatives analyzed by the Corps. Additional detail is provided in the Technical Comments.

Augusta points out below that the No Action Alternative under NEPA consists of current, existing baseline conditions.

In the 2012 SHEP EA, the Corps states,

“The District maintains stable pool elevations (**near EL 115 feet**) during most river flows and raises the gates at the dam during high flows to reduce the backwater effects of the dam on the upstream pool and its adjacent development.”

2012 SHEP EA, App. C Mitigation Plan, at 71.

The baseline pool elevation is therefore, by the Corps’ own analysis and published studies, 115 feet. Similarly, USGS water stage records show that the Corps has actually operated the dam at an average normal level of 115.0. Augusta has retained engineering experts from Cranston Engineering and Merrick Engineering/McLaughlin Whitewater. Both firms have vast experience with hydraulic and hydrologic analysis, with Merrick/McLaughlin having designed the Corps Columbus Georgia dam removal and environmental enhancement for shoal bass and recreation. Cranston and Merrick concur that, based upon USGS datum, NSBLD design documents, and field measurements, water surface level elevations at NSBLD are consistent with the 2012 Corps baseline, and not the 2019 PAAR document:

Attachment: Legal Comments, City of Augusta, North Augusta and Augusta Utilities April 15, 2019 Comments on U.S. Army Corps February 14, 2019 Draft PAAR, SEA, FONSI Fish Passage at New Savannah Bluff Lock and Dam

Description	Water Elevations				Notes
	Lock & Dam ^a		Fifth Street Bridge ^b		
Datum	NGVD 1929	NAVD 1988	NGVD 1929	NAVD 1988	Assumed difference = 0.8'
Normal pool per original design ^c	115.0 - 114.5	114.2 - 113.7	115 N/A	114.2 N/A	
Corps' current operations					
"Normal" ^d	114.0 -114.5	113.2 - 113.7	115.1	114.3	
Range ^e	112.0 - 115.3	111.2 - 114.2	N/A	N/A	
Usual Levels (non-flood) per USGS gauges ^f	115.0 ^g	114.3	115.0	114.3 ^h	Approximate Water Year 2018 year-long medians, by inspection
Alternative Simulations Q= 8000 cfs from HEC-RAS Summary ⁱ					Elevations Produced from Questioned Model
Existing	114.0	113.2	116.1	115.3	Probably wrong
No Action Alt	114.0	113.2	116.1	115.3	Probably wrong
Alt 1-1	113.9	113.1	116.0	115.2	Probably wrong
Alt 2-6a	112.6	111.8	115.4	114.6	Probably wrong
Alt 2-6d	111.7	110.9	115.0	114.2	Inconsistent with observations 2/15/2019
Actual Elevations February 15, 2019	111.08	110.28 ^j	112.03	111.23 ^k	Flow rate at NSBLD was 7,270 cfs, near 8,000 cfs.
Desired by Cities and Counties ^l	N/A	N/A	115.2	114.5	
<p>Note: The actual instantaneous flow rates in the Savannah River on the morning of February 15, 2019, were 7,270 cfs at NSBLD and 5,422 cfs at Augusta Canal Diversion Dam</p> <p>References:</p>					

Description	Water Elevations				Notes
	Lock & Dam ^a		Fifth Street Bridge ^b		
Datum	NGVD 1929	NAVD 1988	NGVD 1929	NAVD 1988	Assumed difference = 0.8'
<ol style="list-style-type: none"> 1. Lock and Dam United States Geological Survey (USGS) gauge is located just upstream. Datum is NGVD 1929. 2. Fifth Street USGS gauge is located on first pier from Georgia side. Datum for the recording gauge is NAVD 1988. Zero of the recording gauge is 100.00. Note that the datum for staff gauge is NGVD 1929. Zero of the staff gauge (and previous recording records) is Elevation 102.06. Verified by field surveys by Cranston Engineering Group, P.C. 3. Construction plans: <i>Rehabilitation of Gates and Piers, New Savannah Bluff Lock and Dam</i>, Plate S-500, 12 March 1995; and Corps of Engineers, U. S. Army, Savannah, Georgia, District, <i>Special Flood Hazard Information Report, Savannah River, Augusta, Georgia</i>, August 1971, p. 7. 4. Draft Report, Appendix A, p. A-19. USGS records for Water Year 2018 contradict the Corps' assertion of operating range. 5. Draft Report, 2.2.2. Hydrology and Floodplains, p. 18. 6. Inspection of records of USGS gauge records for Water Year 2018 (October 1, 2017—September 30, 2018). 7. Gauge 02196999 at New Savannah Bluff Lock and Dam. 8. Recording Gauge 02126670 at Jefferson Davis (Fifth Street) Bridge. 9. Draft Report, Appendix A, Table 8. Summary of HEC-RAS Results, p. A-41. 10. Gauge 02196999 at New Savannah Bluff Lock and Dam. 11. Recording Gauge 02126670 at Jefferson Davis (Fifth Street) Bridge. Verified by actual field survey by Cranston Engineering Group, P.C. at Elev. 111.20 (NVGD 1988) on February 15, 2019 at 11:13 am EDT. 12. Resolutions by Augusta, North Augusta, Aiken County, and Columbia County. 					

Additional detail is provided in Technical Comments at Section V.A. A supporting engineering analysis has been provided as an Appendix to Augusta's comments with elevation and model assessment data, as well as field measurement data. Technical Comments, Appendix F, River Vision Plan for the Savannah River for the City of Augusta, April 2019. Additionally, engineers performing analysis have identified several issues with modeling input and analysis. See Technical Comments, Appendix C, Report on Hydraulics Methodology, April 15, 2019; Appendix D, E. See also Technical Comments, Appendix C, Report on Hydraulics Methodology, April 15, 2019; Appendix D, New Savannah Bluff Hydraulic Modeling Discrepancies Observed During Drawdown (McLaughlin Whitewater/Merrick & Company April 2019).

The Technical Comments and supporting memoranda show that the Corps used a lower elevation than the pool level specified by the WIIN 2016 Act. Specifically, the Corps used an elevation of 113.2 where the Corps' own documents and operational records identify a. See Draft Report, Table 8, Page A-41. The Technical Comments identify field data taken during the Corps February 8 through 15 drawdown showing significantly lower pool elevations than predicted by the Corps in the Draft Report. Technical Comments Section V.A, and generally; Technical Comments, Appendix C, Report on

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Hydraulics Methodology, April 15, 2019; Appendix D, New Savannah Bluff Hydraulic Modeling Discrepancies Observed During Drawdown (McLaughlin Whitewater/Merrick & Company April 2019).

The Corps has identified alternative 2-6D as the Proposed Alternative. February 16, 2019 Public Notice. That alternative results in reduction in pool of 3.1 feet as compared to the 115 feet elevation the Corps identified in the 2012 SHEP EIS. The reduction in pool is 2.2 feet using the Corps improper baseline of 114.1 feet elevation in the 2019 PAAR/SEA/FONSI.

In selecting 2-6D as the preferred alternative, the Corps has not complied with WIIN2016. The Corps states “Alternative 2-6 [maintains] the functionality of the pool for water supply and recreation . . . in compliance with WIIN Act, Title I, WRDA of 2016, Section 1319 (c)(1)(A)(ii).” Notwithstanding, the Corps insertion of ‘functionality’ constitutes an impermissible deviation from the clear language of WIIN2016 and accordingly Alternative 2-6D does not comply with Congress’ intent by failing, as the Corps admits, to maintain the pool surface water elevation in existence at the time of enactment of WIIN 2016. The use of a ‘functionality’ approach was specifically rejected by Senator Lindsay Graham, Senator Johnny Isakson, Senator Tim Scott, Senator David Perdue, Congressman Joe Wilson and Congressman Rick Allen. See Technical Comments, Appendix B, Letter from Senators and Congressmen to Department of the Army, Corps of Engineers, April 9, 2019.

Under either analysis, alternative 2-6D violates WIIN 2016 by reducing pool surface water elevations. The reduction is significant in that portions of the river are shallow and 2-6D will leave river margins and other areas dewatered and shallow by several feet. The result will affect not only municipal water supply but recreation as prohibited in WIIN 2016.

The WIIN Act requirement to maintain the pool surface water elevation of the NSBLD is for explicit purpose of recreation and water supply. Technical comments identify adverse impacts on water supply and recreation. Technical Comments at V.F, G. Recreation and water supply are of critical importance to any Region, but Augusta has been water-dependent since its incorporation including significant investments in water projects, the Augusta Canal, the Augusta and North Augusta waterfront. Under NEPA and Corps regulations, the Corps is required to consider water supply and recreation as well as socioeconomic, environmental and aquatic impacts. Corps regulations specifically identify the purpose of Corps civil works water and related land resources project planning is to contribute to national economic development consistent with protecting the Nation’s environment, pursuant to national environmental statutes, applicable executive orders, and other Federal planning requirements. ER 1105-2-100 Economic and Environmental Principles for Water and Related Land Resources Implementation Studies, at 1-2, 2-1 (Apr 22 2000)

ii. PAAR documents apply incorrect criteria for Impacts in Violation of WIIN 2016

In the PAAR Engineering report, Appendix A, the Corps states that “the weir configuration for fish passage that is ultimately adopted must balance maintaining a pool for water supply and **minimizing residential flooding impacts, while keeping construction costs reasonable.**” Because WIIN2016 requires maintenance of recreation, the Corps placing costs and flooding above WIIN 2016 explicit requirements to maintain pool surface water elevations violates WIIN 2016. In applying incorrect and explicitly rejected criteria, the Corps’ analysis is arbitrary and capricious, an abuse of discretion, or otherwise not in accordance with law and must be rejected.

iii. The Corps is Prohibited by the WIIN 2016 Act from expending funds except in accordance with the Specific Authorization, Including Maintaining the Pool

As part of the Water Resources Development Act, the Corps is prohibited from expenditures of federal funds inconsistent with or contrary to WIIN 2016; see also 33 C.F.R. 263.15(b). The Corps is prohibited from implementation and expenditures on alternatives which do not meet the WIIN 2016 criteria for pool surface water elevations, or which would implement options other than Option 1: NSBLD Lock Repair and Modification with Fish Passage - 1319 (c)(1)(A)(i), Option 2: NSBLD Removal without Fish Passage - 1319 (c)(1)(A)(ii), or taking no action at the NSBLD.

II. Deauthorization of NSBLD is a Separate Federal Actions for the Purpose of NEPA Analysis

At the time the SHEP was developed, the NSBLD was an authorized Federal project required to be maintained. As set forth in environmental documents:

A. The lock and dam is a Congressionally-authorized project; therefore, the Corps is obligated to maintain the project as Congress provides funding for such actions.

B. The current authorization language (WRDA 2000), amended in Omnibus Act 2001, calls for repair and rehabilitation of the lock and dam structure, construction of a fish passage, and conveyance of the Lock and Dam to the City of North Augusta.

C. Removal of the structure would adversely impact the freshwater supply of eight major users.

SHEP EIS, Section 5.03.2; 2012 SHEP EIS, Appendix C Mitigation Planning, at Section C.1. P. 65

The Record of Decision, in fact, specifies that fish passage will be 'around the New Savannah Bluff Lock and Dam' clearly indicating the dam will be left in place. Record of Decision, at Compensatory Mitigation, item a (Page 2)(Oct. 26, 2012).

WIIN 2016 makes clear the Corps has limited options: Option 1: NSBLD Lock Repair and Modification with Fish Passage - 1319 (c)(1)(A)(i), Option 2: NSBLD Removal without Fish Passage - 1319 (c)(1)(A)(ii), or taking no action at the NSBLD. Under Corps regulations, the Corps is required to designate legislative authority as the primary purpose in NEPA analysis, federal actions, and Corps required reports and activities. 33 C.F.R. 263.15. The SHEP authorization and NSBLD deauthorization are separate legislative pronouncements. Under federal law, the Corps may not implement cross purposes and any interaction between the two must harmonize the language and intent of the statutes. The Corps' Draft Reports omit and ignore the plain language of WIIN 2016, fails to respect clear Congressional intent to maintain pool surface water elevation, and impermissibly selects and presents alternatives not authorized under WIIN 2016.

The stated purpose of the project is to pass sturgeon upstream of the NSBLD. PAAR, at 1.3. That is a different purpose than deauthorization of the NSBLD with the options described in WIIN 2016.

The SHEP and NSBLD actions must be treated separately for purpose of NEPA analysis, and the purpose, intent and language of each enactment must be implemented with fidelity. By failing to

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implement WIIN 2016 and combining the NEPA analysis with the separate SHEP project, the Corps is in violation of WIIN 2016 requirements and NEPA.

III. The Corps Failed to Develop an Appropriate No Action Alternative and Baseline

The Corps improperly identified baseline. For the purpose of assessing effects under NEPA, NEPA makes clear that baseline is existing conditions. However, the Corps has considered “the original design is considered the No Action Alternative (“NAA”) in the comparison of alternatives during plan formulation.” PAAR, Section 1.0. That original design is substantially different from a baseline environmental perspective and NEPA perspective.

Under NEPA, environmental baseline analyzes the effects of past and ongoing human and natural factors leading to the current status of the project and impacted area. Proper baseline is existing conditions, required to identify the environmental consequences of a proposed agency action. *Am. Rivers v. FERC*, 201 F.3d 1186, 1195 (9th Cir. 1999). The proper baseline is the status quo such that “the reader may compare the other alternatives' beneficial and adverse impacts related to the applicant doing nothing.” *Kilroy v. Ruckelshaus*, 738 F.2d 1448, 1453 (9th Cir. 1984); *Ctr. for Biological Diversity v. United States BLM*, 746 F. Supp. 2d 1055.

The Corps NAA is also legally invalid because, based upon the Corps’ own analysis and statements, the 2012 SHEP Plan is no longer legally available. 2012 SHEP at 3.5.1, Page 61. The status quo, or existing baseline, is the current condition with the NSBLD in place and under normal operations. As noted above, the Corps stated in the 2012 SHEP EIS that baseline was a pool elevation of 115 feet at the NSBLD. In the 2019 PAAR, the Corps drops baseline at the NSBLD. The Corps, impermissibly, attempts to justify its change in baseline by the 2012 SHEP mitigation plan which was never implemented.

Thus, the baseline used by the Corps is incorrect, violates NEPA requirements and is arbitrary, capricious, an abuse of discretion and otherwise not in accordance with law. It is also not representative of existing conditions, or status quo, and therefore cannot provide a meaningful baseline for environmental impact analysis.

Additionally, the 2012 SHEP could not serve as the baseline, because it was developed under a completely different set of assumptions and legal bases. The Corps application of the 2012 SHEP EIS never-constructed mitigation as baseline also violates the WIIN 2016 Act provisions, by completely avoiding any assessment which would compare the Corps’ alternatives and proposal to the pool surface water elevations required to be maintained under WIIN 2016. Thus, the Corps has violated both WIIN 2016 and NEPA.

NEPA requires that an agency's alternatives analysis include a "no build" alternative. 40 C.F.R. § 1502.14(d). "Without [accurate baseline] data, an agency cannot carefully consider information about significant environment impacts . . . resulting in an arbitrary and capricious decision." See *N. Plains Res. Council, Inc. v. Surface Transp. Bd.*, 668 F.3d 1067, 1085 (9th Cir. 2011). Accordingly, courts not infrequently find NEPA violations when an agency miscalculates the "no build" baseline or when the baseline assumes the existence of a proposed project. See, e.g., *Friends of Yosemite Valley v. Kempthorne*, 520 F.3d 1024, 1037-38 (9th Cir. 2008); *N.C. Alliance for Transp. Reform, Inc. v. United States DOT*, 151 F. Supp. 2d 661, 690 (M.D.N.C. 2001).

The no build or no action alternative under NEPA, as well as WIIN 2016, is no action – leaving the NSBLD in place with no fish passage and no change in operations. The Corps has failed to analyze or even consider this no build or no action alternative.

By applying the incorrect No Action Alternative, the Corps has failed to assess impacts of the 2012 SHEP Plan. For example, the Corps concludes “adverse environmental impacts to aquatic resources from the NAA are expected to be limited to short term impacts during construction” (PAAR at 3.6.3) for the SHEP 2012 Plan, ignoring the aquatic resource impacts of lowering the pool surface water elevation.

By applying the incorrect baseline, the Corps has underestimated impacts for each of its alternatives. This error requires the Corps to go back and reperform its modeling analysis and impact assessment and compare to current conditions baseline.

IV. The Corps failed to Consider a Reasonable Range of Alternatives

NEPA requires that the Corps analyze a range of reasonable alternatives are to be selected by reference to the project implemented. See 40 C.F.R. § 1502.14; Calvert Cliffs' Coordinating Comm., Inc. v. U.S. Atomic Energy Comm'n, 146 U.S. App. D.C. 33, 449 F.2d 1109, 1114 (D.C. Cir. 1971); Am. Rivers v. Ferc, 201 F.3d 1186, 1199, 1999 U.S. App. LEXIS 34820; Alaska Wilderness Recreation and Tourism Ass'n, 67 F.3d at 729. An agency should not "disregard alternatives merely because they do not offer a complete solution to the problem." Natural Resources Defense Council, Inc. v. Morton, 148 U.S. App. D.C. 5, 458 F.2d 827, 836 (D.C. Cir. 1972). Once an agency identifies the "reasonable alternatives" to a proposed action, NEPA and Council on Environmental Quality regulations also require an agency to identify the "adverse environmental effects" of each alternative. See 42 U.S.C. § 4332(2)(C)(ii); 40 C.F.R. § 1502.16.

Corps' regulations require that alternative plans shall be formulated to identify specific ways to achieve planning objectives within constraints, so as to solve the problems and realize the opportunities ER 1105-2-100 Economic and Environmental Principles for Water and Related Land Resources Implementation Studies, at 2-4 (Apr 22 2000). The regulations state that “it is essential that planners understand and fully visualize the problems of the planning area and how their plans will address these problems.”

Section 904 of the Water Resources Development Act of 1986 (WRDA of 1986) requires the Corps to address the following matters in the formulation and evaluation of alternative plans:

- Enhancing national economic development (including benefits to particular regions that are not transfers from other regions).
- Protecting and restoring the quality of the total environment.
- The well-being of the people of the United States.
- The prevention of loss of life.
- The preservation of cultural and historical values.

WRDA 1986; 1105-2-100 Economic and Environmental Principles for Water and Related Land Resources Implementation Studies, at 2-5 (Apr 22 2000).

The Corps states that the purpose of the action is “to mitigate for impacts to two endangered sturgeon species.” PAAR at 1.3. The Corps is referring to impacts from another project, the SHEP Project. An agency may not “define [a] project so narrowly that it foreclose[s] a reasonable consideration of alternatives.” *Davis v. Mineta*, 302 F.3d 1104, 1119 (10th Cir. 2002); see *Simmons*, 120 F.3d 664 (7th Cir. 1997). Here, although the purpose is incorrect as discussed in Section 2, above, the stated purpose to mitigate for sturgeon habitat impact from the SHEP (PAAR, at Section 1.3.) requires assessment of a full range of reasonable and feasible alternatives to achieve that habitat mitigation purpose – not just removal of the NSBLD and not just action at the NSBLD. There are many other ways to mitigation for sturgeon habitat impacts than action at the NSBLD and the associated significant adverse effects of the Corps’ proposal.

As noted above, NOAA-NMFS, in consultation with the Corps under the Endangered Species Act, Section 7, determined in 2011 that the SHEP would adversely affect juvenile Atlantic sturgeon and juvenile, sub-adult, and adult shortnose sturgeon would be adversely affected by habitat alterations resulting primarily from changes in water quality (salinity and dissolved oxygen) due to dredging of the Savannah inner harbor. Data was lacking for NMFS to determine impacts specifically, so NMFS identified habitat loss as a surrogate measure by which to measure and monitor the extent of these effects. NOAA-NMFS, 2017 Biological Opinion Supplement Biological Opinion, Deepening of the Savannah Harbor Federal Navigational Channel in association with the Savannah Harbor Expansion Project (NMFS Consultation No. F/SERJ2010105579)(2011). As noted in the 2012 SHEP EIS, in consultation with NOAA-NMFS, or NOAA-Fisheries), it was determined that the SHEP might ‘take’ four individual sturgeon through death (20 relocation takes were predicted). SHEP EIS, App. B; NOAA-NMFS, Biological Opinion, Deepening of the Savannah Harbor Federal Navigational Channel in association with the Savannah Harbor Expansion Project (NMFS Consultation No. F/SERJ2010105579) (Nov. 4, 2011). Actual documented sturgeon take is very low – the Corps reports “Throughout CESAD (including Savannah Harbor), only 10 sturgeon takes have been documented since 1990, all of which were Atlantic sturgeon and consisted of 1 take by a clamshell dredge and 9 by a hopper dredge. Though pipeline (hydraulic cutterhead) take of Shortnose sturgeon have been documented in CENAD (n=5) no incidental take of Shortnose or Atlantic sturgeon have been documented by pipeline (hydraulic cutterhead) dredging activities in CESAD.” 2012 SHEP EIS, App. B Biological Assessment.

The Corps failed to consider a full range of reasonable and feasible alternatives to mitigate for impacts to two endangered species. Numerous other mitigation alternatives to address the impacts of the Savannah Harbor Expansion are available.

- Habitat: Because NOAA-NMFS and the Corps used habitat as a surrogate for species impact to mitigate for potential take, habitat alternatives should have been assessed. The Corps failed to consider potential enhancement for sturgeon in other areas of the Savannah River. Assessment and enhancement in areas known to be currently utilized by sturgeon provide greater potential benefits to the species than opening a new area above the NSBLD where it is not known whether the species would use the habitat area. Habitat enhancement, opening of other habitat, removal of other obstructions, and other habitat options were available and not considered.
- Notably, On August 17, 2017 NMFS and USFWS designated critical habitat for the Atlantic sturgeon pursuant to the Endangered Species Act (ESA). 82 Fed. Reg. 39160 (Aug. 17, 2017).

In designating critical habitat for distinct population segments of the Atlantic Sturgeon, NMFS and USFWS limited to the designation the main stem Savannah River from the New Savannah Bluff Lock and Dam downstream to rkm 0 (South Atlantic Unit 3). Thus, the area above NSBLD is not critical habitat and was excluded by NMFS and USFWS as species recovery priority habitat under the ESA. Mitigation within critical habitat designation area is appropriate, not outside the critical habitat designation area. The critical habitat designation identifies numerous specific areas which are already accessible and suitable for habitat enhancement measures, but none has been considered by the Corps or NMFS-NOAA. Habitat enhancement in these areas is more likely to result in successful benefits to sturgeon population for both species than the Corps' proposal and without the concomitant significant adverse effects and unknown risks to the species itself from poor habitat conditions.

- Any introduction of sturgeon to the area would constitute an experimental population requiring specific ESA determination and procedures including separate public participation regarding boundaries and analysis of extent the population would be affected, be able to survive or establish in the future. ESA Section 10, 16 U.S.C. § 1539. Experimental population introduction "should be viewed as an agreement among the Federal agencies, the state fish and wildlife agencies and any landowners involved." H.R. Rep. No. 567, 97th Cong., 2d Sess. 34 (1982)). Having excluded the area from critical habitat, the determination to pass sturgeon into the area is arbitrary and inconsistent with the critical habitat designation. The Corps has failed to assess the habitat upstream of the NSBLD, as discussed in greater detail in Section IX, below. The Corps has also failed to analyze the effects of introducing species into the area as a potential experimental population.
- Due to upstream dam releases, pollutants and pollution as well as natural environmental conditions, it is known that the area upstream of the NSBLD and below Stevens Creek and the Thurmond Dam often experience low dissolved oxygen ("DO"). Low DO is a known threat to sturgeon. Actions which would place protected species at risk from low DO or other conditions require assessment under NEPA as well as consideration and consultation with resource agencies. The Corps has not assessed the habitat that it is placing sturgeon, at all. The alternative fail to assess habitat suitability and water quality issues. Data indicate toxic compounds in sediment, supersaturation of total dissolved gases, and with the changes proposed by the Corps no habitat study has been performed to determine suitability of habitat post dam removal or alteration. Without study, it is highly likely that the Corps will be required to make additional adjustment and changes to the river channel, habitat, and even the Thurmond dam upstream. None of these potential future actions have been considered. . As a result, it is highly likely that other habitat alternatives other than removal or passage around the NSBLD would provide appropriate habitat mitigation to meet the Corps and NOAA-NMFS resource goals for mitigation for the SHEP.
- Alternative Passage: The Corps has not assessed other passage methods that would not involve lowering the pool surface water elevation and would otherwise meet WIIN 2016. As an example, species relocation and placement (trap and truck) has not been considered as an alternative, although it would meet the purpose of the PAAR/SEA/FONSI and maintain pool surface water elevations. Other methodologies such as fish ladders, Denil ladders, elevation systems or fish lifts, vertical slot, lock passage (NSBLD locks have been inoperational), steep pass, pool and weir, and other common alternatives in fish passage assessments have

not been considered. Failing to consider these other alternatives renders the NEPA document deficient and is in violation of NEPA requirements for a full assessment of a range of reasonable alternatives.

- Adjustable Gate Alternatives: It is highly likely that any alternative will need to include gates and/or require a significantly widened rock ramp (much wider than the proposed 500 feet) to meet fish passage and maintenance of the upstream pool objectives. However, a gate type or configuration different from those currently installed at the NSBLD is advantageous to readily integrate with a rock ramp passage as proposed in most of the presented alternatives. Adjustable gates, commonly used at hydropower dam in a variety of settings provide much greater flow control than typical spillways and great benefits for refining fish passage flows as well as maintaining pool surface water elevations as required by WIIN 2016. This common engineering alternative was not even considered by the Corps in the Draft Reports.
- Dissolved Oxygen Enhancement: According to the National Marine Fisheries Service (NMFS, or NOAA-Fisheries), the primary impact of “[t]he proposed expansion, deepening, and modification of the Savannah Harbor through will have a significant effect on the habitat of sturgeon” and “[s]turgeon have been shown to be impacted by low dissolved oxygen levels, and mortality of sturgeon can occur within hours of exposure to low dissolved oxygen.” 2012 SHEP EIS, App’x. Z at p. 189. Additional DO enhancement in the harbor or other areas of the Savannah River would meet the species benefit goals without the significant adverse impacts to the Augusta Region as proposed by the Corps.

With respect to the alternatives that were analyzed, the Corps omitted locational alternatives for the fish passage structure, and the Draft Report and associated documents fail to describe locational alternatives, their location, and why they were excluded from analysis. PAAR, at 3.2.1.

Without assessment of a full range of alternatives, the Corps is in violation of NEPA and risks significant and drastic impact to the Augusta Region. The Corps must assess these and other alternatives. Augusta has developed an alternative utilizing adjustable gates on the existing structure which will maintain the pool surface water elevation and allow for adaptive management, and includes fish passage.

V. Alternative Evaluation Criteria Fail to Adequately Compare Impacts

The Corps’ alternative analysis fails to adequately assess impacts between alternatives, omitting consideration altogether of the greatest impact of the proposal – socioeconomics, as well as historic resource impacts of alternatives and benefits of leaving the NSBLD in place, the construction related impacts which are vastly increased for each dam removal alternatives, and failing to assess significant and important distinctions amongst alternatives during low flow or critical conditions (e.g. 3,600 cfs to 5,000 cfs) when effects on water supply, recreation, recreational navigation, socioeconomics, property rights and riparian rights, are greatest, and environmental impacts. The Draft Report, which is a NEPA reports specifically requiring assessment of effects on the environment, environmental impacts were not even identified as a preliminary screening criteria even though the differential in effects between alternatives are substantial. PAAR, at 3.1-3.5. Two of the seven criteria are economics but only as to Corps’ expenditures for construction costs and operation and maintenance. PAAR, Table 15. Fish passage effectiveness – which is the identified purpose of the project at Section 1.3 of the PAAR – is also omitted from screening criteria but then appears to have been applied to

eliminate alternatives in Section 3.4 (Table 20), but without any justification, support, or information for public review and consideration. By omitting economic impact to the Augusta Region but including economic costs as two of seven screening criteria, the Corps has failed to take a hard look at and consider the effects of alternatives in violation of NEPA.

As noted in the Technical Comments at V.A., one of the most significant impacts of the proposed project is impact on pool surface water elevation and flows. Direct impacts will be experienced in the seventeen mile pool upstream and several miles downstream. The Technical Comments point out that the Corps' analysis failed to compare or even assess low flow which will represent critical conditions for most impacts: recreation, water supply, aquatic habitat. Flow between 3,600 cfs and 5,000 cfs will occur **24% of the time** and is also much more likely to occur during summer recreational periods where greatest impact will occur, and during high water use periods where water demands and withdrawals are greatest. Technical Comments at V.G. Alternatives must address critical conditions, or these low flows below 5,000 cfs, as some of the more significant effects of the action. The Technical Comments identify significant failures to adequately assess impact on water surface elevation, recreation, special events, docks and other resources.

The Corps failed to assess critical conditions impacts for each alternative, thereby underestimating effects and precluding comparison of alternative effects. The Corps also failed to assess historic resource impacts of alternatives. As noted in Section IX.B, below, the Georgia DNR Historic Protection Division determined the Corps proposal will affect historic resources. However, the affect is significantly greater for removal alternatives as opposed to alternatives such as 1-1 which maintain the NSBLD in place with the only historic effects relating to the lock repair and necessary modifications. Alternatives leaving the NSBLD in place also have the historic resource benefit of providing opportunities for historic resource education, preservation, and tourism.

The Corps failed to consider socioeconomic impacts among the alternatives. As noted below, the Corps' socioeconomic effects analysis is deficient, and socioeconomic was identified by the public and local officials as one of the greatest adverse impacts of the proposed action. See Technical Comments, generally; Technical Comments, Appendix I, Transcript of City of Augusta Public Meeting, Lock and Dam Meeting, March 31, 2019. As between dam removal and dam remaining with lock repair alternatives, socioeconomic impact is vastly disparate. Similarly, socioeconomic effects are significant for any alternative which lowers pool elevation. Failure to assess socioeconomic effects amongst alternatives renders the alternatives analysis flawed.

The Corps arbitrarily considered costs without concomitant economic impacts of the alternatives, which skews alternative screening and analysis. Moreover, two of the seven screening categories represent economic costs to the Corps, further skewing alternatives analysis overweighting project economics (which is also not a NEPA category for analysis of effects to the human environment and environment generally), without any consideration of economic effects to the Augusta Region.

The Corps has also failed to assess construction related impacts, skewing the alternatives analysis. WIIN 2016 Option 1 alternatives which leave the NSBLD in place have significantly reduced construction related impacts as compared to removal of the NSBLD, but these effects were not considered in the alternatives analysis. Additionally, the Corps failed to assess historic resource impacts in alternatives screening and assessment. WIIN Option 1 alternatives have vastly reduced historic resource effects, and leaving the NSBLD in place actually has historic resource benefits that

have been omitted from consideration. See Section X.B., below. From a historic resource perspective, Alternative 1-1 is superior but this benefit is not considered.

As discussed in the Technical Comments and in Section IV, above, the Corps did not even consider adjustable gates which have become common and have documented benefits for pool control, adaptive management for ecosystem protection, and flood control.

The analysis that is provided is insufficient and obscure. The Corps states “Regarding Alternative 2-6, NOAA has provided information to USACE that this design is the second most favorable alternative design being evaluated for shortnose and Atlantic sturgeon and does not anticipate any major fish passage issues with the concept” but has not provided any citation to such information, assesses such information, or provided the public with this information for public participation and comment information. See PAAR, at 3.6.6.4; 3.6.6.5. Mere provision of a position from another federal agency is insufficient analysis and justification under NEPA, and places the Corps’ responsibilities for NEPA compliance and analysis with another Federal agency which is not lead agency for the proposed action and not otherwise involved in the NEPA process. If NOAA’s determinations and this undisclosed information forms the basis for alternatives analysis, then the action should involve NOAA as lead agency and decisionmaker, and at a minimum provide basis for the analysis and justification. In actuality, so little is known regarding sturgeon passage and so few examples of successful passage are available that distinctions between the alternatives respecting fish passage are arbitrary and capricious, without scientific bases, and given the very small sample sizes scientifically statistically insignificant.

With omission of the most significant impacts from the alternatives analysis, and failure to disclose or justify the distinctions between the alternatives on fish passage which is the stated purpose of the project, the alternatives analysis fails to meet the requirements of NEPA.

VI. The Corps Improperly Eliminated Alternatives Prior to the Close of the Comment Period and Prior to Receiving Comment

The Corps eliminated alternative 1-1 prior to close of the comment period, in violation of NEPA requirements. Of the alternatives, 1-1 represented the highest pool surface water elevation and of the alternatives presented, 1-1 was the alternative chosen by Augusta and North Augusta of all of the issued alternatives as the least damaging alternative to the Augusta region. However, during the comment period, the Corps improperly eliminated alternatives, specifically including the alternative which had the least impact on pool level and surface water elevation – Alternative 1-1. According to the Corps blog of March 26, 2019, just three weeks prior to the close of the public comment period the Corps eliminated Alternative 1-1. “Alt 2-6d is not the only in-channel alternative”, USACE March 26, 2019 (last accessed March 27, 2019, at <https://balancingthebasin.armylive.dodlive.mil/2019/03/26/alt-2-6d-is-not-the-only-in-channel-alternative/>).

Because the Corps modeling has demonstrated errors and was proven erroneous by the field observations February 8 through 15, its basis for eliminating 1-1 is arbitrary and capricious, an abuse of discretion and otherwise not in accordance with law.

The Corps has procedurally erred in eliminating alternatives prior to receiving comment, prior to the close of the comment period, and without affording Due Process and opportunity for comment and response. The improper elimination of 1-1 will irreversibly affect public comments, misleading members of the public and tainting the public comment process. The Corps must renotice its proposal and either include 1-1, or eliminate 1-1 in the proposal and state why in the PAAR/SEA/FONSI documents the alternative is eliminated with a full analysis.

VII. The Corps Predetermined the Action Prior to Public Comment in Violation of NEPA

In accordance with NEPA a federal entity may not predetermine outcome prior to public notice and comment and full consideration of alternatives, or applying resources to the outcome. *Davis v. Mineta*, 302 F.3d 1104 (10th Cir. 2002). Predetermining the outcome violates NEPA's requirement for a full and robust consideration of alternatives, a full consideration of effects of the action, and requirements for mitigation. Corps regulations require public involvement, collaboration and coordination in Civil Works planning. ER 1105-2-100 Economic and Environmental Principles for Water and Related Land Resources Implementation Studies, at 1-4 (Apr 22 2000).

A. Because the Corps did not Assess Habitat Alternatives to the Purpose of SHEP Mitigation, the Corps Improperly Predetermined it Would Implement Fish Passage at the NSBLD

As discussed in Sections IV and V, the Corps limited its alternatives to mitigate for sturgeon habitat 180 miles downstream to only alternatives that would remove the NSBLD (passage around the NSBLD was also improperly eliminated prior to receipt of comment) and limited alternatives of leaving the NSBLD in place but with significant effects on pool elevation and other resources. The Corps did not assess any other alternative that would achieve the habitat goal for the sturgeon, which would include habitat enhancement in numerous potential areas in the Savannah River watershed. Critical habitat has been designated for the Atlantic Sturgeon and NOAA-NMFS and Fish and Wildlife Service excluded the area upstream of the NSBLD.

By eliminating other alternatives, the Corps predetermined the NEPA decision that it would remove the NSBLD.

B. The Corps Applied for a Revision to the Endangered Species Act Biological Opinion Illegally Pre-Disposing has Already Determined it Will Implement Fish Passage in Violation of the WIIN 2016 Act

The Corps initiated consultation on the fish passage proposed February 14, 2019 on January 24, 2017. In doing so, the Corps improperly and in violation of NEPA pre-disposed its decision regarding the federal action. The Corps had decided and initiated consultation on only two alternatives, both of which failed to meet WIIN 2016 requirements for maintaining pool surface water elevation.

NMFS responded providing a schedule. NMFS stated "The current timeline for the in-river fish passage feature estimates that a construction contract for the fish passage would be awarded in January 2021 and that fish passage would be completed in October 2022 (i.e., approximately 8 months after the end of the Inner Harbor Dredging)." 2017 Biological Opinion, at 9.

The SHEP schedule does not justify violation of NEPA, shortening public participation and comment, rushing field verification and data analysis, improperly reducing the range or eliminating alternatives, or predisposing the decision before the public has had full opportunity to assess impacts.

C. NOAA-NMFS States that the Decision to Remove the NSBLD Has been Made

Even NOAA-NMFS public documents state, impermissibly, that the decision to remove the NSBLD and install a rock-arch fishway has already been made.

D. Issuing the Draft FONSI before Receiving Comments on the Proposal Violates NEPA and Due Process

The Corps has violated NEPA procedural requirements in combining a finding of no significant impact (FONSI) regarding significant changes to the Augusta Region with a separate federal action involving the SHEP 180 miles downstream. The SHEP PAAR/SEA/FONSI requests comments on alternatives, impacts, and opportunity to present additional alternatives. Issuing a FONSI before even hearing from the public on the proposal is arbitrary, capricious, an abuse of discretion, and not in accordance with the law which requires a meaningful opportunity to comment, a deliberative comment response from the Corps, and a final decision consistent with public input, legal requirements, and full assessment of effects.

NEPA prohibits commitment of irreversible and irretrievable resources prior to NEPA process, public input and preparation of environmental documentation. By proceeding with a biological opinion regarding proposals not yet issues for public comment and not yet finalized, issuing its draft FONSI, and other action described herein and in the Technical Comments, the Corps has predisposed its determination in violation of NEPA.

E. *By Committing Irreversible and Irretrievable Resources, the Corps has Impermissibly Predetermined the Outcome in Violation of NEPA*

The Corps has committed irreversible and irretrievable commitment of resources prior to completion of the NEPA process and public participation, in violation of NEPA. SHEP dredging has commenced and is ongoing; expenditures for contracts and other work are ongoing; and significant expenditures in furtherance of the Corps' desired proposal have been made.

VIII. 401 Certifications and Coastal Zone Management Act Consistency

Proposals to remove the NSBLD are not certified under Section 401 of the Clean Water Act. Coastal Zone Management Act consistency certification for the proposal is not complete and is required.

IX. The Corps Proposal and Analysis is Arbitrary, Capricious, and an Abuse of Discretion

The Corps has reversed and contradicted itself on several key facts and engineering determinations, rendering its proposal arbitrary, capricious, an abuse of discretion, and otherwise not in accordance with law.

In 2012, the Corps determined "removal of the NSBL&D is not feasible at this time." 2012 SHEP EIS, Appendix C Mitigation Planning, at Section C.1. P. 65. In 2019, the Corps determined removal is not only feasible but preferred. The reason the Corps determined removal of the NSBLD was infeasible is

due to “unacceptable due to the development that now occurs upstream along the pool created by the dam.” 2012 SHEP EIS, App. C Mitigation Plan, at 71. Augusta is currently contemplating a whitewater venue which would be precluded by either option proposed by the Corps, due to pool surface water elevation reductions as well as other project impacts. Technical Comments, at V.G Economic figures from a similar project in Columbus, Georgia, demonstrated economic benefits of \$74 million in capital investment, along with 42 new businesses, several university extensions, 400 new jobs, and \$24 million in gross revenues attributable to the quality of life improvements, recreational opportunities, and other direct and ancillary benefits of river recreation, which would be precluded by the Corps proposal. Technical Comments, Appendix F, River Vision Plan for the Savannah River for the City of Augusta, April. The Corps has not assessed the significant economic impacts to the Augusta Region of its proposal, at all.

With respect to fish passage, the 2012 SHEP EIS concluded that any of the three possible fish passage designs would “satisfactorily pass Shortnose sturgeon in both upstream and downstream directions, allowing SNS access to historic spawning areas at the Augusta Shoals.” 2012 SHEP EIS, App. C, at 81. However, in the 2019 PAAR, the Corps concludes that alternative 1-1 and 2-8 would be scored a ‘zero’ because of ‘risk of failure to reach the prime spawning ground during spawning season after a delay is an unacceptable risk.’ 2019 PAAR, at 100, Table 29. Corps documents and consultation information do not justify the absolute reversal in the 2019 PAAR from the 2012 SHEP conclusions regarding fish passage efficacy. As noted in the summary, there are no existing successful sturgeon passages in the Southeastern United States, and very limited success for related species. We can find no report of successful passage of sturgeon at the Cape Fear project, which NOAA-NMFS states is similar to the proposed NSBLD design and being assessed for efficacy for the NSBLD. Justification is therefore lacking for this wholesale change and reversal in position in the 2019 PAAR/SEA/FONSI regarding efficacy of Alternative 1-1. Scientific data is lacking, sample sizes too small, and success has not been established such that the conclusions in the 2019 PAAR/SEA/FONSI are supported and justified. Accordingly, the scoring is arbitrary and capricious, an abuse of discretion, or otherwise not in accordance with law.

The Corps estimated that impacts from the 2012 SHEP EIS Mitigation proposals would result in \$ 30 million in impacts to water intakes including municipal water supply. Since that time, Augusta has significant investment in its water infrastructure system, including water and wastewater. For the 2019 PAAR, the Corps estimates the impact to Augusta will be \$228,000 for vacuum assisted priming for surface water pumps. The SHEP PAAR/SEA/FONSI was issued for public comment on February 14 with inadequate time for calibrating the model or assessing the drastically different field observations and conditions from the anticipated modeled effects on water intakes. The Corps drawdown was commenced February 8 and continuing through February 15, 2019, rendering it impossible to assess within the public comment period. Additionally, as noted in the Technical Comments, the Corps HECRAS modeling appears to be in error underestimating drawdown elevations. Technical Comments at Section V.A. See also Technical Comments, Appendix C, Report on Hydraulics Methodology, April 15, 2019; Appendix D, New Savannah Bluff Hydraulic Modeling Discrepancies Observed During Drawdown (McLaughlin Whitewater/Merrick & Company April 2019).

As discussed in the Technical Comments at Section V.F., the highest flow rate for Augusta’s water intake was modeled at 19.5 Mgal/d and the modeling indicated the existing system required modification. Actual constructed pump station capacity (with pump changeout) is 30 Mgal/d.

Augusta has designed the river intake system to be capable of delivering 60 Mgal/d at current water surface elevations. pump system No analysis was provided for this condition.

X. The Corps Failed to Fully Assess All Direct, Indirect and Cumulative Effects, and Impermissibly Limited Geographic Scope of Analysis

NEPA requires the Corps analyze direct, indirect and cumulative effects of the action. 40 C.F.R. Part 1508. The Technical Comments detail deficiencies in the Corps direct, indirect, and cumulative effects analysis, including (but not intended to limit) the following:

A. Wetland, Fringe Wetland, and Sensitive Riparian Areas

The Corps has not assessed direct, indirect and cumulative effects to wetland, fringe wetland, and sensitive riparian habitat (Section V.K, Impacts to Wetlands not Adequately Identified, Evaluated or Mitigated). The analysis was limited to the direct area in the vicinity of the NSBLD, and was based upon assessment from the 2012 SHEP. Hydrologic effects of dropping pool surface water elevations for the fifteen miles as will result from the Corps proposal and alternatives was not considered. The lowering of pool surface elevation will potentially affect fringe wetlands on the 15 mile reach of the Savannah River above the NSBLD, and wetlands with hydrologic surface connection to the river affected by reduction in pool elevations below existing surface water elevations. The Technical Comments document potential effects to thousands of acres of wetland, fringe wetland, and sensitive riparian habitat which has not been assessed in the Draft Report. The Corps failed to assess both direct and indirect effects as well as cumulative effects of the proposal and alternatives on these sensitive areas which are protected pursuant to Section 404 of the Clean Water Act. Technical Comments, Section V.K (documented potentially hundreds and possibly thousands of acres of wetland, fringe, and riparian habitat affected). Section 2.2 of the PAAR addresses only areas in the immediate vicinity of the NSBLD and includes no assessment of pool surface elevation lowering on the seventeen mile mainstem stretch and the direct and indirect effect on wetland, fringe wetland, and sensitive riparian habitat and ecosystem features. The proposal will affect wetland, fringe habitat and sensitive riparian areas through pool lowering as well, increased fluctuation in river elevation, and flooding along the seventeen mile reach as well as downstream. See also, Technical Comments, Section V.A.; Technical Comments, Appendix D, North Savannah Bluff Hydraulic Modeling Discrepancies Observed During Drawdown (McLaughlin Whitewater/Merrick & Company April 2019).

For the wetland delineation included in the PAAR, in addition to being limited to the immediate vicinity of the NSBLD, the delineation is over five years old, and should be revisited and updated pursuant to the Corps' own regulation and guidance. Corps, RGL 90-06 ("delineations will not remain valid for an indefinite period of time")

B. Historic Resources

The Corps has not assessed direct, indirect and cumulative effects to historic resources. (Section V.M, Cultural Resources and Historical Considerations; Section V.G.7, 14 (Recreational)). The Augusta, North Augusta Region has a rich historic and cultural history with the Savannah River serving as the central feature for the region's history. The Corps failed to assess effects on historic resources. Due to the underestimate of effects on pool surface elevations, the Corps failed to fully assess effects to historic resources as required pursuant to 36 CFR Part 800 and the National Historic Protection Act (NHPA) Archaeological and Historic Preservation Act of 1974, the American Indian Religious Freedom Act of 1978, the Archaeological Resources Protection Act of 1979, the Abandoned

Shipwreck Act of 1987, and the Native American Graves Protection and Repatriation Act of 1990 (“Historic Resource Protection Laws”).

The NHPA and regulations require assessment of effects on historic resources within an area of potential effect. “Area of the undertaking’s potential environmental impact” or APE is defined as “that geographical area within which direct and indirect effects generated by the undertaking could reasonably be expected to occur and thus cause a change in the historical, architectural, archeological, or cultural qualities possessed by a National Register or eligible property.” 36 C.F.R. § 800.2; NHPA Regulations at 36 CFR Part 800, Protection of Historic Properties; Final Rule, 65 Fed. Reg. 77,698 (Tuesday, December 12, 2000 / Rules and Regulations) Because the Corps underestimated pool surface water elevations (Technical Report at V.A.), the Corps’ APE does not address all areas of direct and indirect effect. The Corps has failed to properly consider the scale and nature of the undertaking, which for direct effects of the Corps proposal is the 17 mile Savannah River Corridor that will experience reduced pool surface water elevations along the entire surface, as well as historic properties affected by the aesthetic change resulting from the pool elevation reduction. Indirect effects to historic resources have not been considered at all.

The Corps identified only fourteen historic properties are located within the APE, one of which is the NSBLD, but did not conduct a historic resource survey in the area of direct effect, indirect effect and APE. PAAR, at 35. Historic resource consultation, and NEPA analysis, cannot take place until the APE is surveyed and all eligible properties identified in consultation with the State Historic Protection Officer. The majority of the Corps analysis in the PAAR is simply photographs of select few of the fourteen resources it considered to be the totality of historic resources in the area. Augusta was founded in 1735 with a rich pre-settlement cultural history, and the river served as the focal point. By identifying only fourteen potentially affected resources, the Corps has inadequately considered historic and cultural resource effects and failed to meet the requirements of NEPA and the NHPA, and other Historic Resource Protection Laws.

For similar projects involving removal of dams, the Corps and other federal agencies have required in stream historic resource surveys.

The Corps must perform a cultural resource survey to properly identify historic resources, determine eligibility, and assess effects including all areas of direct and indirect effect within a proper APE, in consultation with Georgia DNR Historic Protection Division. Historic resource surveys including shovel tests should be conducted for the area of direct effect, including dewatered areas which have been fully or partially inundated since the NSBLD construction. As noted in Technical Comments at Section V.M., there is a high probability of encountering remains of previous occupations of Native Americans at New Savannah Bluffs. For similar projects involving dam removal, dewatering of river bottom and changes to flows, the Corps has conducted in-water assessments and found historic remains including native American historic effects, civil war related items, and others. No in stream work has been conducted here, and no shovel or other archeological survey standard studies.

Consultation documents attached to the PAAR consist largely of documents relating to the SHEP. The documents prove that the Corps undertook a much more detailed assessment of impacts to historic resources for the SHEP project, where here it simply lists fourteen historic resources with little to no analysis, and has done no survey or assessment. The Corps did contact the Georgia HPD, which wrote back that “HPD is unable to comment on the effects of the fish passage on archaeological resources or the effects of the related conveyance of the park and recreation area to Augusta-

Richmond County without additional information.” HPD re-confirmed the adverse effect of the project on the NSBLD. The Corps provided no information on water levels such that HPD could assess pool surface water elevation effects on historic resources. Consultation is not complete and must include survey information, eligibility determination and study, and effects report.

Under the NHPA and Historic Resource Laws, the direct effect on the NSBLD alone is sufficient to eliminate any alternative which would constitute removal or significant alteration of the NSBLD. The Corps has failed to consider and assess the beneficial effects of interpretive centers, educational and historic tourism under Alternatives 1-1 and 1-2 which leave the NSBLD in place. Similar projects, such as the City Mills and Eagle and Phenix dams in nearby Columbus Georgia, have had great historic resource benefits to the area and the Nation’s historic and cultural resource goals and preservation.

The Draft Reports conclude, erroneously, that “In accordance with Section 106 of the National Historic Preservation Act of 1966, as amended, the USACE determined that historic properties would be adversely affected by the recommended plan.” FONSI, at iii. This contradicts the direct conclusion of Georgia HPD and is of course incorrect when the removal of an eligible historic resource is involved.

The Corps has proposed no effective mitigation for the loss of historic resources.

Finally, issuing the Draft Reports before completion of historic resource consultation is complete is premature and in violation of the NHPA and NEPA, depriving the public and governments of Due Process and the ability to comment on effects to historic resources of the project. Without Georgia and South Carolina SHPO professional involvement in assisting with survey, eligibility, and effects determinations as well as mitigation, the public and local governments are deprived of the assistance of state and federal programs in determining historic and cultural resource effects and the ability to understand and comment on the effects, alternatives and benefits of leaving the NSBLD in place and eliminating effects of pool elevation on historic resources.

C. Environmental Impacts

Because the Corps underestimated pool surface water elevations, assessment of direct and indirect effects on environmental resources required by NEPA is incomplete.

As discussed in Technical Comments at V.A, each alternative presents drastic changes in pool surface water elevations, as well as flows, for a seventeen mile portion of the Savannah River. In addition to pool elevation impacts on habitat which were not assessed, the Corps’ proposal will drastically increase fluctuation of river level, scour, release and sluice sediment affecting benthic habitat, and increase flooding frequency. Technical Comments, Section V.A, Technical Comments, Appendix D, New Savannah Bluff Hydraulic Modeling Discrepancies Observed During Drawdown (McLaughlin Whitewater/Merrick & Company April 2019). Additionally, removal of the NSBLD will permanently and significantly effect flows downstream of the NSBLD. The Corps has not conducted assessment of environmental effects of the changes in flows, surface water elevations, and associated aquatic habitat, impact on species including life cycle stages, and associated impacts on resources such as recreation as required under NEPA. As noted in the Technical Comments, the area of direct effect includes habitat for ESA Candidate Species Robust Redhorse as well as numerous other species of importance and their habitat, including recreational fishing and protected birds. Technical Comments, Section V, V.J.1.

The Corps has also failed to assess construction related impacts. Alternatives which remove the NSBLD will have significant construction related direct and indirect impacts, and the alternatives and proposal involve several acres (10.24 to 11.88) of in-stream habitat alteration. PAAR, 3.6.3.3. The Corps has no analyzed effects of construction.

Construction related impacts have not been quantified or assessed and the construction analysis in the Draft Reports is insufficient lacking detail of the significant construction impacts which will affect environmental resources and will include direct impacts to the immediate NSLBD area as well as the over ten acres of river bottom altered by the proposal, and downstream effects from sediment release, disturbance, and required construction features. Hydraulic analysis of effects during construction, which will be substantial, were not assessed. Technical Comments, Appendix F, River Vision Plan for the Savannah River for the City of Augusta, April 2019.

D. Aquatic Habitat Impacts

Contemporary standard environmental effects practice under these circumstances involves studies of the effect of changes on aquatic organisms and habitat, through studies and analysis such as the Instream Flow Incremental Methodology (IFIM). The Corps' "Instream Flow Incremental Methodology: A Synopsis with Recommendations for Use and Suggestions for Future Research (Nestler, Corps Environmental Laboratory, March 29, 1993) identifies IFIM studies as required to obtain impact assessment data which is 'quantifiable, repeatable, accepted, and defensible' to allow 'regulators, resource agencies, developers, and development agencies to determine relative impacts of different water resources development plans. The Corps identifies the USGS Physical Habitat Simulation System (PHABSIM) model as a recommended method to assess relationship between streamflow and physical habitat for various life stages of a species of fish or a recreational activity. Indeed, the City of Augusta canal, which is under proceedings with the Federal Energy Regulatory Commission under the Federal Power Act, 16 U.S.C. 791 et seq., conducted IFIM studies for a federal action which simply leaves the canal in place with no operations. IFIM studies have been used to assess suitability for sturgeon habitat. It would be arbitrary to require a local government to conduct IFIM studies to study alternatives in keeping the Augusta Canal in place, but not conduct any studies on the effects to flow and habitat presented by the wholesale removal of a dam which control the entire river flow but is proposed for removal.

Similarly, upstream and downstream habitat will be significantly modified including scour and sediment loss in benthic habitats, significantly increased fluctuations in river elevation and associated wetted habitat, increased flooding which creates habitat and stranding issues for aquatic organisms, and general effects overall of the substantial lowering of the seventeen mile reach of the Savannah River. Downstream reaches will also experience scour and sediment loss, increased fluctuations and flooding, and less stable depths and elevations. The Corps has not assessed these impacts in the Draft Reports in violation of NEPA. See Technical Comments, Appendix D, New Savannah Bluff Hydraulic Modeling Discrepancies Observed During Drawdown (McLaughlin Whitewater/Merrick & Company April 2019).

Failing to conduct IFIM, PHABSIM, Sediment Transport Models, or similar studies renders the entire concept of passage to move sturgeon upstream of the NSBLD arbitrary and capricious, because without studies of habitat at the true anticipated habitat upstream of the NSBLD which is provided only through IFIM, PHABSIM and similar assessments, the Corps and NOAA-NMFS have no idea whether the habitat will be suitable for sturgeon. IFIM/PHABSIM will provide modeling of habitat

quality, water depths, flows and amount of habitat. Without IFIM/PHABSIM, the Corps may very well create a fish passage option which results in stranding of sturgeon, dewatering spawning habitat damaging egg and larval stages or preventing fertilization which would constitute take. Georgia EPD and South Carolina Department of Health and Environmental Control (SCDHEC) have identified the reach of Savannah River upstream of the NSBLD as impaired for several pollutants, and due to impairments Total Maximum Daily Loads and ongoing water quality assessments for dissolved oxygen, mercury, and other pollutants are in place. However, the Corps fails to include any assessment. Upstream Thurmond Dam has implemented dissolved oxygen measures, however, sturgeon can be particularly sensitive to oxygen supersaturation including artificial oxygenation systems, suffering mortality particularly at larval and juvenile stages. Dissolved gas supersaturation has negative effects on fish species as has been observed in other river systems in similar circumstances. Coughlin et al., The Effects of Dissolved Gas Supersaturation on White Sturgeon Larvae Issues; NMFS, Modeling the Effects of Dissolved Gas Supersaturation on Resident Aquatic Biota in the Mainstem Snake and Columbia Rivers (AR-1237)(undated). Oxygen supersaturation data at Section V. of the Technical Comments shows exceedance of supersaturation in the Savannah River in the habitat which the Corps seeks to introduce sturgeon. Levels as high as 120% have been documented, above the 103% identified as effecting salmonids and Current U.S. Environmental Protection Agency water quality criteria for saturation is 110%. In other river systems, sturgeon have shown proclivity to lay eggs at or near farthest upstream reach below dams, suffering from scour, egg displacement and other effects which would include lethal effects. The Corps regularly studies effects of supersaturation and it would be arbitrary and capricious and potentially constitute take under the ESA for the Corps to introduce sturgeon to habitat where eggs and larval stages would suffer harm and potential lethal effect. See, e.g. McGrath et al., "Total Dissolved Gas Effects on Fishes of the Lower Columbia River" Prepared for the U.S. Army Corps of Engineers Portland District, Portland, Oregon (Mar. 2006); Corps, Total Dissolved Gas Effects on Incubating Chum Salmon Below Bonneville Dam (Jan. 2009).

NOAA-NMFS and USFWS have concluded in other river system that dam operations constitute take of sturgeon due to effects of releases, scouring of substrate, and related dam water quality. See USFWS, Biological Opinion for ACF Water Control Manual (2016). As noted in the Technical Comments, Appendix D, North Savannah Bluff Hydraulic Modeling Discrepancies Observed During Drawdown (McLaughlin Whitewater/Merrick & Company April 2019), the project is likely to create sediment scour, affecting habitat which can be important for spawning for sturgeon and other species including fishes, crayfish and other invertebrates, reduce sediment, and the design will actually promote sediment sluicing. The Corps has not considered these habitat issues or the potential for take of sturgeon within the upstream habitat, or the potential effect on upstream dam operations which would be required to be modified to avoid take under prohibitions under Section 9 of the ESA making take unlawful. If the purpose of the project is successful in introducing sturgeon, these impacts are direct, indirect and cumulative effects of the action which must be considered.

Additional assessment of upstream NSBLD habitat is necessary and appropriate where the Corps intends to place an endangered or threatened species in the area. Impacts from low dissolved oxygen, excessive oxygen supersaturation

E. Endangered and Protected Species

The Corps developed a list of protected species which omitted the seventeen mile upstream area from the NSBLD which will experience pool surface water elevation reductions up to several feet.

The Corps list, from the USFWS Information for Planning and Consultation identified only the immediate geographic area of the NSBLD. PAAR, Appendix C1. Therefore, the Corps has failed to assess direct and indirect and cumulative effects on protected species in violation of NEPA and the ESA.

F. Sediments

Dams retain sediment, and older dams are likely to accumulate materials which might include compounds, pollutants and elements which are banned or no longer utilized but persistent in the environment. Upon disturbance of the dam, or removal, these sediments become resuspended releasing pollutants, and would otherwise become available for exposure to aquatic organisms and recreational users. The Corps has not assessed sediments. The Corps states that sediment behind the dam will not be removed as part of this project (PAAR at 3.6.3.3) and therefore sediment release, resuspension, and exposure is an impact requiring assessment under NEPA.

As noted in the Technical Comments at V.I, limited data is available on sediment above the NSBLD, with some indication of toxic compounds and pollutants. Sturgeon particularly at the juvenile and larval stage spend life cycle at or near bottom sediments and accordingly exposure would be increased as compared to other aquatic species. A sediment screening analysis in accordance with EPA sediment toxicity screening criteria should be performed to assess impact of sediment release from any dam disturbance or breach; potential risks to downstream water supplies; and risks to the protected sturgeon which tend to utilize bottom habitat and could be exposed to the point of a take under the ESA by passage upstream. EPA, Sediment Toxicity Identification Evaluation (TIE) EPA/600/R-07/080 (Sept. 2007). These studies must be performed prior to agency action, and assessed in a publicly noticed environmental document.

G. Socioeconomic Impacts on the Augusta Region

The Corps has not performed analysis of socioeconomic impacts to the Augusta Region resulting from the proposal. Among NEPA's requirements are the mandate to analyze effects on the human environment. 42 U.S.C. § 4332(C). 2.2.14.1 Except limited real estate considerations which are limited, economic impact was not even considered in evaluation criteria. PAAR, at 3.1.1. Technical Comments at Section V.H identify flaws and omitted economic impacts. As part of the direct, indirect and cumulative effects analysis, impacts on tourism, recreation, fishing, government investment and general overall economic vitality of the area is required under NEPA. As noted throughout this document and the Technical Comments, including testimony of Congressmen Joe Wilson and Rick Allen, Mayors Hardie Davis, Jr. of Augusta and Bob Pettit of North Augusta, and Gary Bunker, Chairman of the Aiken County Council (incorporated into the Technical Comments at Appendix I, Transcript of City of Augusta Public Meeting, Lock and Dam Meeting, March 31, 2019 the project will have significant economic effects on the Region.

For its environmental justice assessment, the Corps utilized the entire Augusta-Aiken GA-SC Metropolitan Statistical Area (Aiken County, Edgefield County, Richmond County, Columbia County, Burke County, McDuffie County). PAAR at 2.2.14.1. To not assess socioeconomic effect on the region while applying the regional demographic to determine environmental justice effects is arbitrary. We note that the Corps has failed to assess individual demographics in the vicinity of its proposal dam removal and the vicinity of the pool surface water elevations, to determine economic and social impact, potential effects on subsistence fishing and recreation, and other socioeconomic effect.

The Corps has failed to even consider riparian (water) rights of landowners, governments, and other entities resulting from the proposed project. The proposal affects riparian rights along a stretch of the Savannah River for the seventeen mile upstream area of direct impact, plus effects on tributaries of declining elevation in the mainstem resulting in lower tributary levels and increased flows, as well as the downstream effects which would include several miles (but has not even been contemplated by the Corps in the Draft Reports). Under the laws of both Georgia and South Carolina, owners of land adjacent to or underlying the affected waterbodies possess rights in the use of the water, as well as the increased property values resulting from uses and location including recreation, aesthetics, and water supply. The Corps has not assessed effects on riparian and water rights.

The proposal will result in significant diminution of property values, which has not been assessed by the Corps. Compensation under Constitutional provisions will be required.

H. Recreation Effects

As with wetland, riparian and fringe habitat, endangered species, historic resources and other resource areas, because the Corps failed to assess direct effects of the action on the seventeen mile stretch of the Savannah River upstream of the NSBLD, the Corps has failed to assess recreation effects. NEPA requires assessment of direct, indirect and cumulative effects on recreation, and in the case of this project WIIN 2016 specifically requires the pool surface water elevation be maintained to protect recreation. See Section I.

The Technical Comments at Section V.G. discusses recreation impacts.

XI. Coordination and Assessment of Impacts on Federal Power Act, 16 U.S.C. §§ 791 et seq., is Required

The Augusta Canal is undergoing proceedings under the Federal Power Act with Federal Energy Regulatory Commission ("FERC"). Three hydropower projects in the vicinity are also potentially subject to Federal Power Act proceedings. The Corps must consider direct, indirect, and cumulative effects on Federal Power Act projects and resources.

XII. Despite Significant Impacts, the Corps Has Failed to Propose Mitigation

The Corps proposes to forever change over seventeen miles of river, affect potentially thousands of acres of wetland, fringe, and riparian habitat, reconstruct and alter over ten acres of in-stream habitat, and has not proposed mitigation for effects. The Corps proposed only mitigation for 0.41 acres of wetland, limiting its own analysis to wetlands within the immediate vicinity of the NSBLD.

The Corps has proposed no mitigation for historic resources, despite its own conclusion of adverse effect and determination by the applicable State Historic Preservation Officers of adverse effect. As noted above, historic resource effects are underestimated and significant, and additional studies are necessary. In failing to assess historic resources, the Corps has failed to consider and apply mitigation measures.

The Corps has proposed no mitigation for construction related impacts.

The Corps has proposed no mitigation for socioeconomic effects, including economic effects to the Augusta Region, effects on subsistence fisheries long term and disruptions during construction.

Attachment: Legal Comments, City of Augusta, North Augusta and Augusta Utilities April 15, 2019 Comments on U.S. Army Corps February 14, 2019 Draft PAAR, SEA, FONSI Fish Passage at New Savannah Bluff Lock and Dam

The Corps has proposed no mitigation for impacts to recreation, despite clear and significant impacts and despite clear instruction from Congress to maintain the pool so as to avoid recreational impacts.

**Technical Comments of the Cities of
Augusta, Georgia and North Augusta, South Carolina
on**

***U.S. Army Corps of Engineers Report:
“Savannah Harbor Expansion Project,
Georgia and South Carolina: Fish Passage at New Savannah
Bluff Lock and Dam
Integrated Post Authorization Analysis Report and
Supplemental Environmental Assessment”
and Related Documents***

Submitted by



Augusta, Georgia

and

North Augusta, South Carolina



April 15, 2019

Contents

I.	Introduction.....	1
II.	Water Infrastructure Improvements for the Nation Act (WIIN Act 2016).....	3
III.	Corps of Engineers Guidance document: <i>Memorandum for Commander South Atlantic Division</i> , dated May 25, 2017.	4
IV.	Overall Comment on Erroneous Content and Changing Costs During Comment Period.....	5
V.	Overall Comments on Corps Draft Report	5
A.	Hydrology and Hydraulics Methodology.....	5
B.	Planning Process Comments	7
1.	“No Action” Alternative Selection Flawed.....	7
2.	SHEP 2012 Plan (NAA) Should Be Considered An Actual Real Alternative.....	7
3.	Comparison of Alternatives Flawed.....	7
C.	Navigation	7
D.	Water Level Lowering.....	8
E.	Flooding.....	10
F.	Water Supply Concerns.....	12
G.	Recreation and Economics	13
1.	Recreation, Uses, and Economics not Adequately Considered.....	14
2.	Evaluated Flows and Frequency.....	15
3.	Prediction on Water Surface Elevations and Decreased Depths	16
4.	Impacts to Docks	17
5.	Impacts to Hosting Special Events	17
6.	Impacts to Larger Boats & Commercial Operations	18
7.	Impacts to the NSBLD Park.....	18
8.	Summary - Recreation, Uses, and Economics not Adequately Considered.....	22
9.	River Vision Plan for the Savannah River	22
10.	Integration of the NSBLD Alternatives with Upstream Planning.....	24
11.	Integration of the NSBLD Alternatives with the Proposed NSBLD Park	24
12.	Fishing	24
13.	Criteria for Recreational Value for the Park	25
14.	Integration with the Whitewater Passage and NSBLD Alternatives.....	25
H.	Impacts and Costs for Temporary Works During Construction.....	26
I.	Real Estate	27
J.	Sedimentation.....	27
1.	Siltation of the Pool Over Time	28

2. Toxicity and stabilization of newly exposed sediments	28
K. Aquatic Resources	29
1. Impact of Dam Alterations on Savannah River Fisheries	29
2. Impact of dam alterations on dissolved oxygen concentrations.....	30
3. Scour Hole Below NSBLD	33
4. Effect of Drawdown on Groundwater Elevations	33
5. Justification of mitigation.....	34
L. Impacts to Wetlands not Adequately Identified, Evaluated, or Mitigated	34
1. Wetlands near the NSBLD Site.....	34
2. Wetlands Upstream of the NSBLD	36
M. Power Generation – A Lost Opportunity for O & M Revenue?	37
N. Cultural Resources and Historical Considerations	37
VI. Specific Comments on Alternative 1-1	39
A. Reasons to include and select Alternative 1-1.....	39
1. Advantages, under the WIIN Act 2016 specified purposes:	39
2. Disadvantages, under the WIIN Act 2016 specified purposes:.....	39
3. Other Advantages, not directly related to WIIN Act specified purposes:	39
4. Other Disadvantages, not directly related to WIIN Act specified purposes:	40
B. Reasons to Question Costs Related to Alternative 1-1.....	40
1. Widely Changing Costs.....	40
2. Erroneous Cost Estimates and Assignment of Responsibility Cost Sharing.....	40
VII. Specific Comments on Alternative 2-6d.....	41
A. Reasons to Reject Alternative 2-6d.	41
1. Advantages, under the WIIN Act 2016 specified purposes:	41
2. Disadvantages, under the WIIN Act 2016 specified purposes:.....	41
3. Other Advantages, not directly related to WIIN Act specified purposes:	41
4. Other Disadvantages, not directly related to WIIN Act specified purposes:	41
B. Reasons to Question Costs Related to Alternative 2-6d.....	42
1. Erroneous Cost Estimates and Assignment of Responsibility for Cost Sharing.....	42
VIII. Detailed Comments on Corps Draft Report, Line by Line	42
APPENDIX A	Resolutions of Governing Bodies: Augusta, North Augusta, Aiken County
APPENDIX B	Letter from Senators and Congressmen to Department of the Army, Corps of Engineers, April 9, 2019.
APPENDIX C	Report on Hydraulics Methodology, April 15, 2019

APPENDIX D	Hydraulic Modeling and Discrepancies Observed During Drawdown
APPENDIX E	Savannah River Sediment Chemistry Data
APPENDIX F	River Vision Plan for the Savannah River for the City of Augusta, April 2019.
APPENDIX G	Detailed Comments on Corps Report Line by Line
APPENDIX H	Other Alternatives That Have Been Proposed
APPENDIX I	Transcript of City of Augusta Public Meeting, Lock and Dam Meeting, March 31, 2019
APPENDIX J	Aiken Standard News Article, February 19, 2019
APPENDIX K	Augusta Chronicle News Article, February 16, 2019

**TECHNICAL COMMENTS OF THE CITIES OF AUGUSTA, GEORGIA AND
NORTH AUGUSTA, SOUTH CAROLINA**

On

**Savannah Harbor Expansion Project,
Georgia and South Carolina: Fish Passage at New Savannah
Bluff Lock and Dam**

**Integrated Post Authorization Analysis Report and
Supplemental Environmental Assessment**

February 2019

And Related Documents

April 15, 2019

I. Introduction

The Corps of Engineers (Corps) proposes to remove a dam which has been in place and established the water surface elevation upon which Augusta and North Augusta (Cities) have depended on for nearly a century. The removal will reduce water levels in the Savannah River over seventeen miles upstream through the cities of Augusta and North Augusta reducing water levels by as much as three to five feet from existing water surface elevations.

See Figures 1 – 3. The proposed project will directly affect approximately seventeen (17) miles of river habitat and nearly a century of regional planning, economic development, water supply, and recreation in the Augusta-Richmond County and North Augusta area, one of the largest 200 metropolitan statistical areas in the United States. Immediate economic effects will be many millions of dollars and, over the 100-year period identified in the SHEP Draft Report, the economic impact to the Region will be in the billions.

Augusta and North Augusta have a unique and well-developed history dependent upon water related activities, water dependent recreation, water supply including pumps for water supply all of which will be affected by the proposed action. Water resources, including the Savannah River and the affected reach and area of indirect effects, are part of our citizens' quality of life and fundamental infrastructure. The effects of the Corps proposal are significant, permanent, longstanding, and of sufficient public concern and controversy such that the action constitutes a major Federal action significantly affecting the quality of the human environment under Section 102 of NEPA, and



This photo taken Feb. 13, shows the river levels near River North in North Augusta during the Savannah River drawdown.

Figure 1: Water level reductions of as much as three to five feet several miles upstream of the NSBLD during February 8 – 15 (Aiken Standard, "CSRA officials react to Savannah River drawdown," Feb. 19, 2019 (attached as Appendix J))

accordingly is required under NEPA to proceed under a detailed Environmental Impact Statement (“EIS”); 33 C.F.R. Part 230; 40 C.F.R. Part 1508.

Licensed professional engineers have identified errors in water surface elevation modeling (HEC-RAS) which were evident during the February 8-February 15 Corps drawdown of the pool. Corps modeling underestimated pool lowering by several feet in some instances, so that the observed water levels were much lower than predicted. Details regarding the modeling disparity from field evidence, calibration, and potential concerns are outlined in the Technical Comments transmitted herewith, and in the appended Report on Hydraulics Methodology, included in Appendix C. Accordingly, the SHEP Draft Report is demonstrably incorrect from a modeling and impact assessment standpoint and must be revised and reissued (in EIS form as noted above and in Legal Comments).

The Corps has not provided adequate time for public and local governmental consideration of the proposed action and alternatives, and has impermissibly both predetermined the action (Proposal 2-6D) and eliminated alternatives (e.g. Alternative 1-1) prior to public and governmental input. Importantly, the Draft Report was issued for public comment **less than two days after the Corps drawdown**, insufficient time for calibrating the model or assessing the drastically different field observations and conditions from the anticipated modeled effects. The Corps drawdown was commenced February 8 and continuing through February 15, 2019, and the Draft Report was issued the very next day February 16, 2019, rendering it impossible to have accounted for public comments.

During the comment period, the Corps improperly eliminated alternatives, specifically including the alternative which had the least impact on pool level and surface water elevation – Alternative 1-1. According to the Corps’s blog of March 26, 2019, just three weeks prior to the close of the public comment period the Corps eliminated Alternative 1-1.¹ The Corps has not followed NEPA and Corps regulatory procedures including scoping and proposing a Finding of No Significant Impact (“FONSI”) before soliciting public comment as required. These errors and deficiencies in the public notice and comment process require revision to the analysis and re-noticing to ensure Due Process and NEPA and Corps regulatory program compliance.

The Cities identify other concerns in the specific comments and supporting narratives presented below and in the attached companion Legal Comments.



Figure 2: Water level February 15, 2019 (Augusta Chronicle, “Cost Differences in Options for Lock and Dam Questioned,” Augusta Chronicle (Feb. 15, 2019) attached as Appendix K).



Figure 3: Water Level Decrease Augusta Riverwalk, February 15, 2019 (Augusta Chronicle, “Cost Differences in Options for Lock and Dam Questioned,” Augusta Chronicle (Feb. 15, 2019) attached as Appendix K).

¹ “Alt 2-6d is not the only in-channel alternative”, Corps March 26, 2019 (last accessed March 27, 2019, at <https://balancingthebasin.armylive.dodlive.mil/2019/03/26/alt-2-6d-is-not-the-only-in-channel-alternative>).

II. Water Infrastructure Improvements for the Nation Act (WIIN Act 2016)

The Cities of Augusta and North Augusta find that the Act has basic flaws in language that have led the Corps to erroneous interpretation and subsequent errors in methodology in the Draft Report and subsequent amendments.

The following is a summary of principal provisions of the two options in the WIIN Act, (which was amended and passed in the U. S. Senate in a single day without hearings, debate, nor prior knowledge of the leadership of either of the States of Georgia and South Carolina):

- De-authorize the Lock and Dam
- Modify the project according to two options:

EITHER

A(i) *“Repair of the lock wall . . . and modification of the structure . . .*

(I) to maintain the pool for navigability, water supply, and recreational activities as in existence on the date of enactment of this Act and

(II) to allow safe passage . . of . . . migratory fish.”

OR

A(ii) *“Construction . . . of a structure” [or weir] . . . “that is able to maintain the pool for water supply and recreational activities, as in existence on the date of enactment of this Act.*

(III) Removal of the . . . Lock and Dam.”

Note that the two options have drastically differing purposes. Along with water supply and recreation, the first option includes navigation and fish passage, while the second option excludes navigation and fish passage. A(i) includes three purposes, including navigation. Although the Corps has interpreted navigation as being only within the pool, a plain reading of the WIIN Act reveals that the obvious intent is that the lock should remain in place and should include rehabilitation for navigation up and down the river, not just in the pool. Otherwise, navigation would become merely a subset of recreation. In fact, the “Value Engineering” alternative presented by the Corps in 2015 showed the lock remaining in place for the alternative on which this section of the WIIN Act is based.

A(ii) has only two purposes, which are different from A(i), including water supply and recreational activities only. Moreover, A(ii) contains no mention of authority for a fish passage, nor any requirement that one be constructed under this option.

The Act goes on to authorize the conveyance of the park and recreation area adjacent to the Lock and Dam to Augusta-Richmond County, Georgia, without consideration. Augusta, Georgia would normally expect to receive a functioning park and recreation area in good condition by language such as this; however, it does not appear that any facilities in such serviceable condition are planned under the implementation of this authorization.

III. Corps of Engineers Guidance document: *Memorandum for Commander South Atlantic Division, dated May 25, 2017.*

The Cities find that the Guidance repeats the flawed language of the Act and contains its own basic flaws in implementation instructions that have led the Corps to erroneous interpretations and subsequent errors in their report.

Option 1 repairs the lock wall and retains the lock, which can be and should be rehabilitated for navigation as required by the Act. The Corps staff has erroneously interpreted navigation to be only within the upstream pool. If this were really the legislative intent, then why would navigation not also be an authorized purpose of Alternative 2, which obliterates the lock?

Option 1 is required to pass safely the shortnose and Atlantic sturgeon and other migratory fish, while Option 2 is not required to pass fish at all. Why then do the alternatives proffered under Option 2 include a fish passage at all?

Both the WIIN Act and the Guidance require a structure that is able “to maintain **the** pool for water supply and recreational activities, as in existence on the date of enactment of this Act”. This language is clear that the existing water levels and existing range of level operation must be replicated as major design criteria for the intended project. It clearly does not imply maintaining **a** pool, or keeping just the **functionality** of the pool, or other such stretched interpretations. (emphasis added).

Members of the Georgia Congressional Delegation wrote the Corps of Engineers to “express the intent of Congress” in the WIIN Act, concluding in part, “Clearly these results [of the drawdown] do not reflect the intent of Congress.” (See copy of letter in Appendix B.)²

The Guidance directs the identification of specific adjacent park and recreation area acreage to be conveyed to Augusta. These should be only lands not required for the project, and should not include flood passage lands that would require future maintenance by the City of Augusta for purposes other than parks and recreation.

With respect to cost sharing, it is noted that the Guidance directs, “If Alternative 1 is chosen, the federal share of post-construction costs . . . will be 100 percent; if Alternative 2 is chosen, the federal share will consist of 100 percent of the costs . . . of maintaining the fish passage; and the non-federal share will consist of 100 percent of the costs of operation and maintenance of the structure for any other purpose, including maintenance of the pool for water supply and recreation.”

First, there should be no costs for maintaining the fish passage under Alternative 2, because it is not authorized to have a fish passage nor so directed in the Guidance. Second, the cost sharing directions herein have not been closely followed in the Report and the costs have sometimes erroneously been split on all alternatives whether pursuant to WIIN Act Option 1 or Option 2. The cost comparison presented in the Corps’s blogpost “Comparing the two Fish Passage

² Letter: Senators Graham, Scott, Isakson, and Perdue, and Representatives Wilson and Allen to The Honorable R. D. James and Lieutenant General Todd T. Semonite, April 9, 2019.

alternatives,” is blatantly in error in that the O&M costs for Alternate 1-1 should have been assigned 100% to “Fed Share” not “non Fed Share,”³

IV. Overall Comment on Erroneous Content and Changing Costs During Comment Period

The Cities find the Draft Report riddled with errors and inaccuracies, both in fact and in analyses, so as to bring into question the quality of the information upon which critical decisions are to be made, especially because those decisions bring with them permanent threatening and negative consequences to the communities.

The Corps of Engineers inexplicably removed Alternative 1-1 from their consideration and drastically changed their arbitrary and unsubstantiated cost projections during the middle of the comment period, leaving the Cities and other stakeholders baffled as to what alternatives and what content of the Draft Report is to be commented upon. It is assumed throughout these comments that the Cities’ responses should be on the Draft Report as originally published, including Alternative 1-1. The subjects of the major substantive changes in content that were published in the Corps blog and not presented to the public in the official Public Workshop will also be addressed as those topics appear herein.

V. Overall Comments on Corps Draft Report

A. Hydrology and Hydraulics Methodology

The hydraulic models used in the Analysis Report are all flawed and do not accurately represent the actual water surface profiles on the Savannah River. At least one major problem is the selection of the value for the roughness coefficient “n” in Manning’s equation for open channel flow, resulting in predicted water levels much higher than reality.

The accurate predictions of water levels are of great importance to the design of any water level management structure and are even more paramount when those structures are fixed weirs. In those cases, the designers only get one chance to get it right. They have not gotten it right yet, as proven by the Fixed Weir Pool Simulation conducted by the Corps in February 2019.

Observations on-site during the February 2019 river drawdown show clearly that during modest flows, the pool behind the Lock and Dam has very little fall end-to-end, and thus acts much more like a lake than it does like a river.

These facts demonstrate major flaws that affect all of the hydraulic profile computer models and bring into question the validity of the entire Report and its conclusions, which must be withdrawn, corrected, and reissued for public comment.

An early drawdown to calibrate and validate the HEC RAS hydraulic model should (and could have easily been conducted) have been conducted prior to the development and use of modeling results in the selection of alternatives.

³ <https://balancingthebasin.armylive.dodlive.mil/2019/03/18/how-two-fish-passage-alternatives-compare/>, Draft Report, 4.3 Cost Sharing, p. 105, Implementation Guidance, May 25, 2017, accessed March 28, 2019; this is at variance with the Guidance document and Table 31: of the Draft Report, p. 104.

This critical comment is supported by the observations of the conditions during the drawdown of the river in February 2019. This test was a prime opportunity to test the validity of the computer simulations models using the subject of those models: the Savannah River itself.

On February 15, 2019, the water level drop from Fifth Street (111.23, NVGD 1988) to the Lock and Dam (110.28, NVGD 1988) was 0.95 feet.⁴ This amount is only one-third of the difference of 3.3 feet predicted by the Corps's 8,000 cfs model.⁵ Using the actual drop over the 12.0 mile reach and the corresponding flow rate occurring at the Lock and Dam at the time of 7,270 cfs just downstream from the Lock and Dam, the input values for the model can be tested.⁶

An analysis of these conditions, which is presented in detail in Appendix C, shows that Manning's "n" values probably lie between 0.019 and 0.023.⁷ These values are much different from either the 0.031 or 0.033 estimates used by the Corps.⁸ Their report states the following concerning this subject, "Manning's n values for natural channels are difficult to quantify outside of a laboratory setting and are subject to the professional judgement and experience of the hydraulic engineer." The drawdown furnished the best "laboratory setting" of all, the full-sized physical model of the Savannah River itself. It proved that the water level drop at Fifth Street was at least three times that which the Corps's simulations had predicted.⁹

The Draft Report also covers selection of Manning's "n" values for the weir itself, adapting the figures from the rock weir structure of the Cape Fear River Dam Removal and Fish Passage, which ranged from 0.056 to 0.078, and "ultimately landed on a conservative n-value for the rock ramp of 0.08"¹⁰ (Emphasis added) Their adopted value lies outside the range from which it was derived. In fact, for low flows the higher n-value is not conservative at all. It will predict higher upstream stages than the results from choosing a lower value. This would produce the same type of erroneous elevation difference between predicted and actual that was observed during the February 2019 drawdown.

4 USGS Recording Gages 02196670, 02196999, and 02197000.

5 Corps of Engineers, Analysis Report, Appendix A, Table 8, p. A-41.

6 USGS Recording Gage 02197000. A corresponding flow rate of 5,422 cfs at the Augusta Canal Diversion Dam on the morning of February 15, 2019, supports the approximate flow through the reach. This does not include flows from major creeks between the Canal Dam and the NSBLD; Unfortunately, the steady flow condition, which would have been desirable for a more accurate test, was not quite reached during the drawdown, because it was cut short when the bulkhead at the Goodale Landing neighborhood showed signs of imminent failure. (Personal communication: Vance Moody to Tom Robertson, March 6, 2019.)

7 Robertson, Thomas H., Report on Hydraulics Methodology, April 15, 2019, See Appendix C hereof.

8 Corps of Engineers, Analysis Report, Appendix A, p. A-15.

9 One of the Goals and Objectives of the drawdown was to "verify the predictions made with the riverine model for the depth attenuation through the pool. If necessary, adjustments will be made to the model to better represent the actual conditions." See "Operation Plan for Fixed Weir Pool Simulation, Savannah Harbor Expansion Project Fish Passage at New Savannah Bluff Lock and Dam", January 25, 2019, pp. 2-3, copy in the Office of the Mayor, North Augusta, SC. Because the predictions and the actual conditions of elevation were grossly different, all of the hydraulic models are likely similarly wrong, so that adjustments must be made to model and all of its simulations that underly the report. The report must be amended or republished. The Cities reserve the right to make additional comments when the corrected data is made available, because the Draft Report is erroneous.

10 Draft Report, Appendix A, 2.1.2. Geometry Modifications, p. A-5.

B. Planning Process Comments

1. “No Action” Alternative Selection Flawed.

Selection of the SHEP 2012 Plan as the No Action Alternative is illogical, because it cannot be built following the WIIN Act 2016, which de-authorized the Lock and Dam. Selection of this plan also distorts the base line conditions of the complete set of water surface profiles upon which the entire Draft Report is based. The No Action Alternative, by contrast, should be the actual “existing conditions” that prevailed before and on the date of enactment of the WIIN Act, which are higher. Using the real stages as the base line would be more accurate. For example, the actual existing operating level at the Fifth Street gauge should be 114.2, not 113.2 (NAVD 1988). The alternatives analysis of the Draft Report should be withdrawn and re-analyzed with a corrected No Action Alternative.

2. SHEP 2012 Plan (NAA) Should Be Considered An Actual Real Alternative

If the SHEP 2012 Plan should be retained as the No Action Alternative (notwithstanding the previous paragraph of objection), the SHEP 2012 Plan must be considered as an actual viable alternative, capable of being implemented if selected. It was approved by all agencies, was “shovel-ready” before the WIIN Act, and could likely be implemented more quickly than any other plan.

3. Comparison of Alternatives Flawed

The Draft Report errs in directly comparing alternatives that are not developed pursuant to the same section of the WIIN Act, because each has different purposes and therefore the criteria should be different, depending upon whether the alternative be promulgated under Option (i) or Option (ii), as described in the WIIN Act 2016 paragraph above. Thus, the Plan Selection section must be reformulated to conform correctly to the Act. The Option (i) plans should be judged by the criteria of navigation, water supply, recreation, and fish passage. The Option (ii) plans should be judged by the criteria of water supply and recreation. Faithful application of these criteria, that will correct the similar flawed Table 29: Final Analysis¹¹ in the Draft Report, will result in a different outcome of ratings for the different alternatives, most likely giving the No Action Alternative and Alternative 1-1 the highest ratings.

C. Navigation

The Cities of Augusta and North Augusta find that none of the alternatives maintain the pool as required by the WIIN Act. Further the Cities interpret the word “navigation” in the WIIN Act under its option (i) as navigation through the existing lock up and down the river past the rock ramp over the dam, as evidenced by the fact that the lock wall is directed to be retained and repaired under this option. This position is bolstered by the fact that the act does not authorize navigation as a purpose of the free-standing weir described in option (ii). The distinction clearly illustrates that the act does not contemplate “navigation” to apply merely to movements within the pool, as arbitrarily interpreted by the Corps, although it would also include those functions. All alternatives in the Draft Report fail to conform to the WIIN Act for navigability, except the No Action

¹¹ Draft Report, p. 100.

Alternative, which retains the lock, but does not repair it. Navigation within the pool itself is also impaired by all of the alternatives, including Alternative 1-1 and the No Action Alternative, which lower the pool elevations.

The WIIN Act authorized navigation as a purpose for the Option (i) alternatives but not for the Option (ii) alternatives. Keeping the lock is clearly depicted in one of the 2015 “value engineering” alternatives upon which the language of the act was apparently based, showing the rock ramp over the dam gates

As for navigability within the pool, the lowered water levels of all of the Option (ii) choices will impair or prevent safe navigation of several reaches of the pool. The recommended plan is particularly onerous, in that it purports to keep the functionality of the pool, yet dangerously exposes boat traffic to underwater obstructions that heretofore have not come into play. A particular safety issue would be newly created along the structure known as Gardner’s Bar training wall or jetty, which extends for about one

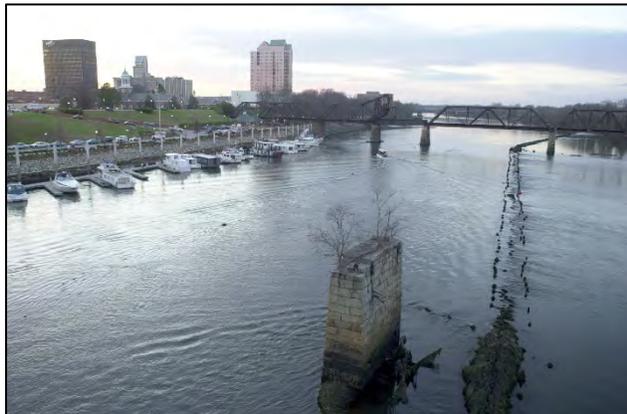


Figure 4: Underwater jetty protruding through water surface following river level drawdown.

mile down the middle of the river near the centers of the two cities. It was constructed by the Corps of Engineers prior to 1915 to divert the main flow of the river to the Georgia side to keep the docks at Augusta scoured out to prevent shoaling. This wall is constructed of timber piles, cribs, and rock. At the existing water levels this training wall is not a major impediment to navigation and recreational use, but at lower stages of the pool the wall becomes a hazard to navigation and at the lowest level it even protrudes from the surface of the water. It will effectively narrow the useable width of the river to about half its present width, right in the middle of town where boat traffic is the greatest and where water sporting events have regularly occurred. If water levels are to be lowered, the Corps should include in the project mitigation measures for the wall not merely by “avoidance,” as stated in the Draft Report¹², including selective demolition to lower the top elevation so that vessels might safely pass over in the future, as well as allowances in the project costs.

D. Water Level Lowering.

The Draft Report and the Corps’s blogposts are very confusing for the reviewers and for the public to comprehend and analyze in that they use several different units, types, terminology, and descriptors for level measurements in various places: feet, inches, elevations, depths, ranges, impacts, today, existing, etc.

Particularly confusing is the mixing of elevation figures from two different surveying datums. The original design of the NSBLD contemplated a range of normal operating water levels between Elev. 114.5 and Elev. 115.0 (NGVD 1929), and a review of recent

¹² Draft Report, Section 3.6.9.3 Future Conditions with Alternatives 2-3, 2-6a-d, and 2-8, p 90.

USGS water stage records show that the Corps has actually operated the dam at an average normal level of 115.0. Yet, inexplicably, they have used Elev. 114.0 as the existing conditions when comparing alternatives, even though the real existing conditions show Elev. 115 to be the normal pool level on a nearly every day basis. This 1.0-foot difference in the initial base line data skews all of the comparisons in the Draft Report, which must be corrected and reissued so that truthful comparisons can be made.

Moreover, the Corps used an alleged, so-called “range” of operation of existing conditions of Elev. 112 to 115, which is far from what the Corps operations personnel are proven by gauge records to use actually day by day.

The following table summarizes the water levels from the Draft Report and from other sources as shown in the footnotes below it. While it may be used to make any number of comparisons that the reader and other reviewers may wish to study, the most salient issue is that the Corps used the low side of the current normal operating level as the “Existing” conditions at the NSBLD to compare its hydraulic models for the alternatives, which is one (1) foot lower than the actual operating levels reported by USGS.

Description	Water Elevations				Notes
	Lock & Dam ^a		Fifth Street Bridge ^b		
Location Datum	NGVD 1929	NAVD 1988	NGVD 1929	NAVD 1988	Assumed difference = 0.8'
Normal pool per original design ^c	115.0 - 114.5	114.2 - 113.7	115 N/A	114.2 N/A	
Corps's current operations					
"Normal" ^d	114.0 -114.5	113.2 - 113.7	115.1	114.3	
Range ^e	112.0 - 115.3	111.2 - 114.2	N/A	N/A	
Usual Levels (non-flood) per USGS gauges ^f	115.0 ^g	114.3	115.0	114.3 ^h	Approximate Water Year 2018 year-long medians, by inspection
Alternative Simulations Q= 8000 cfs from HEC-RAS Summary ⁱ					Elevations Produced from Questioned Model
Existing	114.0	113.2	116.1	115.3	Probably wrong
No Action Alt	114.0	113.2	116.1	115.3	Probably wrong
Alt 1-1	113.9	113.1	116.0	115.2	Probably wrong
Alt 2-6a	112.6	111.8	115.4	114.6	Probably wrong
Alt 2-6d	111.7	110.9	115.0	114.2	Inconsistent with observations 2/15/2019
Actual Elevations February 15, 2019	111.08	110.28 ^j	112.03	111.23 ^k	Flow rate at NSBLD was 7,270 cfs, near 8,000 cfs.
Desired by Cities and Counties ^l	N/A	N/A	115.2	114.5	

Note: The actual instantaneous flow rates in the Savannah River on the morning of February 15, 2019, were 7,270 cfs at NSBLD and 5,422 cfs at Augusta Canal Diversion Dam

References:

1. Lock and Dam United States Geological Survey (USGS) gauge is located just upstream. Datum is NGVD 1929.

2. Fifth Street USGS gauge is located on first pier from Georgia side. Datum for the recording gauge is NAVD 1988. Zero of the recording gauge is 100.00. Note that the datum for staff gauge is NGVD 1929. Zero of the staff gauge (and previous recording records) is Elevation 102.06. Verified by field surveys by Cranston Engineering Group, P.C.
3. Construction plans: *Rehabilitation of Gates and Piers, New Savannah Bluff Lock and Dam*, Plate S-500, 12 March 1995; and Corps of Engineers, U. S. Army, Savannah, Georgia, District, *Special Flood Hazard Information Report, Savannah River, Augusta, Georgia*, August 1971, p. 7.
4. Draft Report, Appendix A, p. A-19. USGS records for Water Year 2018 contradict the Corps's assertion of operating range.
5. Draft Report, 2.2.2. Hydrology and Floodplains, p. 18.
6. Inspection of records of USGS gauge records for Water Year 2018 (October 1, 2017—September 30, 2018).
7. Gauge 02196999 at New Savannah Bluff Lock and Dam.
8. Recording Gauge 02126670 at Jefferson Davis (Fifth Street) Bridge.
9. Draft Report, Appendix A, Table 8. Summary of HEC-RAS Results, p. A-41.
10. Gauge 02196999 at New Savannah Bluff Lock and Dam.
11. Recording Gauge 02126670 at Jefferson Davis (Fifth Street) Bridge. Verified by actual field survey by Cranston Engineering Group, P.C. at Elev. 111.20 (NVGD 1988) on February 15, 2019 at 11:13 am EDT.
12. Resolutions by Augusta, North Augusta, Aiken County, and Columbia County.

The recommended alternative and others that include a full-river width rock ramp as presented in the Draft Report will result in more rapid and frequent fluctuations in the level of the pool. This is due to the elimination of the large adjustable hydraulic gates in the NSBLD. No analysis or criteria for the evaluation of the increase in variability was presented in the Draft Report. A maximum drawdown rate of 0.5 feet per day was given in the Operation Plan for Fixed Weir Pool Simulation, Savannah Harbor Expansion Project Fish Passage at New Savannah Bluff Lock and Dam, January 25, 2019; however, failure of a wall occurred during the drawdown and no application or evaluation of this criteria for future conditions was provided. Evaluation, analysis, and selection of alternatives should include impacts related to more frequent and pronounced impacts from rapidly varying pool levels – such as those that will occur in the recommended alternative.

E. Flooding

The Draft Report gives only minimal consideration to the threat of flooding from the regulatory 100-year flood and the 500-year flood, as required by rules of the Federal Emergency Management Agency (FEMA). It fails to demonstrate that any of the alternatives will result in a “no-rise” condition, a paramount issue and potential threat to the communities, in violation of both the WIIN Act itself and of FEMA regulations. In fact, the Draft Report explicitly casts doubt over whether a “no-rise” situation is even possible. The Corps must retract and revise the Draft Report to demonstrate that the project will not cause a rise in the FEMA 100-year Floodplain, nor any change in the FEMA-designated Floodway.

In addition, the Draft Report inadequately addresses flooding from the more frequent (lower flow) floods, along with the physical, economic, and public safety threats resulting from those events, especially within residential and business areas along the river.

The WIIN Act mandates that the project maintain specific minimum water levels, while the FEMA regulations require the maximum water levels from the designated “base flood” (the one-percent-exceedance-chance flood, or 100-year flood) not be raised: i.e. a “no-rise” condition. These oxymoronic boundaries create an engineering problem that is nearly impossible to solve with a fixed weir structure, regardless of its crest elevation. Because of the inability of the Corps to design either of the 2015 “Value Engineering” weir alternatives to meet these criteria, they had to discard both of them as viable choices. These were the Corps’s conceptual ideas that led to the establishment of the specific options in WIIN Act in the first place. In the end Corps has had to abandon both of their “good ideas,” because they are both entirely impractical solutions as to handling flows. In short, the problem is that no rock weir can be removed from the channel in times of flood to make way for large flows, as can the existing gates of the Lock and Dam, which can and regularly are lifted high above the waters below.

The only way to maintain the pool, preserve the NSBLD Park, and also handle the floods is to provide a dedicated way for flood waters to pass the New Savannah Bluff at or below the stages that currently exist. The Corps’s alternatives in the Draft Report all handle flood waters around the weir in one way or another: via a “runaround spillway” (similar to a farm pond) in some, a flood channel with new gates in one, and through the existing gates, retained as in Alternative 1-1. In fact, Alternative 1-1 is the only choice which actually solves the engineering problem. And, with modifications, this basic plan can do so without adding additional risks at the Lock and Dam site or within the upstream pool.

The Draft Report describes the FEMA “existing model,” (presumably the “effective” one upon which the current official flood plain maps are based) as having been originally developed with the program HEC-2 in November of 1994. The 1994 model was then set up by the Corps and is still the effective FEMA model.¹³ It has its roots even earlier than that, beginning with the Corps’s own work in and prior to 1971, when they published a special flood hazard report on the Savannah River. The original source of the cross-sectional data for this model is the “Savannah River below Augusta Annual Survey,” and available contour maps for overbank elevations.¹⁴ The USGS quadrangle maps with contour intervals of ten (10) feet are the most likely source, which are imprecise compared to the sophisticated LIDAR and similar sources, such as those the Corps used for the new two-dimensional (2D) modelling of the various alternatives in the Draft Report.

The Corps abandoned the FEMA profiles in favor of more precise modern methodology in its newer HEC-RAS programs for one-dimensional (1D) and two-dimensional (2D) flows for their analysis purposes, which should produce more precise results. However, the Corps kept the old FEMA work for future use in permitting, “if possible.” The Draft Report states the following about the FEMA effective model:

13 Email: Chris Budd (AtkinsGlobal) to Tom Robertson (Cranston Engineering Group, P.C.), 4/9/19: “The effective model for the Savannah River is still the 1995 [sic] study by Corps.”

14 Corps of Engineers, U. S. Army, Savannah, Georgia, District, *Special Flood Hazard Information Report, Savannah River, Augusta, Georgia*, August 1971, passim.

“The FEMA existing model was assumed to be reasonably accurate, and no attempt was made to further calibrate the model to observed data. This was also to preserve model continuity to pursue a no-rise certificate, if possible.”¹⁵ (Emphasis added.)

The construction of a fixed weir will also cause increased frequency of flooding for lesser floods than the 100-year. For example, the Draft Report states that Alternative 2-6a “may cause a minor increase in flooding depth at dozens of parcels for the 50% AEP [annual exceedance probability, or 2-year] flood event.” This is very close to the “mean annual flood,” the flood which would occur on the average once every year. What the Draft Report also fails to say is that the flooding depth of this and other floods will occur more often, because the gates will not be available to re-regulate the inflows.

The Draft Report, includes inundation maps for the 50% AEP flood for Alternative 2-6a, which shows rises of three (3) inches to greater than twelve (12) inches.¹⁶ While the rises occur over the whole flood plain, such rises will likely cause access problems for a number of residences and businesses at different locations, including along Gum Swamp Road, the un-named access road to the farms along the dead river just downstream of the Sandbar Ferry Road, the Mason sod farm buildings, and several locations within the River North neighborhood, to name a few.

F. Water Supply Concerns

In analyzing the workability of the City of Augusta’s raw water pumping station under the various alternatives, the Corps included only the existing conditions of water withdrawal rates at the N. Max Hicks Plant Raw Water Intake, without considering ultimate build-out capacity, which is much larger. Moreover, the February drawdown showed that the Corps’s hydraulic model did not predict the water surface elevations properly. Therefore, the City of Augusta has grave doubts about the future effectiveness of this critically important raw water pumping station, which supplies drinking water to a large part of the City’s citizens.

The N. Max Hicks Water Treatment Plant (NMHWTP) is a public water system for municipal water supply owned, operated and constructed by the Augusta Utilities Department (“Augusta Utilities”). The plant was constructed with public funds and is authorized pursuant to the Federal Safe Drinking Water Act, 42 U.S.C. 300f *et seq.* and Georgia Water Resources Act, O.C.G.A. § 12-5-31.

The NMHWTP is currently permitted to treat 15 Mgal/d, and the planned site capacity at this location is 60 Mgal/d. The plant will be expanded in 15 Mgal/d increments as system demands increase.

The hydraulic analysis of the raw water pumping system included modeling at three flow rates, the highest being 19.5 Mgal/d. This flow was chosen as it corresponds to the pumping capacity of the existing pumps. The Draft Report acknowledges, however, that the existing station is capable of pumping 30 Mgal/d with the changeout of existing pumps and addition of a fifth pump. The piping is already in place for the addition of a fifth pump.

15 Draft Report, Appendix A,2.1.2. Geometry Modifications, p. A-5.

16 Draft Report, Appendix A, Attachment 2.

When the Corp's consultant modeled the raw water system to evaluate the impact of water surface elevations corresponding to Option 2-6d, they deemed it prudent to include vacuum assisted priming for the raw water pumps, even though they determined the system would be marginally acceptable without them. The system does not currently have vacuum assisted priming, and its construction is estimated at \$228,000 by the Corps.

Augusta Utilities is concerned about the following deficiencies in the Corps's analysis:

- The highest flow rate modeled was 19.5 Mgal/d and the modeling indicated the existing system required modification.
- Actual constructed pump station capacity (with pump changeout) is 30 Mgal/d. No analysis was provided for this condition.
- The river intake system, typically the most expensive part of the raw water system, is capable of delivering 60 Mgal/d at current water surface elevations. A significantly lower water surface would likely require extensive modification to the river intake system. As the intake and pumping system was designed with current water surface elevation parameters, at this time it is not known whether the intake and pumping system will be able to meet original design criteria with the changes proposed by the Corps in the Draft Report.
- All the hydraulic analyses of Augusta's raw water system were predicated on the Corps's modeling of water surface elevations for various alternatives. The drawdown that occurred the week of February 11, 2019 proved that the Corps's modeling overstated water surface elevations. Actual water surface elevations will be significantly lower than what is predicted by the Corps's modeling.

G. Recreation and Economics

The Cities of Augusta and North Augusta find that impacts on recreational uses of the river are not adequately identified, evaluated, or mitigated within the Draft Report. The majority of in-river recreational uses upstream of the NSBLD were not identified or evaluated in the analysis of the presented alternatives. While an effort to evaluate some of the impact on some of the upstream docks was undertaken, this narrow focus does not include most of the current recreational uses and was based upon inaccurate modeling that grossly underestimated the degree of lowering predicted by the Corps's hydraulic modeling.

Recreational considerations in the Corps's evaluation of the alternatives appear to have only included physical impacts to a select group of docks resulting from reductions in water surface elevations, with no consideration of the cost consequences. However, other recreational uses and considerations including but not limited to those outlined below are significant and do not appear to have been adequately considered in the evaluation of the alternatives and (presumably) their formulation.

The Cities request that a much more complete inclusion of recreational uses and related economic impacts analysis be undertaken and used in the development and evaluation of alternatives.

The City of Augusta requests that river corridor planning efforts as outlined in the River Vision Plan be addressed in the development and evaluation of alternatives. This includes the development, refinement, and evaluation of alternatives to the US Army Corps of Engineers' (Corps) design for the New Savannah Bluff Lock and Dam (NSBLD), fish

passage, and adjacent NSBLD Park. The City requests that the NSBLD Park be maintained in area and elevation to keep it as a valued community amenity and maintain its rich history. Maintaining this park as such, strictly prohibits the proposed “floodplain bench” included in many of the presented alternatives including the Recommended Plan.

1. Recreation, Uses, and Economics not Adequately Considered.

Planning, design, and alternative evaluation should include issues such as: level of activity around the water’s edge both for current conditions and anticipated future users; frequency and range of flows within the recreational river; and potential consequences of accidentally falling into the water (low water and high-water conditions) and consequences of inadvertent navigation or entrainment in the rock ramp fish passage.

The use of the river in the greater Augusta area includes the pool from the shoals near the Augusta Canal intake to the NSBLD and continuing downstream through the lock. While not currently operational, the lock has been used recreationally by residents for many years.

Recreational uses in the upstream pool are highly reliant on the maintenance and stability of the water surface elevation currently provided by the NSBLD and its on-going operations. Recreational activities that Augustans currently enjoy on and along the banks of the river include: viewing, fishing, skiing, wake boarding and wake surfing, motor boating, rowing, kayaking, whitewater rafting at the shoals, long-term docking of house boats, and hosting of various water dependent events. Additionally, access to the water and water’s edge other than that related to use of docks is critical to these recreational uses. Access to the water’s edge will be made much more difficult as the increased variation will make the immediate area slippery and muddy and the banks will be steeper and/or higher above the waterline. This particularly impacts fishing - a critical component of everyday life for many Augustans and a significant recreational and economically important use of this reach of the river.

Identification and adequate consideration of the impacts to most all these activities and user groups was not evaluated in the Corps’s Draft Report and supporting alternative analysis. It is evident that lowering of the pool over a wide range of flows will negatively impact these activities. Depths will be reduced, useable surface area will be reduced, more obstacles will be exposed, and access to the water’s edge will be significantly inhibited. In addition to overall decrease in pool depths, variation of the water surface will occur much more frequently and additional negative impacts to most if not all these activities as well as bank stability, aesthetics, and maintenance will result. Increased variability in the water surface elevation was not considered in the development and evaluation of the alternatives as it relates to these activities, issues, and future river corridor planning.

Decreased depths and increased variability in the water surface elevations will negatively impact fishing, skiing, wake boarding and wake surfing, motor boating, and rowing, and operations of safety craft – particularly during the hosting of various water events. The only recreational metric applied to depth was 2 feet – and this was as it relates to accessing docks. This criterion is not appropriate for many if not all the activities listed above. Furthermore, the analysis, determination, and application of this forecast is not accurate, thorough, or appropriate. This is described below in the

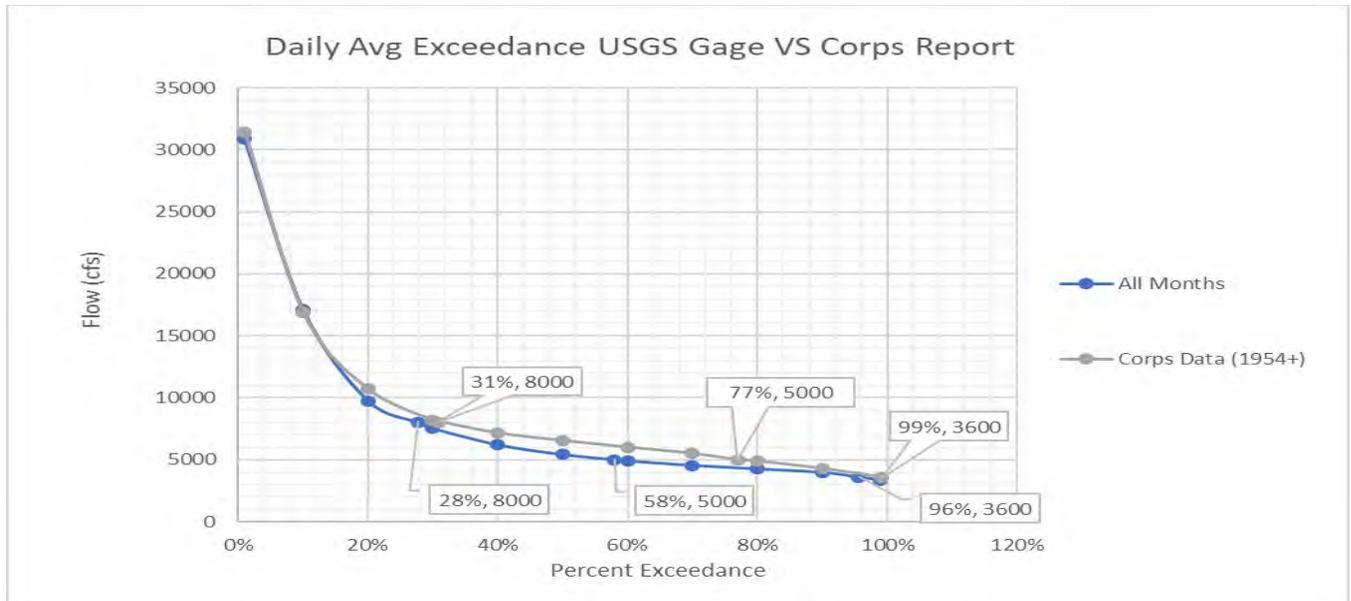
section entitled *Prediction on Water Surface Elevations and Decreased Depths*, in some of the Appendices, and elsewhere.

It is intuitive that decreased depth also results in increased velocities in the pool. This is also theoretically evident by the application of the equation $Q=VA$ or $V=Q/A$ or $V=Q/(d*w)$, where V is the velocity in the pool, Q is the flow in the river, and A is the cross-sectional area of the river, d is the average depth in the river, and w is the average or effective width at that depth. Increased velocities result in several safety issues including increases in the risk related to abrasion or impingement from being swept over or impinging upon various obstacles, lodged debris, rock or structure on the invert, and over the rock ramp fish passage as included in most of the alternatives presented by the Corps. This concern is heightened by a demonstrated safety issue – i.e. one that has already been exhibited. It has been reported that there have been injuries or drownings when people in pool have inadvertently gone over the existing dam. One such case in 2008 occurred when a woman died by going over the lock and dam on her jet ski. Designing features in a river with the objective to create low hazard conditions can help prevent accidents like these from occurring.

People that inadvertently fall in the river (exacerbated by worsened conditions along the water's edge resulting from more variation in pool elevations as described elsewhere) will have a higher tendency to be swept downstream and encounter more difficulties exiting the water. Consideration of these types of safety issues would impact many aspects of the design of the rock ramp including type, gradation, and size of rock; pool (recovery zone) spacing, widths between constrictions, etc. Sufficient detail, discussion, or analysis to evaluate these and other potential hazards is not discussed, included in alternative evaluation, or even presented.

2. Evaluated Flows and Frequency

As stated on page 49 of the Draft Report, flows used to evaluate project impacts (except to public water supplies) was 5,000 cfs. The “normal conditions” flow rate used in the descriptions of the presented Alternatives was 5,000 cfs. It is not exactly clear why this was chosen as no clear reasoning is given. As stated in the Draft Report and indicated on the figure below, flows that occur between 5,000 cfs and 3,600 cfs occur a noteworthy part of the time. Figure 7 of Appendix A of the Draft Report shows that flow in this range occurs about 25% of the time. Flows in this range occur more frequently during the several months in the summer, when recreational use is highest. Recreational uses, impacts on docks, etc. outlined herein occur a significant time during this flow range, and it is not justified to ignore them in the development, analysis, and selection of alternatives. Flows occurring in the range of 3,600 and 5,000 cfs should be included and evaluated in the development, presentation, evaluation, and selection of all alternatives.



3. Prediction on Water Surface Elevations and Decreased Depths

As further detailed elsewhere, the estimation on the decreases in depths presented by the Corps are inaccurate and insufficient. As decreased depths are more frequent and perhaps rapid fluctuations in depth negatively impact identified issues and recreational activities, the impacts have not been adequately determined.

Shortcomings in the prediction of depths include:

- The modeling used to estimate impacts to these docks is flawed and greatly underestimates the amount of the decrease in the pool elevations that would result for the provided alternatives. This was made apparent during the drawdowns and survey on February 15, 2019.
- Depths were evaluated at a river flow of 5,000 cfs. As presented above, this flow rate is not appropriate.
- Depths predicted and provided are based upon a bathymetric survey that the Corps conducted in January 2018. It is not clear in the Draft Report that the level of detail of this study is sufficient to evaluate the impact of lowering the water surface and increasing the variability (particularly during lower flows) is adequate to evaluate these recreational activities. Since most of these activities were not considered, concern as to adequacy of the bathymetry used in the development, analysis, and evaluation of the alternatives is justified.
- Evaluation of the increase in frequency and degree of variations in the water surface was not provided. Pool elevations and resulting depths that vary more often and more drastically over time further decrease the recreational value of the pool.
- The decrease in depths is more severe than predicted in the Draft Report because the historical record of the stream gauge data indicates higher water surface elevations than used in the Draft Report for existing conditions.

- No evaluation of the increased deposition due to removal of the gates was provided. (Qualitative opinion was presented supporting a conclusion of no significant impact, however based upon extensive multi-dimensional sediment modeling efforts on a recent project on another river with a sediment-trapping upstream reservoir, the Cities do not accept this foregone conclusion with no supporting analysis.

4. Impacts to Docks

Most of the analysis and results as provided on all but the first page of Appendix G are not accurate nor representative of the impacts that would result with implementation of any of the proposed alternatives. Moreover, the analyses consider the No Action Alternative as the base line condition; when, in fact, the existing water levels are higher. Consideration of the impact for adjacent land owners to install new docks was not made, nor were the costs for these significant changes accounted for.

5. Impacts to Hosting Special Events

The Draft Report does identify the following Special Events that are or have recently been hosted in or along the Savannah River:

- The Ironman 70.3
- Head of the South Regatta
- The Augusta Southern Nationals
- Southeast Masters Rowing regionals

The Augusta Convention and Visitors Bureau reports that these events have a combined economic impact of \$11.5 million.

The Corps's Draft Report states that:

“The Savannah River Basin Water Control Manual would be updated to increase flows from J. Strom Thurmond to meet water surface elevations required for the special events except when in drought contingency operations and flood conditions. As a result, the Ironman 70.3 and Head of the South Regatta would not be adversely impacted by any of the alternatives outside of periods of drought and flood.”

However, the different alternatives would require greatly differing releases in flow and these releases are much more (due to the hydraulic modeling underestimation of water surface elevation) than would have been anticipated. Consideration of these issues would impact related costs and increase the probability that the events could not be held due to insufficient water supply. Furthermore, determination of the release rates, costs for these releases, and prediction of the frequency when these events could not be held were not provided in the Draft Report.

Also, this operation could increase the flow rate which would increase the overall downstream velocities, and change the velocities across the event cross-section, changing the watercourse from lake-like to riverine. This would negatively impact all races or timed events. For example, it would give an advantage here and a disadvantage there, depending upon which “lane” a competitor might be assigned to. The predicted increase in downstream velocities were not provided and could increase a variety of safety issues.

6. Impacts to Larger Boats & Commercial Operations

Patriot Boat Tours operates a larger pontoon boat. There may not end up being enough depth at the main tour boat dock at Tenth Street to accommodate tour vessels. There may be additional commercial or private operations of larger boats that would draw more water or otherwise be reliant upon a deeper pool. These were not identified in the Draft Report.



Figure 5: Princess Augusta

7. Impacts to the NSBLD Park

Alternatives that include excavation of the Park for the “floodplain bench” or overflow channel including the recommended 2-6d alternative have a significant negative impact on the NSBLD Park. These alternatives would effectively render the park useless or nearly useless and it would become a maintenance liability. This park has a historically significant history and is utilized by many residents. These impacts were not considered as part of the Draft Report, including Appendix G - Recreation. Inclusion of these negative impacts must be considered in the development, evaluation, and selection of the alternatives.

In 1915 the Augusta Levee was constructed to control flooding in downtown Augusta, Georgia, and expanded in 1936. Initially, the Levee greatly restricted the public’s access to Augusta’s riverfront from downtown to the mouth of Butler Creek, but with the 1937 completion of the NSBLD, the Corps’s public Park provided direct access to the Savannah River.

The Corps’s creation of this public space allowed the locals a place to interact with the river for these many decades. It has been a point of access for fishing, boat launching, and a gathering place for the entire community. Indeed, its importance to the City, especially those who reside in South Augusta cannot be understated.

A key historical component to the inclusivity of the Park showed itself during the 1950s-1960s when the majority of the City of Augusta was segregated, but the Park was not. It has served as a gathering place for all of the community’s citizens for over 65 years. Its pavilions have provided the location for hundreds, if not thousands, of family reunions, birthday parties, and civic meetings.

The NSBLD Park has been one of the main access points for bank fishing since at least the early 1950s, and maintaining that access is imperative to the surrounding community to foster inclusivity and prevent gentrification. Many of the local citizens regularly fish along the river bank in the park, which is an essential element to their daily lives. In short, the park is a significant cultural feature of Augusta.

The NSBLD Park sits on the confluence of two emerging bike/nature/walking trails whose development is ongoing. The levee, which starts above the remaining shoals 17 miles upstream from the Park, creates an elevated path and contiguous trail through downtown Augusta ending at the Park. Over three-quarters of this levee has been

converted into a trail with remaining miles slated for conversion in the next few years. The Butler Creek trail starts at Lombard Mill Pond near Fort Gordon Gate 5 and running the length of the creek ending at the NSBLD park. That trail is 20% completed and is slated to be finished in coming years.

The Corp has recognized a portion of the historic importance and sense of place the Park has provided. As stated in the Draft Report:

“The NSBLD Park provides visitors a place to enjoy the outdoors by providing a place to fish, boat, and have picnics. The project area is in an undeveloped area on the Georgia side of the project surrounded by trees and a couple of open field areas for recreational opportunities and looks out to privately-owned undeveloped farmland on the South Carolina side with the Savannah River in between. The historic Lock and Dam structure is also a unique feature people can visit while visiting the area.”

The Draft Report however did not place economic value or considerations of quality of life on the use of the park or the significant history of the park to Augusta in their development, analysis, economic analysis, and selection of the presented alternatives. The NSBLD Park is an amenity that should remain with the community! Future plans must embrace the Parks importance and the benefit it has provided must be recognized and maintained for future generations.

The Park is decimated under the Recommended Alternative and other alternatives that include a “floodplain bench” or over-flow channel. These alternatives effectively render the park useless or nearly useless and it would become a maintenance liability.

As an example, Alternative 2-6d - Fixed Weir w/ Dry Floodplain would have a significant impact on the Park as it includes an excavated floodplain bench cut into almost the entire park to pass higher flows, thereby increasing the frequency of flooding, and impacting the uses, functioning, and safety of users.

The Park is rendered useless in the alternatives having the excavated floodplain bench for a number of reasons. Shade trees, landscaping, structures would likely not be located in the floodplain bench because of unsustainable maintenance efforts and negative impacts on flood conveyance. One of the most significant reasons is due to the frequency of flooding and resulting safety, wet and muddy conditions. Flooding can come from at least three separate sources:

- a. Flooding from the adjacent wetlands, Butler Creek, and flooded areas tributary to the floodplain bench – that is overland and ground water flow from these upland areas to the river would be intercepted by the floodplain bench. This lowered area (due to increased head) would increase these flows and the frequency at which they occur.
- b. Flooding from the downstream river commonly referred to as “tailwater” or “backwater.” The Figure entitled Tailwater, below, is based upon the hydraulic modeling by the Corps. The Draft Report states that the floodplain bench would be lowered to elevation 110, however inspection of the HEC-RAS model indicates a much lower elevation of the bench of about 107.7. The existing elevation of the Park is about 117, which corresponds to a flow of over 35,000 cfs or about 0.5% of the time. The 110 elevation corresponds to a flow of about 24,500 cfs and a frequency of about 4% of the time. The 107.7 park elevation (from the model) occurs at a flow of about 18,500 or 8.5% of the time.

In other words, the Park will flood due to the tailwater about 8 times more frequently using the elevation stated in the Draft Report, or over 16 times more frequently based upon the floodplain bench elevation in the hydraulic model.

Either of these estimates in the increase in flooding frequency is very significant. For comparison, various cities and drainage districts with extensive experience of maintaining and operating trails, recreational facilities, and river front park amenities have criteria that sets the elevation of the facilities at the 10-year event – in this case about 60,000 cfs. The lower extreme in maintaining recreational facilities such as parks, trails, etc. is often the 2-year event or 33,000 cfs. The existing elevation of the Park is on the lower end of this range, and it is therefore critical not to increase frequency the Park area gets flooded. The modeled elevation of the floodplain bench floods at 18,500 cfs which is well below the 2-year event and floods about 8.5% of time which results in a frequency that is not practical to maintain for recreational park related activities due to the frequent wet and muddy conditions, accumulation of debris and sediments, and safety concerns.

The difference in the elevation of the floodplain bench stated in the Draft Report of 110 and the modeled bench elevation of 107.7 is a significant discrepancy which would impact the development and evaluation of alternatives that account for impacts to this Park.

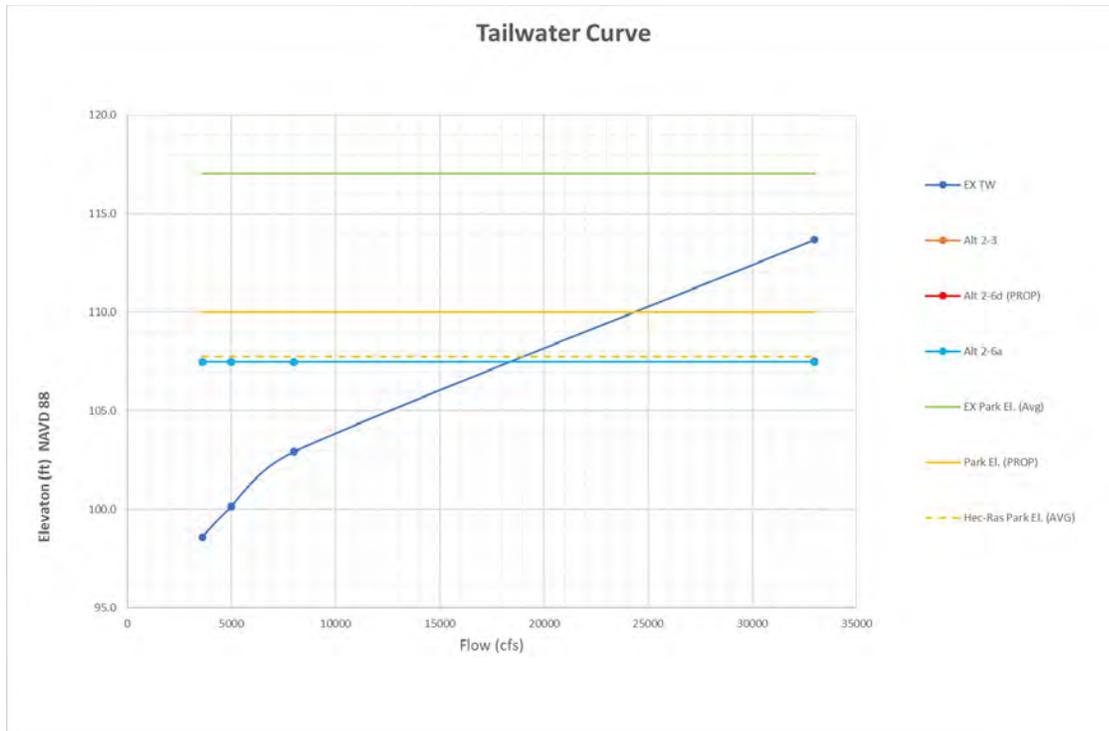


Figure 6

- c. The third source of flooding that the Park or floodplain bench is from river water upstream of the rock ramp flow essentially around the (crest) of the rock ramp. This type of flooding is more damaging and dangerous than the other two types because of the velocity of the flow and scour potential. Based upon hydraulic data in the Draft Report, the floodplain bench in Alternative 2-3 would flood almost all the time and would flood about 70% of the time in the recommended Alternative 2-6d. Obviously, this would be the predominant source of water in the “Park” or floodplain bench.

The term “floodplain bench” does not reflect the morphologic or any other reasonable interpretation or definition of how this impacted area of the Park would function. A floodplain bench typically is elevated at flood elevation at bankfull conditions. Bankfull conditions usually occurs between the 1-year and 2-year event or about 16,000 cfs to 33,000 cfs. This range is much higher than what results in the Alternatives with a floodplain bench. The Draft Report states that the “the bench would be grassed or rock lined to prevent erosion. Either of these surfaces in these wet conditions would not be conducive to recreational use. Given these conditions including the aesthetics and (lack) of recreational usage, more appropriate terms for the “floodplain bench” are a spillway or overflow channel.

The floodplain bench renders most of the park unusable. The flood plain bench hinders access to the fishing areas for residents, removes the open field that is used by residents for special gatherings and severely limits access to the river. These alternatives do not evaluate the future recreational use of the park. These alternatives eliminate the historic uses of the Park outlined above.

All the alternatives presented “cut” or encroach upon the Park and reduce its size. Alternative development, evaluation, and selection should preserve or effectively mitigate area removed from the Park.

It is readily apparent that the floodplain bench would be totally unusable for most any recreational activity, would likely look and act like a spillway or channel, be rock-lined, and/or become a maintenance nightmare. Alternatives that increase the flooding of the Park should not be considered further. Only Alternative 1-1 effectively maintains the Park elevation and flooding frequency thereby allowing the potential to preserve its recreational and historical significance to Augustans.

8. Summary - Recreation, Uses, and Economics not Adequately Considered.

Appropriate consideration and inclusion of all recreational uses and their economic impact would influence the development, evaluation, and selection of the alternatives. These efforts should be based upon accurate predictions in water surface elevations and evaluation of the frequency of the variations in the water surface elevations.

Based upon information and analysis provided in the Draft Report, only Alternative 1-1 should be considered as it comes close to adequately addressing the issues and impacts outlined above. As presented, Alternative 1-1 lowers the pool elevation and decreases depths, however it may be possible to adapt Alternative 1-1 to meet the historic pool elevations. This can only be ascertained once the hydraulic model is calibrated and validated so it can be reliably used to assess the very important prediction and conclusions regarding the prediction of the pool elevations.

9. River Vision Plan for the Savannah River

Development, analysis, evaluation and selection of alternatives should include and support this planning effort and the economic and quality of life impacts it will provide. Alternatives at the NSBLD need to address pool elevations, safety, and the intended uses and development of the NSBLD Park, trails, and recreational uses. Only Alternative 1-1 currently comes close to integrating with the objectives and requirements reflected in this planning document.

The City of Augusta has undertaken a *River Vision Plan* for the Savannah River which extends from downstream of the New Savannah Bluff Lock and Dam (NSBLD) through Augusta and the natural shoals to Thurmond Lake. (A copy of the plan is presented in Appendix F.) In addition to creating highly recreational destination-oriented whitewater venues at the NSBLD and two other dam sites, the plan would open over 36 miles of a water trail starting from Thurmond Lake. The culmination of this water trail would be at the proposed whitewater venue integrated into NSBLD Park. The plan shown in the following figure, includes other sites with programming and activation elements focused on publicly owned property along the river within the city limits of Augusta. Identified activities and venues include a whitewater course, ropes course, zipline, water taxi, river cruise, fireworks display, fishing access, boat access, event pavilion, gathering spaces, destination playground, trails, outdoor markets, disc golf course, and historic markers. These rely on the pool created by NSBLD, recreational passage and low-hazard conditions at and around the NSBLD, and preservation/integration of the park north of the NSBLD – referred to here as

NSBLD Park. These are further described in the *River Vision Plan* for the Savannah River for the City of Augusta.

This plan includes an outdoor adventure sports park including a whitewater recreation bypass in conjunction with the removal of NSBLD. Inclusion of a whitewater recreational venue would create a major boating attraction drawing visitors throughout the region and shape the City's image. While somewhat different than the venue in Columbus, Georgia (rated as One of the Top Twelve Man-Made Adventures in the World by USA Today), it alone could create a similar economic impact and improvement in quality of life. Combined with other key features in the overall River Vision Plan for the Savannah River, the economic impact would further increase the economic and recreational impact of the proposed NSBLD Adventure Park. This design would incorporate fish passage, whitewater features, and other amenities and ideas suggested by the community. The Park is to be a place for picnics, family and group events, fishing, and outdoor and river recreation, as it has been since its inception.



Figure 7 River recreation plan from Thurmond Dam to New Savannah Bluff Lock and Dam.:

Economic impacts related to this plan are significant. The recreational potential of the proposed amenities and improvements outlined in this planning document are judged to be greater than the extremely successful recreation and river restoration project constructed in Columbus Georgia on the Chattahoochee River. The Savannah River has more flow, the recreational reach is much longer, and this reach is more accessible to densely populated areas. Economic impacts are further discussed in the memorandum, "Economic and Quality of Life Impacts Related to the Proposed Savannah

River Recreational Improvements,” which is included as a part of the *River Vision Plan* in Appendix F.

10. Integration of the NSBLD Alternatives with Upstream Planning

Issues related to the elevation of the pool outlined in the existing recreational uses section above are heightened by the far-reaching River Vision Plan.

Planning, design, and alternative evaluation considerations should consider issues such as: level of activity around the water’s edge both for current conditions and anticipated future users; frequency and range of flows within the recreational river; and potential consequences of accidentally falling into the water (low water and high-water conditions). More specific issues to address include but are not limited to the fish passage, piers or mid-stream obstacles, all types of bank armoring, woody vegetation, debris and debris accumulation, etc.

It has been reported that there have been drowning accidents resulting by craft being swept over the dam. Additionally, it is highly likely that people will be drawn to the proposed in-channel rock ramp fish passage. Given the history and future interaction with recreators, public safety must be a primary design objective and considered in the development and subsequent evaluation of the alternatives. Inclusion of a whitewater bypass course into the New Savannah Bluff Lock and Dam Park is an important element in addressing safety concerns related to upstream and local river recreational use. Inclusion of a whitewater bypass is mostly independent of the various Alternatives for the NSBLD presented by the Corps.

11. Integration of the NSBLD Alternatives with the Proposed NSBLD Park

The presented alternatives do not consider future recreational use of the NSBLD Park. The citizens of Augusta would like the opportunity to utilize and enhance the Park and turn it into a community space for all ages to experience the river and the surrounding greenspace. The City of Augusta has funded the *River Vision Plan*, which includes the park as a future outdoor recreational hub, complete with trails, climbing opportunities, zip lines and even a whitewater course. The vision for the park includes additional programming for new music venues, community events and food truck opportunities. In short, the future recreational hub envisioned by the study paid for by Augusta was not considered by the Corps.

The overarching goals of planning and development of alternatives create connectivity among a growing metropolitan area, and to provide opportunities for enhanced recreation and appreciation of our natural resources in ways that will contribute to improving the economy, pride, and quality of life for locals and visitors. There are additional potential projects that could tie into the future recreational hub at NSBLD, creating a regional recreational corridor that begins at the Augusta Shoals upstream and ends at the NSBLD adventure park. This would be the first of its kind in the nation and have compounding positive economic impacts for the region.

12. Fishing

Fishing is a critical component of everyday life for Augustans that live near the New Savannah Bluff Lock and Dam Park. People fish at the landside of the lock, using the ready access to and amenities in the Park. Keeping the Park available to the public,

along with safe access for fishing should be considered and weigh heavily in the evaluation of recreational uses. Fishing however does not appear to be included in the development or evaluation of the presented alternatives. An alternative that keeps the Park available to the public, along with safe access for fishing is essential. Alternatives that remove or diminish the Park are unacceptable.

13. Criteria for Recreational Value for the Park

- Maintaining the current pool elevation
- Keeping the park intact with opportunity for enhancements
- Access points to the river for fishing, boating and other in-river recreational activities
- Improved safety and navigability of the river
- Connectivity between the Park and nearby trails (Levee Trail and Greenway systems)
- Recognition as a local historical landmark

14. Integration with the Whitewater Passage and NSBLD Alternatives

Low-hazard passage of recreational whitewater craft through or around the rock ramp or existing lock and dam should be considered in the development, refinement, and evaluation of the alternatives.

Passage of boats around the NSBLD has historically been provided by the lock. This is evidenced in a 2014 article written by the CORPS, where it was noted that the city operated the lock a few dozen times a year for recreational boating. Although the whitewater passage is of a different type, it would mitigate the economic and recreational loss associated in all the presented alternatives with the elimination of the lock.

The recreational and regional economic importance of providing whitewater passage at the NSBLD is further increased as outlined in *River Vision Plan*. With the completion of key elements of this plan, a navigable water trail of 36 miles in length would be created with the whitewater bypass at the NSBLD being a vital part of that plan.

There are several different approaches to providing passage. One approach would be to design the rock ramp to be low-hazard, thereby providing passage within the rock ramp. This was not selected in the *River Vision Plan for the Savannah River for the City of Augusta*; however, if complexities arise with a bypass configuration, a rock ramp designed to be low-hazard to recreational users or inadvertent swimmers should be considered.

While some type of recreational or safety oriented navigational whitewater bypass could likely be integrated into the presented alternatives, the practicality to integrate a recreational whitewater venue of national caliber with broad economic and quality of

life improvements with this project will depend (in part) upon the alternative selected and consideration of the recreational uses outlined above.

Alternative 1-1 would readily support a wide range of options for inclusion of a major boating attraction drawing visitor throughout the region and shape the City's image as described in our report and previous presentations. Note that Alternative 1-1 is included in the figure showing the whitewater venue in the *River Vision Plan*.

A whitewater bypass may be able to be integrated into Alternatives with an excavated floodplain bench or in Alternative 2-8. However, the primary participants at this type of venue are spectators and the floodplain bench would greatly inhibit viewing and access due to frequent flooding and lower ground elevations. As noted elsewhere, the Recommended Plan and other alternatives with a floodplain bench would virtually eliminate the recreational value of the remainder of the park within the footprint of the floodplain bench.

H. Impacts and Costs for Temporary Works During Construction.

The Draft Report does not identify temporary structures needed to implement any of the alternatives, nor does it outline a plan for the construction sequencing, dewatering and water level maintenance or control. These efforts have significant cost and physical effects, and additional analyses are needed to develop, analyze, cost, evaluate and select a recommended plan.

Significant structures, such as coffer dams and divider berms will be needed during construction, possibly as tall or taller than the existing dam. Large bypass channels and/or widening of the river adjacent to the rock ramp will also likely need to be constructed around the proposed rock ramp dam through the NSBLD Park and along the south bank to convey the large and continuous flows during construction. The costs and environmental impacts and impacts created by mitigation measures will be large. There will be disturbances to the banks, the park, large volumes of upstream sediments to handle. Extensive pumping may be needed, settling ponds to mitigate water quality impacts are typically required, and disturbances related to the large coffer dams

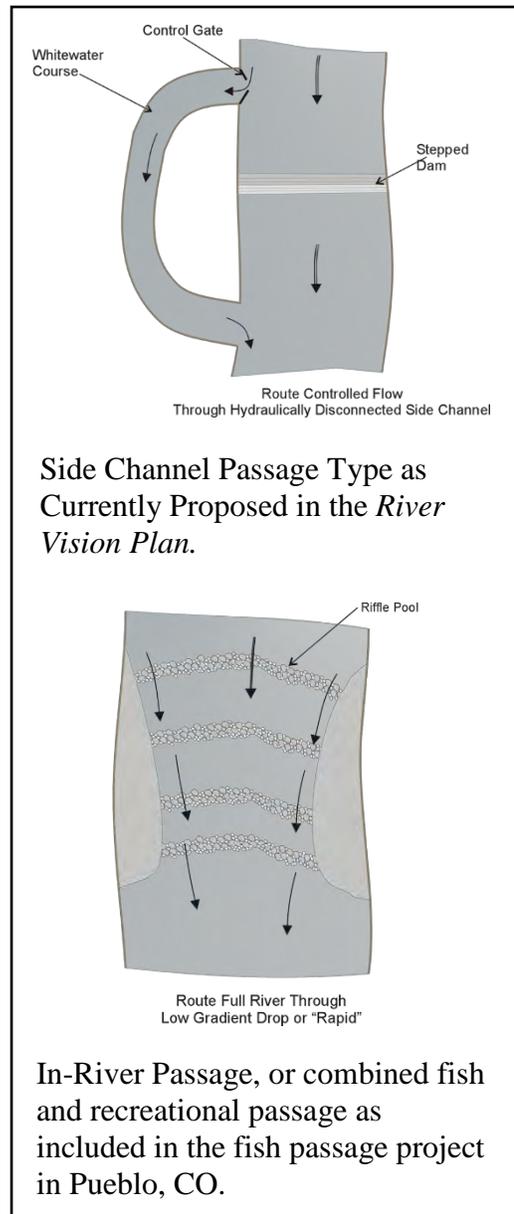


Figure 8: Schematic Types of Recreational Passage

constructed in flowing water will occur. Given the large river with continually flowing conditions, construction efforts and costs related to these water control and dewatering efforts will likely cost as much or more than the construction of the rock ramp. In other words, the cost for these efforts will likely be much greater than the cost of the rock ramp (as identified) if it and its support substructure were constructed in a field or temporarily dried riverbed. This has been the case in many rock structures built in rivers, such as in Columbus, Georgia, which did not have nearly the amount of continuous flow to deal with.

I. Real Estate

The Cities and County are concerned about the effects of the project on the real estate that fronts on and lies near the seventeen-mile-long Lock and Dam pool. There are upward of 446 individual privately-owned parcels of land fronting on the pool, to say nothing of the nearby parcels benefitting from proximity to and views of the water. The diminished value of the waterfront properties and the hindrance effect on ongoing and planned redevelopment projects caused by the lowering of the pool must be considered a cost of the project and compensation, paid. The Draft Report ignores these effects and is thus deficient. It must be withdrawn, corrected, and reissued for public comment.

The Corps arbitrarily omitted considering all alternatives by omitting any fish passage or construction on the South Carolina side, choosing instead to obliterate a functioning park to avoid purchasing a few acres of land.

The lands along the river and near it have been the focus of revitalization and economic development efforts on both sides of the river for many years as established by riverfront master plans beginning in 1981 on the Augusta side and 1996 on the North Augusta and Aiken County shore. The Cities have been pursuing exciting new projects that create homes, businesses, and quality of life improvement opportunities for its citizens, as well as value for the owners of the properties, totaling many hundreds of millions of dollars. These values are jeopardized by the lowering of the pool elevations, where docks and boats are grounded, viewsheds blighted, and access to the water curtailed. This translates into immediately reduced real estate values where the water use and access formed large percentages of the dollar value of the landward property. That portion of their real estate value is instantly gone and may constitute a taking.

Typically, Corps's reports on water resource projects would consider damages from flooding (or water level lowering) in terms of stage-damage curves, which are used to estimate dollar values of projected damages. The Draft Report is deficient in this respect and does not consider any monetary damages to real estate from the proposed project.

The Corps asserts that the project is limited, "to the extent possible, to land that is currently owned by the federal government. Several of the project alternatives considered were developed based on the maximum project footprint."¹⁷

J. Sedimentation

The Corps fails to address the long-term sedimentation of the pool over the life of the project, which will ultimately, cause multiple problems upstream, silting-in and impairing

¹⁷ Draft Report Appendix E, Real Estate, Section 1.18, p. 9; and Appendix A, Engineering, revised version 2/22/2019 Section 6.2 Real Estate accessed 4/9/2019.

the operation of water intakes, reducing flow cross-sections, raising flood levels, and other negative effects. The Corps must consider the beneficial effects of choosing an alternative that does not create upstream silt deltas, such as Alternative 1-1.

The Draft Report also fails to consider adequately the movement of existing silt masses downstream and the accompanying exposure of various types of deleterious materials. The Draft Report lacks consideration of the issue of dealing with legacy toxic sediments that will likely be disturbed by exposure along and within the pool and during the construction on the site. The Corps must address the presence or absence of legacy toxic chemical composition and potential fate and transport of those sediments and must provide a plan to facilitate sediment stabilization of newly exposed sediment sources.

1. Siltation of the Pool Over Time

The Draft Report aptly points out that there are three large multi-purpose reservoirs owned by the Corps of Engineers upstream that act as sediment traps for the Savannah River downstream, and also that the Stevens Creek Dam and the Augusta Canal Diversion Dam have the same effect. It should be noted, nevertheless, that there are many streams that enter the river downstream of Thurmond Dam and that the pools of Stevens Creek and Augusta Canal dams are nearly full of sediment.

The erection of a fixed weir will forever halt the transport of bed-load sediments and trash, which are now released continuously by design at the under-flow gates of the Lock and Dam. Ultimately, the pool will fill in with silt, albeit over what might normally be considered a long time, but not so long a period when taken in the context of the 100-year time planning horizon of the Draft Report. A full-scale example of this phenomenon is at the Stevens Creek Dam just a few miles upriver from the pool. Built in about 1915, its impounded pool is virtually filled with silt, so that emergent wetlands cover many acres of what used to be the middle of the Savannah River. Such a fate will ultimately occur, given enough time, at any fixed weir at New Savannah Bluff, and will eventually extend upstream to impair water intakes, docks, etc.

The Corps Draft Report also points out high shoaling areas at two locations: on the North Augusta side of the river behind the training wall (incidentally, built by the Corps of Engineers itself to prevent shoaling) and near the Sand Bar Ferry Road area.¹⁸ This latter area includes the head of Blue House Bar, which was the low-flow head of navigation in drought times before the New Savannah Bluff Lock and Dam cured the navigation problem and made the shoaling at this location no longer a problem. These areas will continue to accumulate silt over time, as described above, and will become a problem once again, especially if the pool levels are lowered.

2. Toxicity and stabilization of newly exposed sediments

Pool drawdown showed the extent of new sediment that would be exposed as a result of pool elevation changes. Those sediments will be exposed to new wave lapping and rainfall/runoff erosion processes. It is unclear whether those newly exposed sediments contain legacy pollutants and what the fate and transport of those pollutants may be. Appendix E contains a table of Sediment Chemistry Data taken from samples in 2006-2008 from multiple locations along the Savannah River; RM 202, RM 198, and RM

¹⁸ "Sedimentation Evaluation for SHEP Fish Passage," August 9, 2018, Draft Report, Appendix A, Attachment 3.

190 are all within the Lock and Dam pool section. Newly exposed sediment will impact water quality in the form of turbidity and suspended sediments until the newly exposed sediment is stabilized by vegetation. In addition, any legacy toxic components could be mobilized as a result of erosional forces, this could have a significant impact on drinking water supply for the Max Hicks drinking water plant (intake below Augusta Marina), on aquatic biota, recreational activities, and on sporting activities such as the Ironman triathlon. Is there a plan to determine legacy toxic chemical composition and potential fate and transport of those sediments? Is there a plan to facilitate sediment stabilization of newly exposed sediments with vegetation by seeding/or planting these newly exposed areas?

K. Aquatic Resources

1. Impact of Dam Alterations on Savannah River Fisheries

Currently, NSBLD provides appropriate hydrologic forces to maintain an approximately 50' scour pool on the downstream side of the dam. This scenario provides unique physical and geological forcing necessary to maintain a mid-stream gravel bar located approximately 600 ft downstream of the dam and scour pool. This geological and physical forcing has been in place for over 90 years, since the dam was constructed, and is considered the contemporary "new normal" for biological species in the Savannah River with life spans of 90 years or less. It is expected that all alternatives for fish bypass/NSBLD modification will alter the necessary erosive flows and sustaining dynamics currently maintaining this gravel bar, resulting in alteration of this important spawning habitat (CORPS, 2018): the extent of impact is not known.

Experts that have studied Savannah River fisheries have concluded that several endangered species rely on the gravel bars below NSBLD for suitable spawning habitat. Grabowski and Isely (2006) showed that the endangered (Georgia listed) robust redhorse relied on the only two known gravel bars below NSBLD for spawning and showed a high degree of site fidelity for spawning at those two sites. Freeman and Freeman (2001) concluded that the endangered robust redhorse uses gravel bars exclusively with the bar below NSBLD as a critical habitat. For Atlantic sturgeon, NOAA-NMFS designated the gravel bar below NSBLD as an endangered habitat critical to support spawning of Atlantic sturgeon in 2017 (NMFS, 2017; USACE, 2019).

Shortnose and Atlantic sturgeons as well as Robust redhorse have keen site fidelity to spawning grounds. Kynard et al (2016) indicated that shortnose sturgeon return "home" to the same reach with 100% site fidelity and spawn annually at the same small sites. Less is known about the Atlantic sturgeon but they are also believed to have high site fidelity in southeastern rivers (Collins, et al., 2000). Robust redhorse are known to have high site fidelity in the Savannah River Basin (Grabowski and Isely, 2006).

In all rivers where shortnose sturgeon studies have been conducted, it was shown that these fish spawn at one reach, the most upstream reach used during their life history (Kynard, et al., 2016). Kynard et al (2016) also suggested that female shortnose sturgeon that have historically spawned below dams are more genetically hard-wired to home to their historical spawning grounds. Finally, Kynard et al. (2016) suggested that even if river rapids exist, which are believed to be the favored spawning

conditions for shortnose sturgeon, this does not mean that they will seek those areas if that individual imprinted at a different reach during the early life stages.

No matter the option chosen for NSBLD, either rock ramp or bypass, it is without doubt that the physical and geological forces currently maintaining the mid-channel gravel bar will be removed and the imprinted/endangered habitat will no longer be available as spawning habitat for these endangered species. Hypothetically, if these fish do not use the rock ramp, either as a bypass or in-river structure, to move further upstream during spawning migrations to the Savannah River shoals area (the presumed preferred habitat), it could cause a devastating collapse of the Savannah River populations of Atlantic sturgeon, Shortnose sturgeon, and Robust Redhorse by significantly reducing spawning success at either the gravel bars or shoals reaches.

In 2013, the Cape Fear rock arch ramp was officially unveiled. This structure replaced a similar low head dam structure, like NSBLD, while leaving in-place a lock system. This would be an excellent opportunity to learn how successful it has been regarding fish passage. Unfortunately, NCDNR is not permitted to tag the endangered Shortnose or Atlantic sturgeons and have only been tracking migrations of shad, herring, and striped bass. Therefore, there is no data available on passage for the endangered sturgeons. There has been one observation of an Atlantic sturgeon above the rock ramp structure but there is no evidence that it passed the rock structure as opposed to passing as a result of lockage.¹⁹ Furthermore, the rock ramp has been successful in passing shad and herring but not striped bass so engineers, scientists, natural resource managers, and NOAA Fisheries are discussing future adaptive management strategies in an effort to facilitate passage of all species.²⁰

If the primary goal of the NSBLD alteration is to allow passage of shortnose and Atlantic sturgeons beyond NSBLD, then **no matter the design alternative chosen, Corps, NOAA-NMFAS, and GPA should take an adaptive management approach and ensure successful passage and spawning behavior of these fish. Sufficient funds should be allocated for monitoring fish migration patterns to either reach remaining shoals above NSBLD or spawn at any remaining gravel bars that may exist after construction below the dam and sufficient contingency funds should be set aside to make appropriate alterations to the chosen alternative until successful spawning behavior has been proven with reliable, peer reviewed data at either remaining gravel bars or within the shoals.**

2. Impact of dam alterations on dissolved oxygen concentrations

The Savannah River is not meeting state standards for water quality due to low dissolved oxygen concentrations in the Savannah Harbor. As a result, a Category 5R alternative restoration plan was developed in order to bring the Savannah Harbor reach into compliance with the standard. In order to meet the restoration plan, all sources of biochemical oxygen demanding substances to the river below Thurmond Dam were identified, and a model was developed by GAEPD and SCDHEC with the intent to reduce sources of those substances so the dissolved oxygen standard could be met in

19 (https://sero.nmfs.noaa.gov/habitat_conservation/hcd_headlines/cape_fear_ld1_fishway.html).

20 (https://sero.nmfs.noaa.gov/habitat_conservation/hcd_headlines/cape_fear_ld1_fishway.html
<https://www.coastalreview.org/2017/01/river-advocates-work-to-add-fish-passages/>)

the harbor. The foundation of the model was based upon “natural background conditions”, meaning that natural biological, physical, and chemical processes that contributed to oxygen generation and oxygen consumption were accounted for in the model before all discharger contributions were considered. A significant source of dissolved oxygen generation within the Augusta reach of the Savannah River included aeration of the river water as it cascaded over the dam. The figure below shows 2 years of 15-minute interval dissolved oxygen data (over 60,000 15-minute observations). These data show that aeration over the dam resulted in an average dissolved oxygen saturation of 107% (at RM 185 site) with both 25% and 75% of the data above 100% saturation and a few excursions to a low of 90% saturation. This can be compared to the shoals reach of the Savannah River (RM202) which had a lower average saturation, a wider 25% and 75% range, and lower DO% excursions below 90%. The proposed rock arch ramp will be more similar to the RM202 dataset because this shallow water habitat will undergo photosynthesis and respiration due to the attached algae on the rocky substrate in addition to aeration. The second figure below shows continuous data from below the shoals in July 2012. The data show that aeration and photosynthesis increased dissolved oxygen saturation to 122% in the afternoon but aeration and respiration at night lowered saturation to nearly 70%. Any loss or gain of dissolved oxygen within the Savannah River system below Thurmond Dam will impact the 5R process and could jeopardize restoration of dissolved oxygen in the Savannah Harbor.

Since dissolved oxygen is so critical, there should be peer reviewed documentation from other rock ramp projects around the country that show dissolved oxygen dynamics will not be impacted by the chosen alternative. Furthermore, that documentation should be in the form of measured data from those projects and not modeled results since this impact is so critical to restoring the river and could impact the viability of each municipal and industrial discharger below Thurmond Dam.

DO% 1/1/06-1/31/08

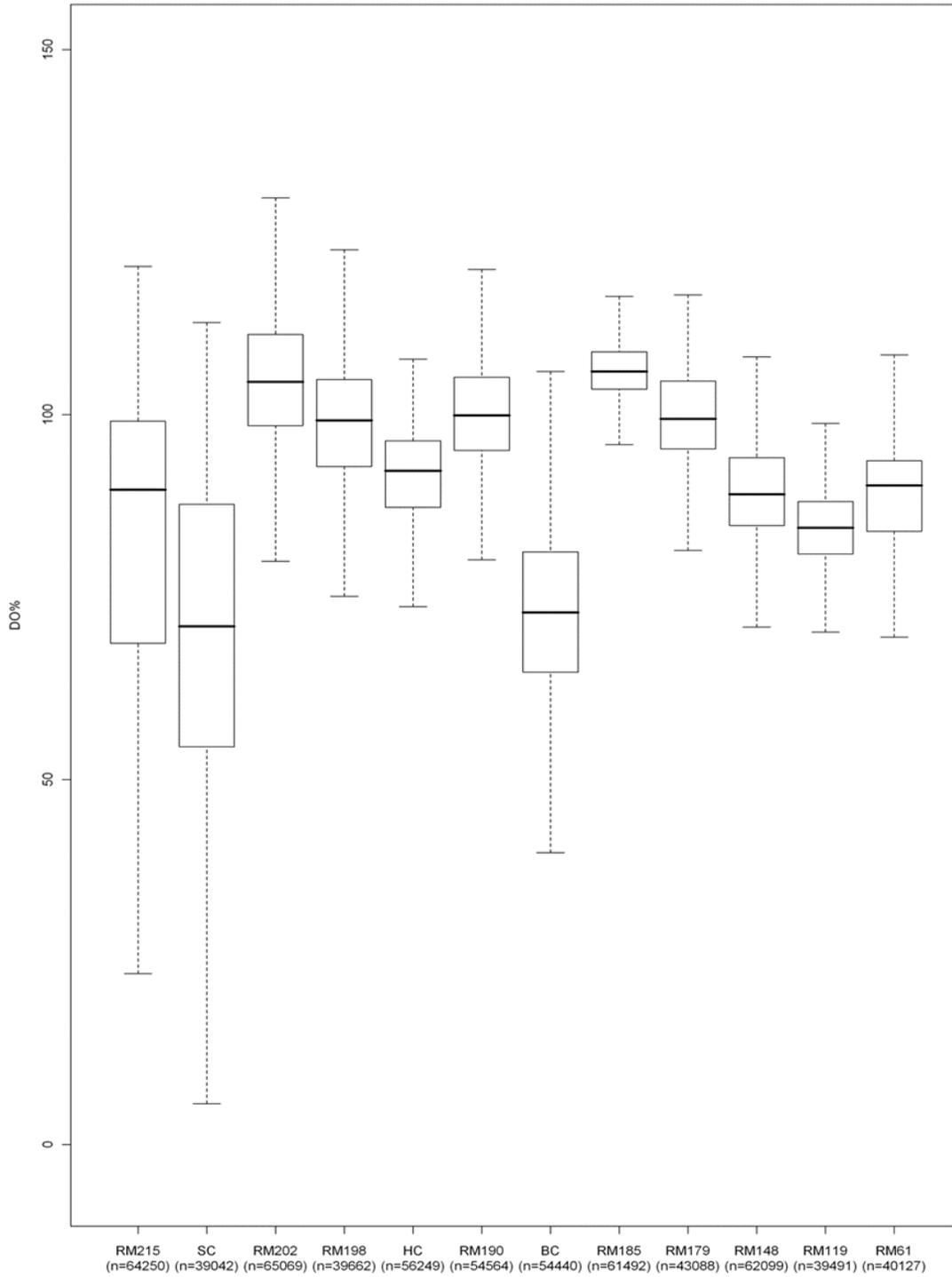


Figure 9: Dissolved oxygen percent saturation statistics from multiple continuous Savannah River water quality stations from January 2006 through January 2008 (from Comprehensive Savannah River Study, Final Report: February 2006-January 2008. Phinizy Center for Water Sciences.)

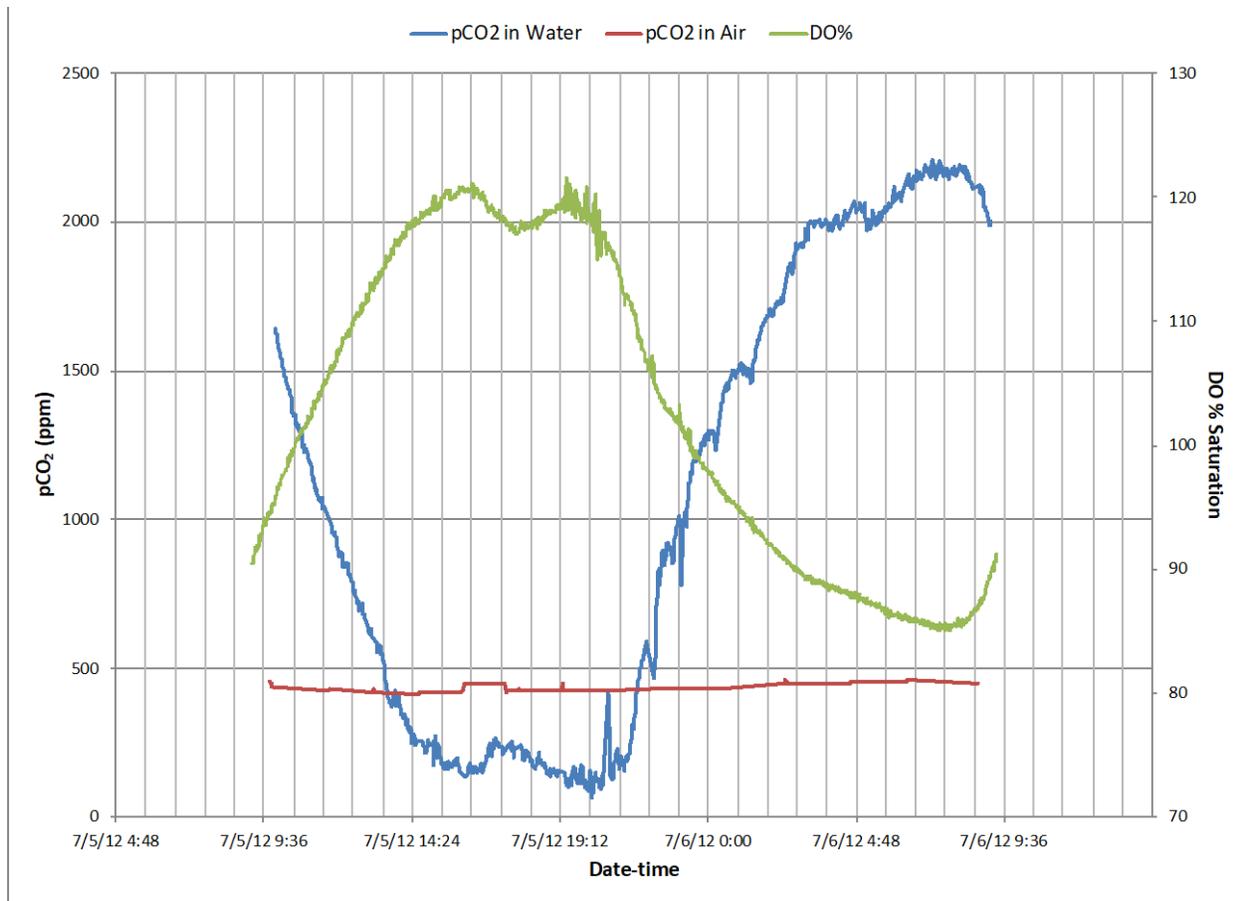


Figure 10: Measurements of dissolved oxygen percent saturation (green), partial pressure of CO₂ in water (blue) and partial pressure of CO₂ in air (red) at River Mile 202 (immediately below the shoals section of the Savannah River) over a 24-hr period, from July 5, 2012 through July 6, 2012.

3. Scour Hole Below NSBLD

What is the fate of the scour hole below the dam for the preferred alternatives?

4. Effect of Drawdown on Groundwater Elevations

After the drawdown, a crack developed in the soil behind a seawall on a property adjacent to the Savannah River. The failure was likely due to subsidence as a result of the lower pool elevation during the drawdown. Whether the seawall was installed properly or not is a matter of discussion, but the incident elucidated an important facet of the river system that could have a major effect as a result of a lower pool elevation. All surface waters in the Augusta and North Augusta areas flow to the Savannah River, groundwater contributes to that surface water flow. The pool elevation sets the piezometric head for all surface and regional surficial groundwater systems that drain to the river. Since groundwater and surface water flows to the river, changing pool elevation will have an impact on the regional surficial groundwater table by decreasing piezometric head and lower water levels in the watershed that drains to that pool elevation. This impact could have a positive effect in some areas of Augusta and North Augusta that have had historic flooding issues because the Lock and Dam artificially held the piezometric head higher than when the dam was not in place, but could have significant impacts in areas where groundwater drawdown weakens under

portions of each city that are supporting significant infrastructure. This again, shows that the series of dams in the Savannah River are the “new normal” for the river and changes that effect widescale systems, such as the regional groundwater system, could have significant economic impacts if not appropriately studied and accounted for. How will this potential impact be addressed if the pool elevation is proposed to be lowered from current normal levels?

5. Justification of mitigation

The Corps must clarify how NOAA-NMFS justified mitigation of access to spawning habitat above NSBLD in lieu of destruction of nursery/summer habitat in the estuary. The Cities would like to understand the NOAA-NMFS justification and should include providing the peer-reviewed statistical cost/benefit analyses to justify this conclusion as well as any peer-reviewed publications that support this justification. This justification should be weighed relative to some of the world’s renowned experts on shortnose sturgeon (including a NMFS expert; Kynard et al., 2016) suggesting that even if river rapids exist (believed by many fisheries experts to be the favored spawning conditions for shortnose sturgeon), this does not mean that they will seek those areas if individual fish imprint at a different reach during the early life stages.

L. Impacts to Wetlands not Adequately Identified, Evaluated, or Mitigated

Identification, mitigation, and evaluation of potentially impacted wetlands and the differing impacts to these by the various alternatives were not presented in the Draft Report including the Draft Finding of No Significant Impact. Therefore, the development and evaluation of the proposed alternatives in the Draft Report are inadequate.

Draft Report & Appendix C – Environmental Resources: Wetlands not investigated in the footprint of any of the alternatives.

Specific issues are as follows:

1. Wetlands near the NSBLD Site

- Impacts to wetlands adjacent to project site – PF01A and PFQ1C on Figure 9, and (potentially) others not identified - could not only be impacted by the lowering of the water upstream of the pool, but would also likely be further impacted by alternatives that include lowering of NSBLD Park. Excavation of the so-called wetlands bench will increase the hydraulic head differential and thereby tend to drain the wetlands identified in the NWI Map and other potential wetland areas located north easterly of the site.

- The Draft Report did not include an Environmental Impact Statement (EIS), wetlands delineation investigation, nor report for the proposed alternatives for the currently proposed project boundary.

While these were conducted for the original SHEP Plan, the footprint of the proposed alternatives is clearly very different – located primarily on the north side of the river rather than the south side.

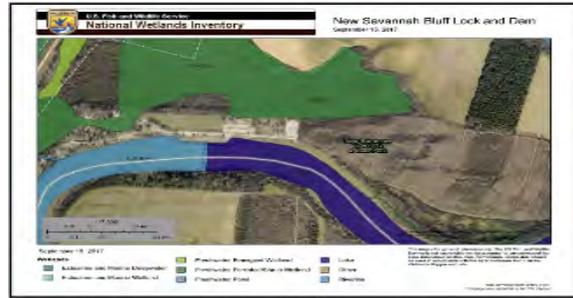


Figure 9: National Wetland Inventory Map for New Savannah Bluff Lock and Dam
2.2.5 Terrestrial Resources and Wildlife

Figure 11

While a National Wetland Inventory Map is referenced, based upon site inspection there are areas with standing water (observed during a site visit) to the north and east of the site. If these are subsequently identified as wetlands, they could also be impacted by most if not all the proposed alternatives.

- The footprint impacted by the alternatives is not clearly presented and does not adequately include or identify the areas needed for construction related activities including but not limited to access and dewatering.

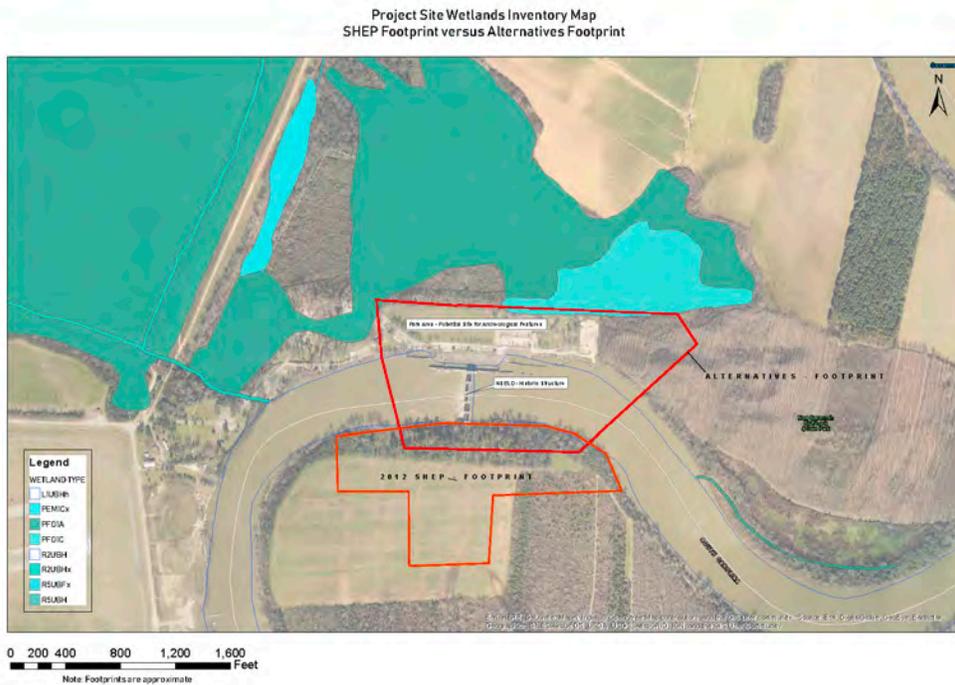


Figure 12

- All presented alternatives (other than 1-1) also include removal of the NSBLD which will entail vastly different dewatering efforts, construction techniques, and construction related impacts to the river as related to the original SHEP Plan. Identification, quantification, development, and evaluation of mitigation measures

and impacts on aquatic resources, and costs should be included in the development and refinement of alternatives. ☰

2. Wetlands Upstream of the NSBLD

Draft Report & Appendix C – The lowering of pool surface elevation will potentially affect fringe wetlands on the 17-mile reach of the Savannah River above the NSBLD, and wetlands with hydrologic surface connection to the river affected by reduction in pool elevations below existing surface water elevations. Based upon published data including USGS National Wetland Inventory, the affects would include thousands of acres of wetland, fringe wetland, and sensitive riparian habitat. The Corps failed to assess both direct and indirect effects of the proposal and alternatives on these sensitive areas which are protected pursuant to Section 404 of the Clean Water Act.

Section 2.2 of the PAAR addresses only areas in the immediate vicinity of the NSBLD and includes no assessment of pool surface elevation lower on the 17-mile mainstem stretch and the direct and indirect effect on wetland, fringe wetland, and sensitive riparian habitat and ecosystem features.

- As outlined within the Draft Report and elsewhere in these comments, the presented Alternatives were estimated to lower the existing water surface in the pool by about 5 feet

for Alternative 2-3 or 3 feet for the Recommended Alternative 2-6d (5,000 cfs at the NSBL). Projected lowering of the water surface is even greater at flows below 5,000 cfs which occur during significant periods. Also, as stated elsewhere, the

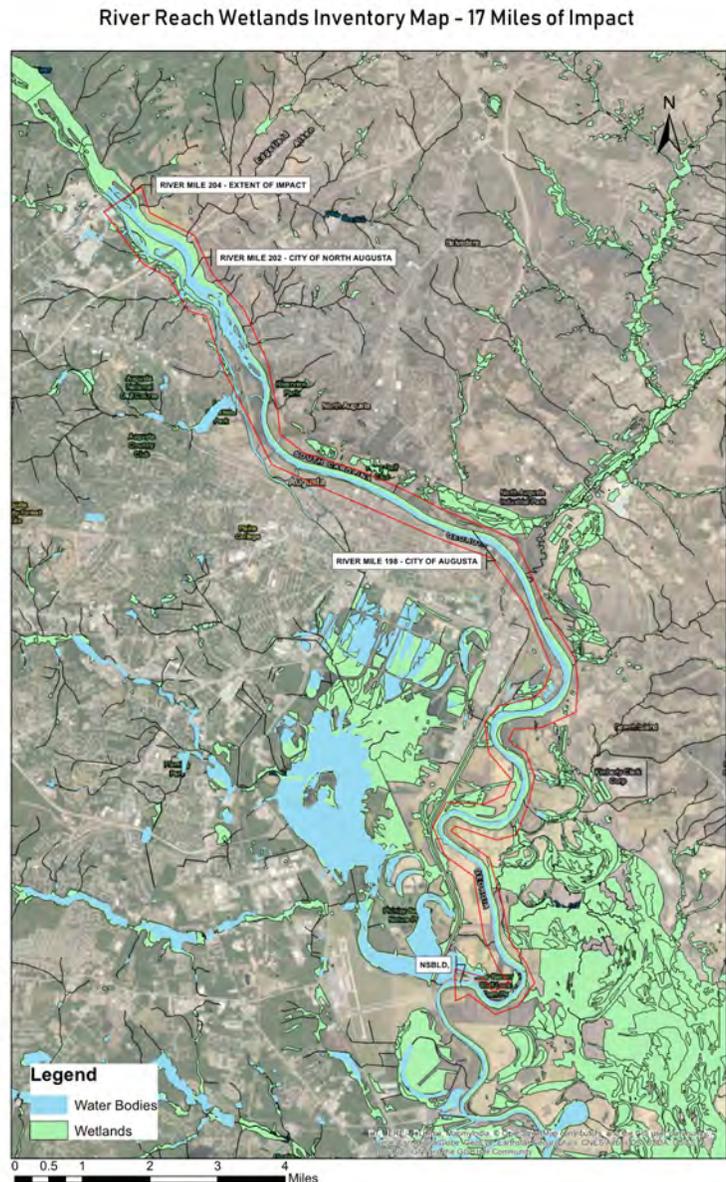


Figure 13

water surface elevations observed during the drawdown were significantly lower than projected by the Corps's model, which demonstrates further potential impacts to upstream wetlands. This reduction in water surface over existing conditions occurs (albeit at dimensioning amounts) throughout the impacted reach appears to be about 17 miles, however even this is not clearly established in the Draft Report. This lowering of the pool would likely have some impact on wetlands adjacent to the river over this entire reach. None of these potential impacts were identified or evaluated within the Draft Report.

For comparison, the original SHEP Plan was predicted by the Corps to have no reduction of the upstream water surface elevation at 5,000 cfs at the NSBLD. Therefore, impacts to upstream wetlands were not as critical of an issue as with the alternatives presented in the Draft Report.

M. Power Generation – A Lost Opportunity for O & M Revenue?

When the New Savannah Bluff Lock and Dam was built it was equipped with three identical water turbine bays for potential future installation of hydro-electric turbines. Under options where the lock wall is repaired, these bays could be fitted with three water-driven turbines powering three synchronous or induction generators totaling about 335 kW of electrical power, or about 1.0 MW. These units could produce almost 8 million KWH per year at a value exceeding \$400,000 annually.²¹ The City of Augusta could use the power itself at their nearby Messerly wastewater treatment plant, Hicks water treatment plant, or Augusta Regional Airport, thereby maximizing the value of the revenue. Moreover, the pool would not be lowered by the modest flows through the water wheels. The Corps should consider the added benefit of power generation as a potential offset against future maintenance costs of the applicable alternatives, including Alternative 1-1.

N. Cultural Resources and Historical Considerations

The Draft Report contains meager, erroneous, and incomplete information on the Corps's plans to comply with the applicable requirements of the National Historic Preservation Act. While the Corps states that they will conduct archaeological investigations according to the 2012 SHEP Programmatic Agreement, that agreement and its attachments make no mention of the New Savannah Bluff site nor the NSBLD. The Area of Potential Effect in the Draft Report is erroneous and needs to be corrected to include all of the areas impacted by the proposed alternatives, including at least all of the federally owned lands currently leased to Augusta, Georgia. It is known that the NSBLD is eligible itself for inclusion on the National Register of Historic Places, as acknowledged in the Draft Report. However, the Draft Report proposes no specific mitigation for its loss, which will occur in whole or in part in all alternatives except the No Action Alternative. The Draft Report merely states that an MOA with Georgia and South Carolina SHPOs will be required, and that perhaps documentation according to Historic American Engineering Record standards would be accomplished. The original SHEP EIS Programmatic

²¹“New Savannah Bluff Lock & Dam Hydro Electric Program,” and “What does the US Dept. of Energy (DOE) think about the potential of hydroelectricity at the New Savannah Bluff Lock and Dam?”, www.savannahriver.org, accessed April 4, 2019.

*Agreement*²² states, only in blanket terms, that the investigations pertaining to historic buildings and structures will be conducted according to the specified federal guidelines.

The Area of Potential Effect (APE) boundary should be adjusted to cover all of the areas impacted by the proposed alternatives, including access roads, lay down areas, and other areas on the Georgia and South Carolina side to be affected by the project, as well as the reach of the Savannah River upstream of the Thirteenth Street Bridge to the base of the Augusta Shoals above River Mile 204. The boundary should be enlarged to include at a minimum all of the federally owned lands leased to Augusta, Georgia (containing the lock-tenders' residences site), plus an adjacent colonial era cemetery, and the downstream lands to the end of the bluff. Also, there is a high probability of encountering remains of previous occupations of Native Americans at New Savannah Bluff. The Chickasaw Indians are known to have occupied the site during the historic period. Collections at the Augusta Museum of History include a fine shell gorget recovered from the borrow pits adjacent to this property, indicating that other remains might be discovered or disturbed. The extended upper reach of the river includes the historic Campbelltown Ferry site leading from historic Ezekiel Harris House (NRHP) across the river to Campbelltown and to the site of the colonial village of Fallmouth. The base of the shoals may contain remains of historic and prehistoric fish weirs and traps used to capture fish, particularly migratory fish such as those which are the subject of the Fish Passage project.

The Draft Report contains errors in identifying historic resources in the upstream pool, particularly bridges. There are two early to mid-19th Century railroad bridges across the Savannah River, but one is upstream of the Fifth Street Bridge and the other downstream. These are historic, patented "rolling lift bridges." In addition, there are stone piers from the former South Carolina Railroad covered timber bridge upstream of the Fifth Street Bridge. In addition, the Fifth Street Bridge, with a superstructure completed about 1935, is a historic property itself, containing a unique swing span. It is also the sole known example of a brick pier supported bridge in the United States.²³

The Draft Report mentions wing dams, pile dikes, and other features constructed by the Corps over many years in the reach under the pool as aids to navigation. The Fish Passage with its lowered water levels will effectively undo more than 166 years of projects and expenditures by the Corps to improve navigation in the Augusta-North Augusta area. Do those projects not still serve the important purpose of helping to maintain navigability, even though they may have been forgotten by the very agency that built them?²⁴ The "low training walls" should include the main training wall in the slack water pool opposite the Cities' waterfronts, sometimes called Gardner's Bar Jetty, which angles out from the South Carolina bank to the center of the river at the Norfolk Southern Railroad bridge at Sixth Street and extends thence roughly down the center of the river for approximately one mile. While it is a historic resource, it may become a safety hazard to navigation (both for recreational and economic development purposes) if the pool is lowered,

22 The Programmatic Agreement is hidden in the Draft Report appendices. The "Savannah Harbor Expansion Project Cultural Resources Programmatic Agreement" is found in Appendix C5 to the Draft Report, but is erroneously titled in the "Appendix C Environmental Resources Documentation" table of contents as "8-Step Process for EO 11988: Floodplain Management."

23 Personal communication, Eric DeLony, former director of HAER, with Tom Robertson, circa 2012.

24 Drawings of these features date back to at least 1853, when extensive surveys were made of the Savannah River navigation between Augusta and Savannah; and include plans dated 1883, 1888, 1916, and others. See The National Archives, Record Group 77, Civil Works Map Files, and Fortifications Files, and others.

requiring some sort of practical mitigation, not mere avoidance as a “check the box” mitigation measure for cultural resource preservation.

The NSBLD has been identified as eligible for listing on the National Register of Historic Properties, and Georgia DNR Historic Preservation Division has identified that the project will have adverse effect on the NSBLD under the National Historic Preservation Act (NHPA). Alternatives removing the NSBLD will have permanent destructive effect on the historic resource. Alternatives 1-1 and 2-1, which leave the NSBLD in place, minimize and avoid effects to historic resources and provide additional opportunities for historic and cultural benefits which have not been considered by the Corps. Interpretive centers, educational and historic tourism benefits of leaving the NSBLD in place, as has been done with similar projects with Corps involvement or ownership, have not been considered or assessed. For additional historic and cultural resources issues see Legal Comments, Section IX.B.

VI. Specific Comments on Alternative 1-1

*The Cities of Augusta and North Augusta request that the Corps reinstate and select a corrected and modified Alternative 1-1, because it is the only plan that comes close to maintaining the pool, as required by the WIIN Act 2016. **But even Alternative 1-1 illegally lowers the pool, as it does not comply with the WIIN Act and because it was formulated using the erroneous HEC-RAS computer model that was disproven by the February 15, 2019 drawdown.***

A. Reasons to include and select Alternative 1-1

1. Advantages, under the WIIN Act 2016 specified purposes:
 - Maintains the pool, under nearly existing conditions (As presented, Alternative 1-1 lowers the pool elevation and decreases depths, however it may be possible to adapt Alternative 1-1 to meet the historic existing pool elevations.)
 - Preserves navigation in the pool.
 - Preserves the Lock and Dam Park.
 - Passes migratory fish.
2. Disadvantages, under the WIIN Act 2016 specified purposes:
 - Eliminates navigation up and down the river.
 - Removes the Lock, but preserves the water control gates of the Dam.
3. Other Advantages, not directly related to WIIN Act specified purposes:
 - Maintains adjustable control of the pool levels.
 - Requires no land purchases.
 - Requires no upstream flooding easement rights to be purchased.
 - Reduces impacts to aquatic resources and construction dewatering efforts and costs during construction.
 - Would best enable a future whitewater feature along the frontage of the park, if one should be added in the future.

4. Other Disadvantages, not directly related to WIIN Act specified purposes:
 - Requires ongoing maintenance of mechanical and structural elements of the remaining gates.

B. Reasons to Question Costs Related to Alternative 1-1

1. Widely Changing Costs

The cost figures presented by the Corps for this and other alternatives have varied greatly at each stage of this project and were even changed by an order of magnitude during the middle of the current public comment period. The underlying bases of these costs have not been shared with the public, and are so unreliable and unsubstantiated that no rational conclusions can be drawn by the Cities nor the public at large.

The Corps has used their latest highly escalated cost projections and a question about the fish passage efficiency to throw out the most reasonable of the plans proffered in the Draft Report. This decision is arbitrary and should be reversed.

The costs assume a complete rebuild of the Lock and Dam at Year 50 at a cost of \$93.7 million, and a huge amount of Operation and Maintenance costs besides. Engineering economic analyses do and should consider proper maintenance costs to operate the facility over the time of the planning horizon. The very large and highly suspect O&M costs should obviate the need for a complete rehabilitation at that time. It is totally unclear what the basis of those exorbitant O&M costs are. Moreover, the Corps will certainly not be actually placing funds into a sinking fund to pay for the rebuild. The Corps should present supporting documentation of the newly escalated cost figures, so that the Cities and stakeholders may reach conclusions on their validity.

2. Erroneous Cost Estimates and Assignment of Responsibility Cost Sharing

The Corps's Implementation Guidance states that if any alternative is chosen under (i) of the WIIN Act, the federal share of operation and maintenance costs is 100%, and if any alternative is chosen under (ii), the O&M costs are to be split according to the purposes of those costs. Therefore, the O&M costs for Alternative 1-1 should be 100% federal. But, the escalated cost chart in their blog post of 2019/03/18 shows a split federal/non-federal cost for Alternative 1-1, the same basis as presented for 2-6d.²⁵ In reality all of the O&M costs for 1-1 should be corrected to be a federal expense. Is this a hidden reason for the Corps to eliminate Alternative 1-1 late in the public comment period?

Moreover, the Corps's cost estimates overall are arbitrary and unsupported, contradicting previously published figures by such wide margins as to bring into question their veracity for use in rational decision making.

²⁵ <https://balancingthebasin.armylive.dodlive.mil/2019/03/18/how-two-fish-passage-alternatives-compare/>, Draft Report, 4.3 Cost Sharing, p. 105, Implementation Guidance, May 25, 2017.

Thus, the Corps's blog table is an unsubstantiated presentation of erroneously-assigned, inflated costs. Their cost and assignments do not follow the Corps's own instructions from their Headquarters, and must be discarded and revised.

VII. Specific Comments on Alternative 2-6d.

The Cities of Augusta and North Augusta object to the selection of Alternative 2-6d, because that plan violates the authorizing legislation in that it does not maintain the pool for water supply and recreation as required by the WIIN Act 2016, and does irreparable and permanent damage to the communities, their industries, businesses, citizens, and visitors.

A. Reasons to Reject Alternative 2-6d.

Alternative 2-6d consists of a fixed weir with a floodplain runaround through the Lock and Dam Park.

1. Advantages, under the WIIN Act 2016 specified purposes:
 - No technical advantages for authorized purposes.
 - Most cost effective (according to the Draft Report)
2. Disadvantages, under the WIIN Act 2016 specified purposes:
 - Greatly lowers the pool (much lower than predicted in the Draft Report).
 - Impairs water supply in the pool.
 - Impairs recreation in the pool.
 - Eliminates the Lock and Dam Park for recreation.
3. Other Advantages, not directly related to WIIN Act specified purposes:
 - Passes fish. If the design of the rock ramp works for passing sturgeon, then the full river width of the ramp is beneficial to the fish for their finding the ramp.²⁶
 - Highest weir without land inundation (according to the Draft Report).
4. Other Disadvantages, not directly related to WIIN Act specified purposes:
 - Eliminates navigation up and down the river.
 - Impairs safe navigation within the pool.
 - Results in a pool water surface that will fluctuate much more frequently and dramatically than historic conditions. This will result in bank instability, poor access to the water's edge, increased difficulty in egress from the water, and failure of structures such as occurred during the drawdown.
 - Effectively eliminates the vast majority and significantly decreases the value of the NSBLD Park.

²⁶ This benefit is included and stated here, notwithstanding the fact that the WIIN Act does not require nor authorize fish passage for this alternative, because it is authorized under option (ii) of the act.

B. Reasons to Question Costs Related to Alternative 2-6d.

1. Erroneous Cost Estimates and Assignment of Responsibility for Cost Sharing.

The Corps's cost estimates are arbitrary and unsupported, contradicting previously published figures by such wide margins as to bring into question their veracity for use in rational decision making.

The Corps's Implementation Guidance states that if any alternative is chosen under (ii) of the WIIN Act, the federal share of operation and maintenance costs is 100% for the fish passage alone, "including monitoring, adaptive management, and operation and maintenance"; while the share of costs for any other purpose is 100% non-federal, including ". . . operation and maintenance of the structure for any other purpose, including maintenance of the pool for water and recreation."²⁷ The escalated cost chart in the Corps's blog post of 2019/03/18 shows zero (\$0) ongoing O&M costs for Alternative 2-6d. under the "Non Fed Share."

It is absurd to assume that there will be no maintenance required for the specified tasks over the life of the project. Certainly there will be costs for maintaining the unlined flood water runaround, repairing scour holes, removing accumulated silt behind the weir, removing accumulated flotsam interfering with navigation in the pool at the boat ramp, keeping up the boat ramp, and a myriad of other similar items.

The federal share of the first cost is also erroneously calculated in the blog post, which states that the federal share of the SHEP Fish Passage is limited to 75 percent of the original SHEP Fish Passage authorized in 2014, "which is currently estimated at \$62,673,000." This unsupported cost estimate is greatly understated, as it is inconceivable that all of the other costs quoted by the Corps have recently escalated dramatically and inexplicably, while the original plan cost has remained the same or nearly the same. The cost estimate of the original SHEP plan must be corrected and updated commensurate with the treatment that all of the other cost estimates have received. The Corps must furnish background substantiation of the costs to allow clear understanding and independent review by the stakeholders of the economic analyses to be accomplished.

Thus, the blog table is once again an erroneous presentation of costs, according to the Corps's own instructions from their Headquarters, and must be discarded and revised.

VIII. Detailed Comments on Corps Draft Report, Line by Line

The comments in this document are supplemented by more detailed comments on the individual sections, presented line by line, which are included herein in Appendix G.

²⁷ Note that the Draft Report does not follow the Corp's Implementation Guidance on costs to be included. The Implementation Guidance does not mention "navigation" costs as a non-federal cost (consistent with the WIIN Act), while the Draft Report includes navigation as a non-federal sponsor cost (inconsistent with the WIIN Act). (See Implementation Guidance, May 25, 2017, pp. 2-3; and Draft Report, 4.3 Cost Sharing, p. 105.)

Appendices

APPENDIX A	Resolutions of Governing Bodies: Augusta, North Augusta, Aiken County
APPENDIX B	Letter from Senators and Congressmen to Department of the Army, Corps of Engineers, April 9, 2019.
APPENDIX C	Report on Hydraulics Methodology, April 15, 2019
APPENDIX D	Hydraulic Modeling and Discrepancies Observed During Drawdown
APPENDIX E	Savannah River Sediment Chemistry Data
APPENDIX F	River Vision Plan for the Savannah River for the City of Augusta, April 2019.
APPENDIX G	Detailed Comments on Corps Report Line by Line
APPENDIX H	Other Alternatives That Have Been Proposed
APPENDIX I	Transcript of City of Augusta Public Meeting, Lock and Dam Meeting, March 31, 2019
APPENDIX J	Aiken Standard News Article, February 19, 2019
APPENDIX K	Augusta Chronicle News Article, February 16, 2019

APPENDIX A

Resolutions of Governing Bodies: Augusta, North Augusta, Aiken County

**RESOLUTION IN SUPPORT OF OPTION 1-1
FOR THE SAVANNAH RIVER LOCK AND DAM**

WHEREAS, the Savannah River is a valuable asset to the entire Central Savannah River Area and especially to the consolidated government of Augusta, Georgia and its citizens;

WHEREAS, the Augusta Commission supports the idea of constructing a fish passageway to improve and sustain favorable outcomes for the fish and other wildlife in the Savannah River; and

WHEREAS, maintaining a high pool level in the Savannah River is critical to sustaining the commercial and recreational uses of the Savannah River; and

WHEREAS, the governing body of the consolidated government of Augusta, Georgia wishes to express its strong support for Corp of Engineer option 1-1 (retain Dam with Georgia Fish passage); and

WHEREAS, the governing body of the consolidated government of Augusta, Georgia wishes to express its strong opposition to any fish passageway option that would lower the pool level of the Savannah River more than is minimally necessary for a fish passageway.

NOW THEREFORE, THE AUGUSTA COMMISSION HEREBY RESOLVES AS FOLLOWS:

Section 1. **Support for** Option 1-1 and maintaining the 114.5ft (NAVD 1988) pool level for the Savannah River at Downtown Augusta location (as recorded at USGS Monitoring Gage #02196670).

Section 2. **Opposition** to any option that lowers the pool level of the Savannah River less than 114.5ft at Downtown Augusta location to construct a fish passageway. The Mayor and Commission of Augusta, Georgia strongly oppose all options that would reduce the pool level of the Savannah River.

Section 3. **Severability** - To the extent any portion of this Resolution is declared to be invalid, unenforceable, or non-binding, that shall not affect the remaining portions of this Resolution.

Section 4. **Repeal of Conflicting Provisions** - All resolutions inconsistent with this Resolution are hereby repealed.

Section 5. **Effective Date** - This Resolution shall be effective on the date of its approval by the Augusta, Georgia Commission.

SO RESOLVED, this the 18th day of December, 2018.

AUGUSTA, GEORGIA

By: Hardie Davis, Jr.
AGM Hardie Davis, Jr.
As its Mayor
12/18/18

ATTEST:

Lena J. Bonper
Lena J. Bonper, Clerk of Commission



RESOLUTION NO. 2019-1
A RESOLUTION IN SUPPORT OF OPTION 1-1 FOR THE NEW SAVANNAH BLUFF LOCK
AND DAM AS PRESENTED BY THE ARMY CORPS OF ENGINEERS AS A MITIGATION
PROJECT FOR THE SAVANNAH PORT DEEPENING

WHEREAS, the City relies on the Savannah River for drinking water, recreation, and as a beloved amenity that contributes to the quality of life for our citizens; and

WHEREAS, the City of North Augusta has branded itself as “South Carolina’s Riverfront” and recently, along with private developers, has invested hundreds of millions of dollars into developing said riverfront; and

WHEREAS, the City and its citizens have grown reliant and accustomed to the river pool created by the Lock and Dam since it went into service in 1937; and

WHEREAS, the 2016 WIIN Act states that any mitigation project selected by the Corps must “maintain the pool ... as in existence on the date of enactment of this Act”; and

WHEREAS, the City believes that pool elevation to be 114.5 (NAVD 1988) as measured at Downtown Augusta location (as recorded at USGS Monitoring Gage #02196670); and

WHEREAS, the preferred option 2-6d as selected and presented by the Corps would lower said pool by approximately 2.5 – 3 ft.; and

WHEREAS, the Mayor and City Council, after examining all options presented by the Corps, believes that option 1-1 is the only option that comes close to maintaining the existing pool.

NOW, THEREFORE, BE IT RESOLVED by the Mayor and City Council of the City of North Augusta, in meeting duly assembled and by the authority thereof, that ,

1. Option 1-1 as presented by Corps is the preferred option of the City.
2. Any and all measures should be undertaken by the Mayor and City Administrator to ensure that the present pool be maintained.

DONE, RATIFIED AND ADOPTED BY THE MAYOR AND CITY COUNCIL OF THE CITY OF NORTH AUGUSTA, SOUTH CAROLINA, ON THIS THE 7TH DAY OF JANUARY, 2019.



Robert A. Pettit, Mayor

ATTEST:


Sharon Lamar, City Clerk

Sponsor(s) : County Council
Committee Referral : County Council
Committee Consideration Date : January 15, 2019
Committee Recommendation : Approval
Effective Date : January 16, 2019

RESOLUTION NO. 19-01-15

COUNCIL ADMINISTRATOR FORM OF GOVERNMENT FOR AIKEN COUNTY

Expressing Support of Option 1-1 for the New Savannah Bluff Lock and Dam as Presented by the United States Army Corps of Engineers as a Mitigation Project for the Savannah Harbor Expansion Project.

WHEREAS:

1. Aiken County and its citizens have come to rely and depend upon the pool of water in the Savannah River created by the New Savannah Bluff Lock and Dam since it went into service in 1937; and
2. The City of North Augusta, the City of Augusta, as well as industries located along this pool, draw drinking, process and cooling water from the pool; and
3. In addition, the Savannah River is a major amenity that contributes significantly to the quality of life in our community and has recently drawn hundreds of millions of dollars in new public and private investment along the area of the pool; and
4. The WIIN Act, adopted in 2016, requires that any mitigation project chosen by the United States Army Corps of Engineers maintain this pool at the elevation that existed on the date of the adoption of the Act; and
5. It is believed that the elevation of the pool is 114.5 (NAVD 1988) as measured at Downtown Augusta location (as recorded at USGS Monitoring Gage #02196670); and
6. The preferred option of the Corps of Engineers, known as Option 2-6d, would lower the pool by an estimated 2.5 – 3 feet, creating operational issues for governments and industries, as well aesthetic and recreational problems for our community and the investments being made along the riverfront ; and
7. Aiken County, in consultation with the City of North Augusta, the City of Augusta, and the major industries utilizing the pool, have concluded that this option does not serve the best interests of our residents; and
8. Aiken County, having reviewed the various options presented by the Corps of Engineers, has concluded that Option 1-1 is the best and most reasonable option to maintain the pool for use by our residents and industries.

NOW THEREFORE BE IT RESOLVED BY THE AIKEN COUNTY COUNCIL THAT:

1. Aiken County Council does hereby endorse Option 1-1 for the New Savannah Bluff Lock and Dam mitigation project as the preferred option and requests that the United States Army Corps of Engineers reconsider their preferred Option 2-6d.
2. Aiken County Council also directs the County Council Chairman and County Administrator to continue efforts to ensure that the current pool created by the New Savannah Bluff Lock and Dam is maintained.

(signatures on following page)

Adopted at the regular meeting of Aiken County Council on January 15, 2019.

ATTEST:


Tamara Sullivan, Council Clerk

SIGNED:


Gary Bunker, Chairman

IMPACT STATEMENT:

COUNCIL VOTE: Unanimous

Sponsor(s) : Development Committee
Committee Referral : Development Committee
Committee Consideration Date : June 20, 2017
Committee Recommendation :
Effective Date : June 21, 2017

RESOLUTION NO. 17-06-105

COUNCIL ADMINISTRATOR FORM OF GOVERNMENT FOR AIKEN COUNTY

(Expressing Support to the United States Army Corps of Engineers for the Preservation of the Pool Created by the New Savannah Bluff Lock and Dam at Current Levels and for the Repair and Rehabilitation of the Structure.)

WHEREAS:

1. Aiken County, particularly the area along the Savannah River, has long depended on the pool created by the New Savannah Bluff Lock and Dam (NSBL&D) for drinking water, recreational use, industrial development; property development and wastewater discharge; and,
2. The NSBL&D has reached the stage that it needs substantial repair and rehabilitation and under the Water Infrastructure Improvements for the Nation (WIIN) Act, the primary objectives for the United States Corps of Engineers are to design and construct a structure that will maintain the pool for water supply, recreation activities and, possibly, navigation and to not increase flood risks in downtown Augusta and North Augusta; and,
3. It is recognized that NSBL&D was not built as a flood control structure, but certain changes could adversely impact properties along the pool or other users of the impoundment by either increasing the risk of flooding in downtown North Augusta and Augusta, lowering the pool to an unacceptable level or both; and,
4. Alternative designs have been discussed, including a fixed elevation weir without the ability to effectively control water levels, which provides a major area of concern for Aiken County; and ,
5. The Savannah Harbor Expansion Project (SHEP) includes funding for passage at the NSBL&D for endangered fish in the river, and some funding for repair or replacement of the NSLB&D; and,
6. Many years of inaction on this project has resulted in further deterioration of the structure, increasing the risk of the loss of the pool, an event that would be devastating to the economies of communities on both sides of the Savannah River; and,
7. Aiken County Council wishes to encourage prudent and expeditious action by the United States Army Corps of Engineers to repair and rehabilitate the NSBL&D in a fashion that best meets the needs of our community.

NOW THEREFORE BE IT RESOLVED BY THE AIKEN COUNTY COUNCIL THAT:

1. Aiken County Council requests the United States Army Corps of Engineers develop a fully funded plan for the repair and rehabilitation of the New Savannah Bluff Lock and Dam, including the passage for endangered species, which preserves the pool created by the structure at current levels and does not increase flood risks in downtown North Augusta and Augusta.
2. Aiken County Council encourages that the resulting project plan be developed and executed in a fashion consistent with the goals of the SHEP project and timeframe.

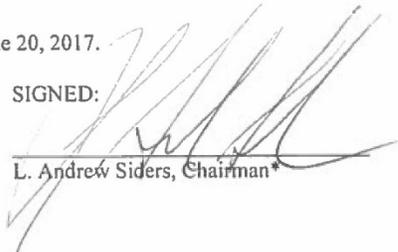
(SIGNATURE PAGE TO FOLLOW)

Adopted at the regular meeting of Aiken County Council on June 20, 2017.

ATTEST:


Tamara Sullivan, Council Clerk

SIGNED:


L. Andrew Siders, Chairman*

IMPACT STATEMENT:

COUNCIL VOTE: Unanimous

*Serving as Chairman pursuant to Aiken County Code Section 2-30(b).

**RESOLUTION 19-06 IN SUPPORT OF OPTION 1-1
FOR THE SAVANNAH RIVER LOCK AND DAM**

WHEREAS, the Savannah River is a valuable asset to the entire Central Savannah River Area and especially to the consolidated government of Augusta, Georgia and its citizens;

WHEREAS, the Columbia County Board of Commissioners supports the idea of constructing a fish passageway to improve and sustain favorable outcomes for the fish and other wildlife in the Savannah River; and

WHEREAS, maintaining a high pool level in the Savannah River is critical to sustaining the commercial and recreational uses of the Savannah River; and

WHEREAS, the governing body of Columbia County, Georgia wishes to express its strong support for Corp of Engineer option 1-1 (retain Dam with Georgia Fish passage); and

WHEREAS, the Columbia County Board of Commissioners wishes to express its strong opposition to any fish passageway option that would lower the pool level of the Savannah River more than is minimally necessary for a fish passageway.

THEREFORE, The Columbia County Board of Commissioners now hereby resolves:

Section 1. Support for Option 1-1 and maintaining the 114.5ft (NAVD 1988) pool level for the Savannah River at Downtown Augusta location (as recorded at USGS Monitoring Gage #02196670).

Section 2. Opposition to any option to construct a fish passageway that lowers the pool level of the Savannah River less than 114.5ft near Downtown Augusta.

Section 3. Repeal of conflicting resolutions – Any resolutions in conflict with this Resolution are hereby repealed to the extent necessary to eliminate such conflict.

Section 4. Effective Date - This Resolution shall be effective immediately upon its adoption.

SO RESOLVED, this the 19th day of February, 2019.

Columbia County Board of Commissioners



By: Douglas R. Duncan, Jr.
Chairman

Attest:



Patrice R. Crawley, Clerk of the Board of Commissioners

APPENDIX B.

**Letter from Senators and Congressmen to Department of the Army,
Corps of Engineers, April 9, 2019.**

Congress of the United States
Washington, DC 20515

April 9, 2019

The Honorable R.D. James
Assistant Secretary of the Army (Civil Works)
108 Army Pentagon
Washington, DC 20310-0108

Lieutenant General Todd T. Semonite
Commanding General and Chief of Engineers
U.S. Army Corps of Engineers
441 G. Street, NW
Washington, DC 20314-1000

Dear Secretary James and General Semonite:

We write to you to express our concerns regarding the future of the New Savannah Bluff Lock and Dam (NSBL&D) and express the intent of Congress for Public Law 114-322, the 2016 Water Infrastructure Improvements for the Nation Act (WIIN). It is our hope that by clarifying the Congressional intent and highlighting our concerns regarding the impact of Alternative 2-6d on the water pool level, which is vital for municipal and industrial water supply for the surrounding area and recreational activities for the citizens of North Augusta, Augusta and surrounding communities, the U.S. Army Corps of Engineers can arrive at a solution that benefits both the communities along the Savannah River and the Corps.

On November 15, 2018, the Corps announced Alternative 2-6d, which would remove the lock and dam and construct a fixed weir with a dry floodplain bench, as their preferred option for the future of the NSBL&D. On February 9, 2019, the Corps began a simulated drawdown test in order to demonstrate the effects of Alternative 2-6d on the pool levels, which are vital for water supply and recreational activities for the surrounding communities. On February 15, 2019, the Corps halted the drawdown simulation after effects of the river drawdown resulted in instability of the Georgia riverbank in the residential neighborhood of Goodale Landing. In addition, the simulation resulted in numerous docks becoming useless for recreational activities while they sat in the mud given the reduced pool level. Clearly these results do not reflect the intent of Congress.

The WIIN Act of 2016 allows for the modification or removal of the NSBL&D to allow for the passage of shortnose sturgeon, Atlantic sturgeon, and other migratory fish in order to mitigate the environmental impacts of the Savannah Harbor Expansion Project (SHEP) while also taking into consideration that the Corps must maintain the river conditions that were in place on the date of enactment. Congress clearly intended for the Corps to seek out a solution that would benefit both SHEP and the local communities. Unfortunately, as the recent drawdown test has proven, Alternative 2-6d does not appear to meet the requirements of the plain text of the legislation or the intent of Congress when it passed the WIIN Act. Communities like North Augusta and Augusta have invested millions in improvements along their waterfront and to say that Congress

PRINTED ON RECYCLED PAPER

intended to thwart the economic growth by eliminating or severely hampering access to the river would be wrong. We encourage the Corps to consider the intent of Congress and to only pursue an alternative that fulfills the environmental requirements of SHEP while also protecting the investments of our riverfront communities.

We would also like to address the Corps' stance regarding the impact of the new structure on the depth of the pool. The 2016 WIIN Act mandates that the Corps build a structure that is "able to maintain the pool for water supply and recreational activities, as in existence on the date of enactment of this Act." The Corps' stated that their implementation guidance "interprets the language to mean the current functionality of the pool must continue to allow for water supply, recreation and navigation as it did on the date of the enactment" and further argues that the alternatives currently being considered "maintain[s] this functionality." However, we find this statement to be inaccurate given the reduced river level prohibited individuals from utilizing their docks for recreational activities, such as fishing, boating, kayaking. In addition, local industry has expressed concern that the preferred alternative will not maintain the pool necessary to supply their water intakes. We would like to understand how the Corps can justify that the preferred alternative maintains the functionality of the pool given the results of the recent drawdown and the fact that the test was aborted.

In closing, we ask that the Corps take into close consideration the intent of Congress as you select the final alternative. We must protect our riverfront communities and ensure the Corps follows the law to ensure that the water supply and recreational activities are functional as they were on date of enactment.

We look forward to continued engagement with you regarding the future of the NSBL&D and we appreciate your cooperation as we work together to ensure that our riverfront communities continue to prosper.

Sincerely,



Lindsey O. Graham
United States Senator



Johnny Isakson
United States Senator



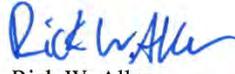
Tim Scott
United States Senator



David Perdue
United States Senator



Joe Wilson
Member of Congress



Rick W. Allen
Member of Congress

Cc: Brigadier General Diana M. Holland, Commander, South Atlantic Division, U.S. Army
Corps of Engineers

APPENDIX C

Report on Hydraulics Methodology, April 15, 2019

REPORT ON HYDRAULICS METHODOLOGY

Savannah River at Augusta Georgia and North Augusta, South Carolina

Thomas Heard Robertson, PE, AICP, RLS

April 15, 2019

Introduction

The Corps of Engineers conducted a live test during the week of February 11, 2019 of the hydraulics of the reach of the Savannah River that extends from the New Savannah Bluff Lock and Dam upstream to the base of the Augusta shoals. This section is approximately seventeen (17) miles long and includes the waterfronts of both the City of Augusta, Georgia, and the City of North Augusta, South Carolina. The “drawdown” was conducted as a simulation of the fixed-weir pool that might result from implementing the recommended alternative for a rock weir fish passage proposed to be constructed in place of the Lock and Dam, as mitigation for the assumed loss of population of the endangered shortnose sturgeon due to the Savannah Harbor Expansion Project.¹

The stated intent of “the pool simulation was to allow members of the public and stakeholders along the Savannah River to observe the conditions they could expect with Alternative 2-6D, a fixed weir structure, in place of the current lock and dam.” Among the goals was to demonstrate the anticipated pool level and extent during average flow conditions (between 5,000 and 8,000 cfs), and “to verify the predictions made with the riverine model for the depth attenuation through the pool. If necessary, adjustments will be made to the model to better represent the actual condition.”²

Observations of water levels during the simulation showed water levels that were much lower than those predicted by the model (0.95 foot observed versus 3.3 feet predicted.) Therefore, it is obvious that the hydraulic models used in the Draft Report are all flawed and do not accurately represent the actual water surface profiles on the Savannah River.

¹ US Army Corps of Engineers, Savannah District, “Operation Plan for Fixed Weir Pool Simulation, Savannah Harbor Expansion Project Fish Passage at New Savannah Bluff Lock and Dam,” January 25, 2019, pp. 2-3, copy in the Office of the Mayor, North Augusta, SC.

² *Ibid.*

How might these drastic differences be explained?

Purpose

This report is intended to present the findings of our study of some of the probable causes of the differences between the observed water surface elevations and those predicted by the Corps of Engineers Draft Report dated February 2019.³

Summary of Water Elevations: Observed and Calculated

The following table summarizes the water levels from the Draft Report and from other sources as shown in the footnotes below it. While the chart may be used to make any number of comparisons that the reader may wish to study, it is noted that the actual water elevation was 111.23 (NAVD 1988) at the Fifth Street gauge, which was 3.0 feet less than the predicted water surface elevation of 114.2 (NAVD 1988) produced by the HEC-RAS model for Alternative 2-6d for a flow rate of 8,000 cfs.

Table1: Water Level Comparisons

Description	Water Elevations				Notes
	Lock & Dam ^a		Fifth Street Bridge ^b		
Datum	NGVD 1929	NAVD 1988	NGVD 1929	NAVD 1988	Assumed difference = 0.8'
Normal pool per original design ^c	115.0 - 114.5	114.2 - 113.7	115 N/A	114.2 N/A	
Corps's current operations					
"Normal" ^d	114.0 -114.5	113.2 - 113.7	115.1	114.3	
Range ^e	112.0 - 115.3	111.2 - 114.2	N/A	N/A	
Usual Levels (non-flood) per USGS gauges ^f	115.0 ^g	114.3	115.0	114.3 ^h	Approximate Water Year 2018 year-long medians, by inspection
Alternative Simulations Q= 8000 cfs from HEC-RAS Summary ⁱ					Elevations Produced from Questioned Model
Existing	114.0	113.2	116.1	115.3	Probably wrong
No Action Alt	114.0	113.2	116.1	115.3	Probably wrong
Alt 1-1	113.9	113.1	116.0	115.2	Probably wrong
Alt 2-6a	112.6	111.8	115.4	114.6	Probably wrong
Alt 2-6d	111.7	110.9	115.0	114.2	Inconsistent with observations 2/15/2019

3 US Army Corps of Engineers, Savannah District, U.S. Army Corps of Engineers Report “Savannah Harbor Expansion Project, Georgia and South Carolina: Fish Passage at New Savannah Bluff Lock and Dam Integrated Post Authorization Analysis Report and Supplemental Environmental Assessment, February 2019.

Description	Water Elevations				Notes
	Lock & Dam ^a		Fifth Street Bridge ^b		
Datum	NGVD 1929	NAVD 1988	NGVD 1929	NAVD 1988	Assumed difference = 0.8'
Actual Elevations February 15, 2019	111.08	110.28 ^j	112.03	111.23 ^k	Flow rate at NSBLD was 7,270 cfs, near 8,000 cfs.
Desired by Cities and Counties ^l	N/A	N/A	115.2	114.5	

Note: The actual instantaneous flow rates in the Savannah River on the morning of February 15, 2019, were 7,270 cfs at NSBLD and 5,422 cfs at Augusta Canal Diversion Dam

References:

1. Lock and Dam United States Geological Survey (USGS) gauge is located just upstream. Datum is NGVD 1929.
2. Fifth Street USGS gauge is located on first pier from Georgia side. Datum for the recording gauge is NAVD 1988. Zero of the recording gauge is 100.00. Note that the datum for staff gauge is NGVD 1929. Zero of the staff gauge (and previous recording records) is Elevation 102.06. Verified by field surveys by Cranston Engineering Group, P.C.
3. Construction plans: *Rehabilitation of Gates and Piers, New Savannah Bluff Lock and Dam*, Plate S-500, 12 March 1995; and Corps of Engineers, U. S. Army, Savannah, Georgia, District, *Special Flood Hazard Information Report, Savannah River, Augusta, Georgia*, August 1971, p. 7.
4. Draft Report, Appendix A, p. A-19. USGS records for Water Year 2018 contradict the Corps's assertion of operating range.
5. Draft Report, 2.2.2. Hydrology and Floodplains, p. 18.
6. Inspection of records of USGS gauge records for Water Year 2018 (October 1, 2017—September 30, 2018).
7. Gauge 02196999 at New Savannah Bluff Lock and Dam.
8. Recording Gauge 02126670 at Jefferson Davis (Fifth Street) Bridge.
9. Draft Report, Appendix A, Table 8. Summary of HEC-RAS Results, p. A-41.
10. Gauge 02196999 at New Savannah Bluff Lock and Dam.
11. Recording Gauge 02126670 at Jefferson Davis (Fifth Street) Bridge. Verified by actual field survey by Cranston Engineering Group, P.C. at Elev. 111.20 (NGVD 1988) on February 15, 2019 at 11:13 am EDT.
12. Resolutions by Augusta, North Augusta, Aiken County, and Columbia County.

Discrepancy in Definition of Existing Conditions Elevation

Note that a separate salient issue that materially skews the conclusions of the Corps's Report is that the Corps assumed the low side of the current normal operating level range as the "Existing" conditions at the NSBLD to compare its hydraulic models for the alternatives, which is one (1.0) foot lower than the actual operating levels reported by USGS for the average day. The real ordinary operating level is Elevation. 114.2, not 113.2 (NAVD 1988).

Problem Statement

The pool simulation was a prime opportunity to test the validity of the computer simulations models using the subject of those models: the Savannah River itself. On February 15, 2019, the

total water level drop in the reach from Fifth Street (111.23, NAVD 1988) to the Lock and Dam (110.28, NAVD 1988) was 0.95 feet.⁴ This amount is only one-third of the difference of 3.0 feet predicted by the Corps's 8,000 cfs model.⁵

Using the actual drop over the 12.0-mile reach and the corresponding flow rate occurring at the Lock and Dam at the time of 7,270 cfs just downstream from the Lock and Dam, the input values for the model can be tested.⁶

An additional test can be made using the measured flow rate of 5,422 cfs at the Augusta Canal Diversion Dam upstream for the same time frame.⁷ (See calculations under Analyses below.) This location is at the head of the Augusta shoals above the entrance to the reach in question; hence, the flow at the Canal Dam would be less than the real flow in the reach, because it does not include inflows from major creeks between the Canal Dam and the NSBLD.

A hypothesis to explain the observed discrepancies in water levels is that the Manning's "n" value, (the critical input value that quantifies the roughness of the channel in the basic Manning equation for open channel flow and used in the HEC-RAS simulations) does not reflect the actual physical conditions of the river bed and banks. Analyses of these observations will be performed to test the calibration of the HEC-RAS model.

Analyses

Values of Manning's "n" for the River Channel

The calculations on the following pages use a snapshot in time as a physical model to check the selection of Manning's "n" in the Corps's river channel in the HEC-RAS model for two measured flow rates that are a very similar bracket to the low flow conditions assumed by the Corps (5,000 cfs to 8,000 cfs) for Alternative 2-6d.

4 USGS Recording Gages 02196670, 02196999, and 02197000.

5 Corps of Engineers, Analysis Report, Appendix A, Table 8, p. A-41.

6 USGS Recording Gage 02197000. A corresponding flow rate of 5,422 cfs at the Augusta Canal Diversion Dam on the morning of February 15, 2019, supports the approximate flow through the reach. This does not include flows from major creeks between the Canal Dam and the NSBLD.

⁷ A corresponding flow rate of 5,422 cfs at the Augusta Canal Diversion Dam occurred on the morning of February 15, 2019.

Table 2: Manning’s “n” Values

Estimate Manning’s “n” from Drawdown					
Use snapshot in time as a physical model to check selection of Manning’s “n” in the Corps river channel model for Q= 8,000 cfs for Alt 2-6d.					
Observations:					
February 15, 2019, 11:13 am					
Givens:					
Water Surface Elevations @ . . .					
Fifth Street gage = 111.23 (1988) ^a					
Check: Cranston Survey = 111.20					
NSBL&D W.S. elev = 110.28 (1988) ^b					
Case I – Maximum Discharge 7,270 cfs					
Q = 7,270 cfs Downstream @ NSBL&D, from USGS ^c					
Depth at 5th ≈ 9.5 – 1 = 8.5' (approximate, based upon Corps' average depth) ^d					
Width at 5th ≈ 700' (approximate, scaled from Quad Sheet)					
River Mile at 5th – 199.5 ^e					
River Mile at NSBL&D – 187.5					
Velocity @ 5th = 0.08 fps (seems very small, might not be reliable; therefore ignore) ^f					
Assume Cross Section at 5th Street approximates the reach.					
A	=	d x w	8.5 x	700 =	5,950 feet ²
WP	≈	700 + 2(8.5)	= 17	=	717 feet
L	=	199.5 - 187.5	= 12 miles, or		63,360 feet
h	=	111.23 - 110.28		=	0.95 feet
S	=	0.95 / 63360		=	0.0000149937
V	=	Q/A = 7270 / 5950		=	1.222 feet/sec
R	=	A/WP = 5950 / 717		=	8.298
Manning's Equation					
V	=	1.486 / n	x R ^{2/3}	S ^{1/2}	
n	=	1.486 / V	x R ^{2/3}	S ^{1/2}	
n	=	1.486 / 1.222	= 1.216 x	4.099 x	0.00387 = 0.019
<u>Minimum "n" value</u>	=	<u>0.019</u>	*		
<u>* Compare to 0.033 and 0.031 used by the Corps.</u>					

Case II – Minimum Discharge - 5,422 cfs

$$Q = \begin{array}{r} 5,094 \text{ new}^9 \\ + \quad \underline{328 \text{ leakage through dam}} \\ 5,422 \text{ cfs} \end{array}$$

Depth at 5th $\approx 9.5 - 1 = 8.5$

Width at 5th $\approx 700'$ (scaled from Quad Sheet)

River Mile at 5th – 199.5

River Mile at NSBL&D – 187.5

Velocity @ 5th = 0.08 fps (seems very small, might not be reliable; therefore, ignore)

Assume that Cross Section at 5th Street approximates the reach.

$$A = d \times w = 8.5 \times 700 = 5,950 \text{ feet}^2$$

$$WP \approx 700 + 2(8.5) = 17 = 717 \text{ feet}$$

$$L = 199.5 - 187.5 = 12 \text{ miles, or } 63,360 \text{ feet}$$

$$h = 111.23 - 110.28 = 0.95 \text{ feet}$$

$$S = 0.95 / 63360 = 0.0000149937$$

$$V = Q/A = 5,422 / 5950 = 0.911 \text{ feet/sec}$$

$$R = A/WP = 5950 / 717 = 8.298$$

Manning's Equation

$$V = 1.486 / n \times R^{2/3} \times S^{1/2}$$

$$n = 1.486 / V \times R^{2/3} \times S^{1/2}$$

$$n = 1.486 / 0.911 = 1.631 \times 4.099 \times 0.00387 = 0.026$$

Maximum "n" value = 0.026 *

* Compare to 0.033 and 0.031 used by the Corps.^h

Conclusion:

The Corps' selections of Manning's "n" understate the water level drops in the reach (i.e. overstate the resulting stages). This is consistent with the dramatic drops observed on February 15, 2019, compared to their prediction of "one to two feet." In fact, the water level at 5th Street was three (3) feet lower than their prediction for Alternative 2-6d. (114.2 - 111.23 = 3.0')

References:

- a. USGS Recording Gage 02196670 (1988 Datum)
- b. USGS Gage 02196999 (1929 Datum)
- c. USGS Gage 02197000
- d. Corps Cross Section, powerpoint slide for Alt 2-6d. Less one foot, observed
- e. 1971 Corps Flood Hazard Report
- f. USGS Gage 02196670
- g. Records at Augusta Canal Diversion Dam. See next page hereof.
- h. Corps Report, February 2019. Appendix A, p. A-16

Check Q by Augusta Canal Diversion Dam

Elevation of crest = 157.1
Water level 2/15/19 = 158.1 ± ⁱ
Length = 1,650 feet

$Q = 3.087 L H^{3/2} = 913.087(1650)(1)^{3/2 j}$
Q = 5,094 cfs
Leakage through the dam = 328 cfs
TOTAL ESTIMATED FLOW = 5,422 cfs

Note: Augusta Canal was drained at the time.

Conclusion: Therefore, Q=7,270 cfs seems a reasonable estimate for the current purpose.

i. From Augusta Utilities Dept. records.

j. King & Brater, *Handbook of Hydraulics, Fifth Edition, p. 5-24.*

The analyses of the approximate test conditions show that Manning’s “n” probably lies between 0.019 and 0.026. These values are much different from either the 0.031 or 0.033 estimates used by the Corps.⁸ Their Draft Report states the following concerning this subject, “Manning’s n values for natural channels are difficult to quantify outside of a laboratory setting and are subject to the professional judgement and experience of the hydraulic engineer.”

Values of Manning’s ‘n’ for the Weir

The Draft Report also covers selection of Manning’s n values for the weir itself, adapting the figures from the rock weir structure of the Cape Fear River Dam Removal and Fish Passage, which ranged from 0.056 to 0.078, and “ultimately landed on a conservative n-value for the rock ramp of 0.08”⁹ (Emphasis added.) Their adopted value lies outside the range from which it was derived. In fact, for low flows the higher n-value is not conservative at all. It will predict higher upstream stages than would result from choosing a lower value. This would produce the same type of erroneous elevation difference between predicted and actual that was observed during the February 2019 drawdown.

Discussion of Results and Conclusion

The drawdown furnished the best “laboratory setting” of all, the full-sized physical model of the Savannah River itself. The river itself proved that the water level drop at Fifth Street was at least

8 Corps of Engineers, Analysis Report, Appendix A, p. A-15.

9 Draft Report, Appendix A, 2.1.2. Geometry Modifications, p. A-5.

three times that which the Corps's simulations had predicted.¹⁰ The real difference was 0.95 foot vs. the predicted difference of 3.3 feet, a variance of 2.35. Thus, the HEC-RAS model was off considerably in its prediction of the water surface elevation. This variation is very significant where small differences in elevation make big changes in usefulness of the waterway. The analyses above show that the discrepancy may be explained, at least in part, by a difference or inaccuracy in selection of the input values for Manning's "n".

In conclusion, the hydraulic models used in the Draft Report are obviously flawed and do not accurately represent the actual water surface profiles on the Savannah River, bringing into question all of the conclusions of the entire Corps Draft Report based on the flawed water surface profiles.

Respectfully submitted:

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Georgia PE No. 11289
South Carolina PE No. 7408

Peer Reviewed:

Richard E. McLaughlin, PE

SEALS:



¹⁰ One of the Goals and Objectives of the drawdown was to "verify the predictions made with the riverine model for the depth attenuation through the pool. If necessary, adjustments will be made to the model to better represent the actual conditions." See "Operation Plan for Fixed Weir Pool Simulation, Savannah Harbor Expansion Project Fish Passage at New Savannah Bluff Lock and Dam", January 25, 2019, pp. 2-3, copy in the Office of the Mayor, North Augusta, SC. Because the predictions and the actual conditions of elevation were grossly different, all of the hydraulic models are likely similarly wrong, so that adjustments must be made to model and all of its simulations that underlie the report. The report must be amended or republished. The Cities reserve the right to make additional comments when the corrected data is made available, because the Draft Report is erroneous.

APPENDIX D

Hydraulic Modeling and Discrepancies Observed During Drawdown

New Savannah Bluff Lock and Dam

Hydraulic Modeling and Discrepancies Observed During Drawdown

4/15/2019

Introduction

This memorandum summarizes an initial review related to the hydraulic modeling results and implications related to the prediction of the water surface elevations and hydraulics within the alternatives and upstream of the New Savannah Bluff Lock and Dam (NSBLD) as presented in the Savannah Harbor Expansion Project, Georgia and South Carolina: Fish Passage at New Savannah, Bluff Lock and Dam, Integrated Post Authorization Analysis Report and Supplemental Environmental Assessment, Dated February 2019 by the U.S. ARMY CORPS OF ENGINEERS SAVANNAH DISTRICT (USACE), herein referred to as the Draft Report. Note that water surface elevations upstream of the NSBLD are sometimes referred to as pool elevations as the river is impounded upstream of the NSBLD and is controlled by modulating the gates in the NSBLD to near lake-like or “pool” conditions over the vast majority of the time. Various alternatives including an alternative recommend by the USACE are presented in the Draft Report include modification or replacement of the lock and dam with a river-wide rock ramp or parallel rock ramp fish passage to provide passage for various species of fish including the Atlantic and Short Nose Sturgeon.

This initial review also compares hydraulic modeling results with gage data from the USGS recorded during the drawdown conducted during the third week of February 2019.

Other comments and observations on the Draft Report and drawdown including more detailed discussions on impacts of the observations and expert opinions expressed below are presented in the Technical Comments of the Cities of Augusta, Georgia and North Augusta, South Carolina, April 15, 2019 (Technical Comments), and in the Legal Comments of the Cities of Augusta, Georgia and North Augusta, South Carolina, April 15, 2019 (Legal Comments).

General Observations and Opinions

The following observations are based upon information provided in the Draft Report, HEC-RAS hydraulic models provided by the USACE, various calculations, and expert opinion.

GO-1. Lowering the Upstream Pool.

All presented alternatives presented will lower the historic water surface elevations and decrease the depths within the upstream pool. All alternatives will lower the pool surface water elevation. Some alternatives will lower the upstream pool through an approximately 17-mile-long upstream reach of the Savannah River. All will increase velocities in the pool upstream of the NSBLD. Lowering of the pool and resulting affects is the most significant impact to the upstream reach through the greater Augusta area, particularly both Augusta and North Augusta. Impacts from lowering of the pool have significant detrimental implications as outlined in the Technical and Legal Comments.

Because of the importance and obvious sensitivity, supporting prediction in the upstream pool elevation in the evaluation of alternatives should be paramount in the development, analysis, evaluation, costing, and ultimate selection of the alternatives.



Figure 1
Photo Taken During the Drawdown

Lowering of historic water surface in the pool upstream of the NSBLD was predicted in the Draft Report, however the degree of the lowering of the pool elevations upstream were vastly under-predicted by the Corps as outlined below. The extent upstream of the lowering was not presented for each alternative.

Presented alternatives that include a river-wide rock ramp fish passage, and in some cases the other alternatives, will also:

GO-2. Increase Flooding

Alternatives will result in increases in upstream water surface elevations experienced during flood flows and/or significant excavation and construction of a channel (referred to in some alternatives as a Floodplain bench) in the park adjacent to the NSBLD (NSBLD Park). This excavation is needed to create a “floodplain bench” – essentially an overflow channel or flood conveyance channel. This a result of efforts to off-set the reductions in flood capacity (conveyance) resulting from placing tens of thousands of cubic yards of rock and fill within the river bed to form the rock ramp fish passage.

Alternatives that increased the 100-year flood level were reportedly dropped from consideration. However, invalid or questionable assumptions related to fish passage requirements and the acceptability of eliminating most of the NSBLD Park and its desirable attributes may alter or eliminate the presented alternatives. Some hydraulic analysis was presented for lesser flood flows (such as the 2-year) that occur more frequently and are known to cause damage to land owners, however these results were not adequately included in the assessment of impacts, costs, or selection criteria of the alternatives.

GO-3. Increase Fluctuations in the Seventeen Mile Reach

All alternatives will increase the variability in the water surface upstream of the dam in the pool. The pool level will fluctuate much more frequently below flows of 25,000 cfs or about 95% of the time. Current stability in the pool elevation is provided by the five 60-foot long vertical gates of the NSBLD that are operated to manage pool levels, thereby creating stable lake-like conditions upstream of the dam.

Identification and related significance of this issue was not made in the Draft Report. Evaluation, presented data, analysis, impacts or mitigation efforts and costs, and related criteria were not provided in the Draft Report. Criteria of 0.5 ft/day of variation was stated in the Operation Plan for Fixed Weir Pool Simulation, Savannah Harbor Expansion Project Fish Passage at New Savannah Bluff Lock and Dam, January 25, 2019, however failure of a wall occurred during the drawdown and no application or evaluation of this criteria for future conditions was provided.

GO-4. Sediment Impacts and Scour

Alternatives will decrease the sediment carrying capacity, impact the sediment bed, and change bathymetry and benthic conditions upstream of the NSBLD. In addition to stabilizing the elevation of the pool upstream of the NSBLD, the combined 300 feet of large gates act as sediment sluicing gates as they draw off the bottom of the channel. This substantial sluicing system will be eliminated in the presented alternatives. Evaluation of the increased deposition due to removal of the gates, such as sediment transport modeling, was not provided.

Qualitative opinion was presented supporting a conclusion of no significant impact, however based upon experience including extensive multi-dimensional sediment modeling efforts on a recent project on another river with a sediment-trapping upstream reservoir, acceptance of the provided opinion with no supporting analysis is not prudent or acceptable.

GO-5. Require Construction Related Hydraulic Analysis

Hydraulic analysis was not conducted for conditions created during the construction of the rock ramp or project accoutrements. Significant structures possibly as tall or taller than the existing dam, such as coffer dams and divider berms will be needed during construction. Large bypass channels and/or widening of the river adjacent to the rock ramp will also likely need to be constructed around the proposed rock ramp dam through the NSBLD Park and along the south bank to convey the large and continuous flows during construction. Structures needed to control water during the construction phase will be extensive and impactful to project costs, impacts to surrounding and upstream areas, sediment releases, aquatic resources, etc.

Hydraulic analysis is needed and appropriate at this phase as considerations will impact the development, analysis, evaluation, and selection of the recommended alternative.

As a result of impacts related to these and other issues, most all recreational uses of the pool will be significantly diminished, conditions of banks will be altered, aesthetics negatively impacted, property values may decrease, and other economically impactful consequences will occur. These are more thoroughly described in the Technical and Legal Comments.

Prediction of Pool Lowering

The Draft Report included estimates of impacts, namely lowering of the pool upstream of the NSBLD for the various alternatives furthered for consideration in the selection of their Recommended Alternative. These predictions were based upon hydraulic modeling using a program called HEC-RAS. The HEC-RAS model is appropriate for this level of analysis as well as much more refined analysis and is the standard of the industry and likely the most used hydraulic model for these types of projects in the country. However, reliable results of this or any other hydraulic model are dependent upon:

- Modeling the appropriate range of conditions,
- Appropriate selection of a wide variety of input parameters such as the Manning's Roughness Coefficient or "n" value, and
- Appropriate accuracy of the geometry.

Historic Water Surface Elevations

Establishment of existing or historic water surface elevations is critical to any evaluation of impacts. Within active rivers, this relates to a range of water surface elevations as the elevations can vary with flow, or in this case, by adjustment of the gates in the NSBLD. For this and many projects that include recreational uses and aesthetic consideration of a pool upstream of a dam, rock ramp, or other impounding structure, these flow ranges can be considered:

- **Minimum Levels.** Minimum or at least extreme lower levels of pool elevations are critical for historic and existing recreational uses and aesthetic considerations.
- **Typical Levels.** Normal pool levels can also be evaluated for comparative purposes.
- **Flood Flows.** Higher pool elevations occur during high flow ranges including various levels of flood flows. These are typically referenced by a probably type rating such as the 2-year, 10-year, 100-year, and even higher events. The definition of this nomenclature can be confusing, but as an example, a flow at least as high as the 10-year event will, on the average, occur once every 10 years.

Dams upstream of the greater Augusta area and the large upstream hydrologic basin provide this reach of the Savannah River with relatively consistent levels of flows as compared to many rivers. These consistent flows combined with the significant regulation of the pool elevations provided by the operation of the large gates at the NSBLD provide for near lake-like conditions in the pool upstream of the NSBLD.

Appropriate Flows for Alternative Evaluation

The Draft Report often references and reports pool elevations based upon a normal flow rate of 5,000 cfs. From the Draft Report: *"The flow used to evaluate the project impacts, with the exception of impacts to water supply intakes, is 5,000 cfs, the low average of the normal flow."* It is not clear why this flow rate was selected and we are not aware of a definition for *"the low average of the normal flow"*. However, flows lower than this occur over 25% of the time. This can be observed on Figure 7 of the Draft Report. **One-quarter of the time is very significant.** It can also be observed on this figure that the curve is quite "flat" from 3,600 (0.1%) to 8,000 cfs (66%). This again indicates that flows within this range occur much (66%) of the time and that there is a steep drop-off after 3,600 cfs.

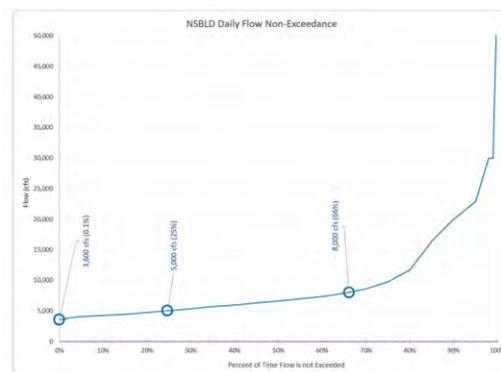


Figure 2
Non-Exceedance Curve from Draft Report

Pool Elevations at the NSBLD

On page 18 of the Draft Report it states that: “*The gates at NSBLD are used to help maintain a pool elevation between 111.2 and 114.2 NAVD88 upstream of the dam and are operated remotely from J. Strom Thurmond Dam*”. The report also states that flows are controlled up to 25,000 cfs. Furthermore, the basis of comparison used for the alternatives is 113.2 at the NSBLD. This is shown in Figure 3 which comes from Table 8 on page A-41 of the Appendix A of the Draft Report and can be verified in descriptions of the Alternatives such as in this description of the results for Alternate 2-6d.

*A hydraulic model (HEC-RAS) of the Savannah River incorporating the geometry configuration of this alternative was used to compute water surface elevations, depths, velocities, and flooding extents for the with-project condition. A range of flows for normal conditions (3,600cfs to 8,000cfs) and flood conditions (50% to 1% ACE) were evaluated using the hydraulic model. The results of the model indicate that this alternative would provide normal pool elevations between 109.7 and 110.9 NAVD88 near the lock and dam, with an elevation of **110.2 NAVD88 (3.0ft lower than existing) being representative of normal conditions**. The pool at 5th St. Bridge would be around elevation 112.4 NAVD88 (1.9 feet lower than existing) during normal flow conditions. Figure 31 shows where this alternative aligns slightly below the existing condition band.*

Adding three feet to the reported elevation of 110.2 (also shown in Figure 3 @ 5,000cfs) yields a water surface elevation upstream of the NSBLD of 113.2. This elevation does not appear to be supported by a provided statistical analysis. Such an analysis is readily easy due to the proximity of USGS gages; however, one was not readily found in the Draft Report.

USGS Gages Referenced

There is a stream gage (2197000) downstream of the NSBLD that records flow and water surface elevation, one upstream (2196670) that records water surface elevation, and one (2196999) at 5th Street Bridge that records water surface elevation. Note that the lower two gages (2197000) (2196670) record elevations in NVGD29 and 0.8' is subtracted from elevations provided at these gages to arrive at the NAVD88 datum as covered in the Draft Report.

Reduction of the Pool Elevation upstream of the NSBLD

A cursory check was made based upon data available off the USGS website. The analysis included about four years of data starting in March 16th of 2015 through March 12th, 2019 and included 15-minute increments. This date range was used as a quick check and a more in-depth analysis using a longer period of record and a review of the hydrology is needed. Based upon this limited range, an average of water surface elevation of 114 resulted. This elevation or higher also occurred about 50% of the time. **A water surface elevation of 113.2 or lower only occurred less than 5% of the time** over this four-year period.

In conclusion, the referenced water surface elevation of 113.2 is not justified and appears to be lower than gage records indicate.

Pool elevations for the various alternatives including the SHEP are shown below in Figure 3 and were provided in Table 8 on page A-41 and A-42 of Appendix A of the Draft Report. Some results of various alternatives are plotted in Figure 4.

113.3 and 115.3 National Geodetic Vertical Datum 1929 (NGVD29; 112.5 and 114.5 North American Vertical Datum of 1988 [NAVD88]) at the dam under the range of "normal" flows ("average" normal pool of 114.5 NGVD29). (NAVD 88)								
Pool Elev @ 3600 cfs (NAVD88)								
Station	Existing	SHEP	Alt 1-1	Alt 2-6a	Alt 2-6b	Alt 2-6c	Alt 2-6d	Alt 2-8
NSBLD	113.2	112.7	111.6	111	107.9	108.8	109.7	111.1
5th Street Bridge	113.9	113.5	112.5	112.1	110.5	110.9	111.4	112.2
Pool Elev @ 5000 cfs (NAVD88)								
Station	Existing	SHEP	Alt 1-1	Alt 2-6a	Alt 2-6b	Alt 2-6c	Alt 2-6d	Alt 2-8
NSBLD	113.2	113.2	112.1	111.6	108.3	109.3	110.2	111.9
5th Street Bridge	114.3	114.2	113.5	113.2	111.6	112	112.4	113.4
Pool Elev @ 8000 cfs (NAVD88)								
Station	Existing	SHEP	Alt 1-1	Alt 2-6a	Alt 2-6b	Alt 2-6c	Alt 2-6d	Alt 2-8
NSBLD	113.2	113.2	113.1	111.8	109.1	110	110.9	112.5
5th Street Bridge	115.3	115.3	115.2	114.6	113.6	113.9	114.2	114.9
Pool Elev @ 50% Annual Chance Exceedance (2-year) (NAVD88)								
Station	Existing	SHEP	Alt 1-1	Alt 2-6a	Alt 2-6b	Alt 2-6c	Alt 2-6d	Alt 2-8
NSBLD	114.8	114.6	114.6	115.3	114.1	114.5	114.8	114.5
5th Street Bridge	122.6	122.5	122.5	122.7	122.5	122.5	122.6	122.5

Figure 3
Summary Table of Alternatives – Data from Table 8 on page A-41 of Appendix A of the Draft Report

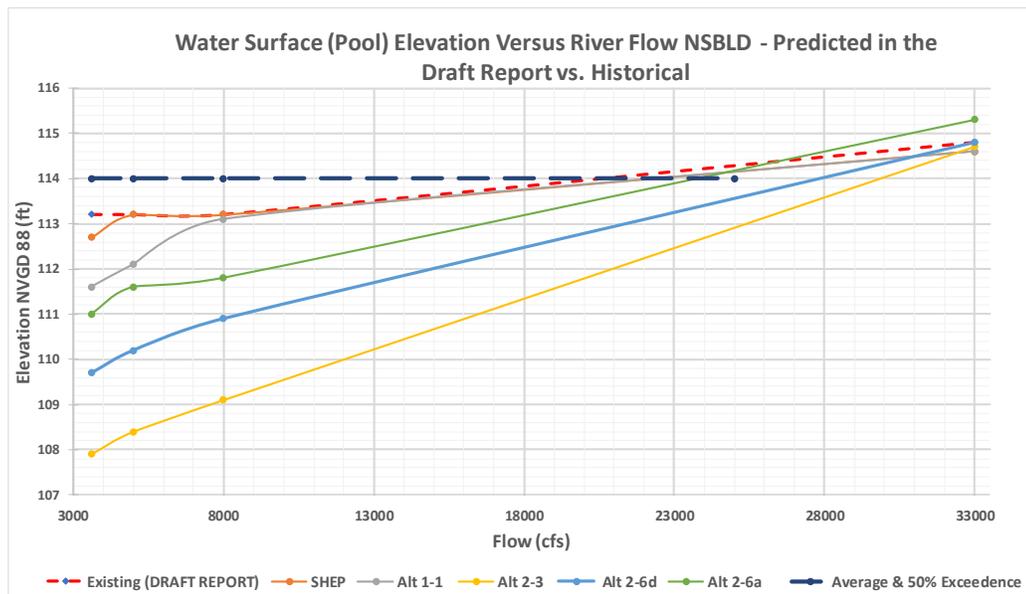
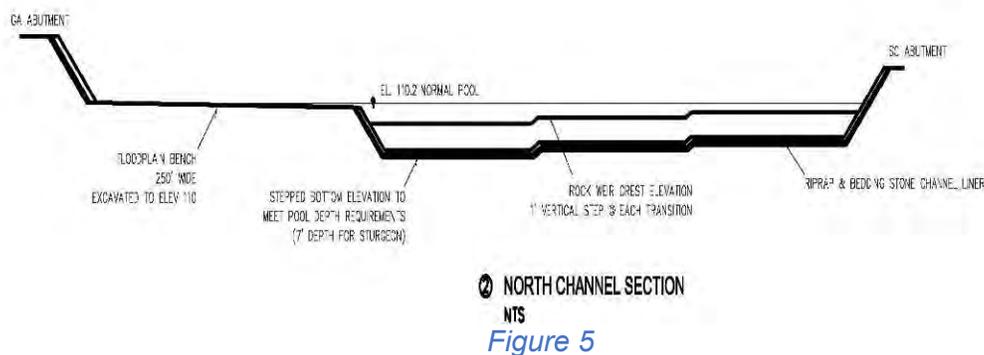


Figure 4 -Pool Elevations Upstream of the NSBLD – as Provided in Table 8 of the Appendix A of the Draft Report

Based upon the provided data and stream gage records, the rock ramp alternatives will result in a much lower pool elevation upstream of the NSBLD than historical conditions.

Rock Ramp

Review of the modeling that is used to predicted water surface elevations just upstream of the NSBLD for the alternatives was not reviewed in detail. At the proposed grade of 2% and the roughness coefficients provided, it is likely that the flow will be in a supercritical state, or at least go through critical depth at the crest of the rock ramp. Therefore, of primary concern is the configuration of the crest of the rock ramp. Figure 5 is a cross-section of the rock ramp fish passage of alternative 2-6d from the Draft Report. All the rock ramps in the various alternatives with rock ramps appear to be of a similar configuration.

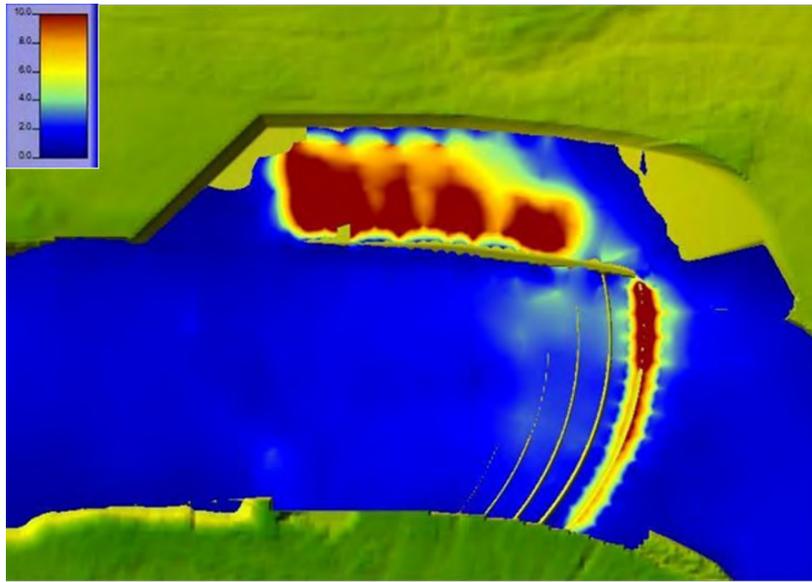


*Figure 5
Crest Section of the Rock Ramp (Alternative 2-6d)*

Figure 6 is a velocity output of the HEC-RAS model for Alternative 2-6d. The model provides estimation of the crest accurately because the geometry of the crest has a substantial impact on the water surface elevations predicted for the various alternatives with a rock ramp.

The Draft Report states that “*The weir would have an average crest elevation of 108.2 feet (NAVD88, 109.0 NGVD29).*” Concerns regarding the predicted high velocities in the fish passage and shallow depths at the crest may not be satisfactory to pass the targeted species. Therefore, the alternative concept for the crest and resulting rock ramp fish passage, as presented in all the alternatives with a river-wide rock ramp fish passage, may not satisfy passage requirements. While there are several ways to reduce velocities and increase depths, adaptations are likely to have a significant impact on the ability of the crest (of the rock ramp) to maintain the upstream pool elevations during lower flows while not raising flood flows or requiring further conveyance structures around the rock ramp.

Adaptations to the crests of the alternatives with a full-river width rock ramp may be necessary to create effective passage of target fish species. These adaptations are likely to require changes in the alternatives, lower upstream pool elevations more than currently predicted, cause other impacts, and ultimately influence a well-informed selection process.



*Figure 6
Velocity Output Figure of Alternative 2-6d at 8,000 cfs*

Reduction of the Upstream Pool Elevation

Comparison of water surface elevations at the 5th Street gage were emphasized in the descriptions and evaluations of the alternatives. Furthermore, there is a USGS Gage on the 5th Street Bridge that records the water surface elevation. For consistency and brevity, we will also focus on the impacts to the water surface elevation at 5th Street to somewhat quantify impacts farther upstream of the NSBLD.

Drawdown

A drawdown was conducted during the third week of February. The goals and objectives were stated in the Operation Plan for Fixed Weir Pool Simulation Savannah Harbor Expansion Project Fish Passage, at New Savannah Bluff Lock and Dam January 25, 2019.

This document states that:

There are several objectives for the simulation, outlined below, that will benefit the Corps and members of the public:

1. *Demonstrate to the public and stakeholders in the Augusta and North Augusta area the anticipated pool level and extent with a fixed crest weir in place of the NSBLD during average flow conditions (between 5,000 and 8,000 cfs). This simulation would allow the public and stakeholders to view the projected pool conditions for the recommended alternative for the SHEP Fish Passage Project (2-6D).*
2. *Verify the 2018 hydraulic analysis and calculations that concluded lowering the pool causes no issues with municipal and industrial water intakes located along the river within the pool. Communications with each water user will take place before, during, and after the simulation.*
3. *Verify the predictions made with the riverine model for the depth attenuation through the pool. If necessary, adjustments will be made to the model to better represent the actual conditions.*

4. Review the depths of the training wall and validate the areas that may need marking for compliance with Section 106 for historically significant cultural resources.
5. Capture aerial imagery of the simulated pool to further improve the shoreline mapping tool. The shoreline mapping tool was presented during a public meeting in November 2018 and can be found online at: <http://water.sas.usace.army.mil/nsbld/>.

The document goes on to state that:

The target pool level for the simulation is elevation 111 ft NGVD29 (converts to 110.2 NAVD88) as measured and observed at the USGS gage located just above the NSBLD (02196999). This is 1.5 feet below the normal minimum operating range at the NSBLD.

The pool WILL NOT be lowered quickly. It will be lowered slowly over several days targeting a pool change of no more than 0.5 ft per day. Lowering the pool slowly will ensure the river bank remains stable during the simulation.

Verification of the “riverine model for depth attenuation within the pool” has not been received as of this date. To review the accuracy of the HEC-RAS hydraulic modeling, we have reviewed gage data just upstream of the NSBLD and at 5th Street. Results of this review are shown in Figure 7. Figure 7 includes just a portion of the gage data during the drawdown. An extended plot of the gage data shows higher fluctuations in the flows and water surface elevations at the gages before and after the period shown from 2/13/2019 to 2/14/2019. Even during this period, there are fluctuations in flow and water surface elevations, however review of the gage data in other ways showed similar results. While there is error in applying steady state results to unsteady conditions and in how the gage data is interpreted, this initial review should be useful in interpreting impacts at this juncture and in driving home the needs for further investigation and to determine if further reconfiguration or redevelopment of the alternatives is prudent.

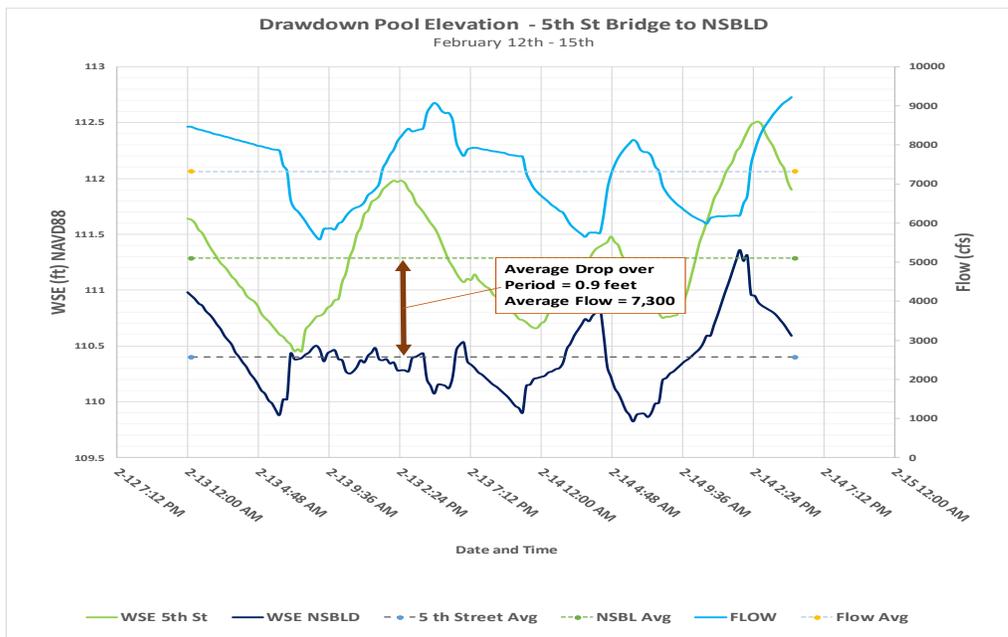


Figure 7
Observed Water Surfaces during the February Drawdown

The average flow during this period was about 7,300 cfs. The average pool elevation just upstream of the NSBLD was 110.4 (NAVD88) and the average elevation was 111.3 (NAVD88) at the 5th Street Bridge. These flows and surface water elevations are shown on Figure 7.

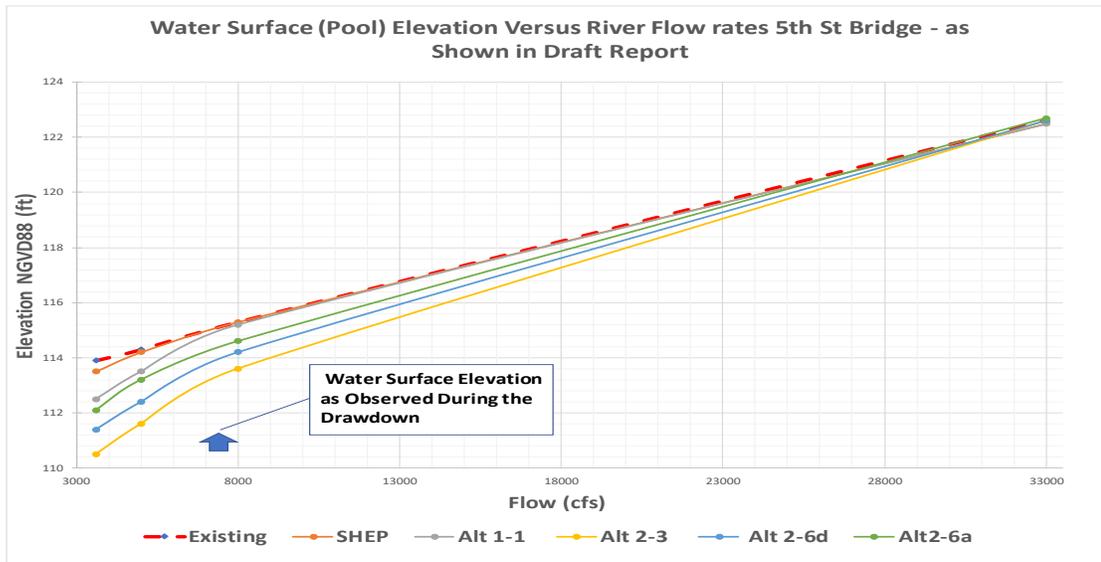


Figure 8
Predicted Pool Elevations at 5th Street

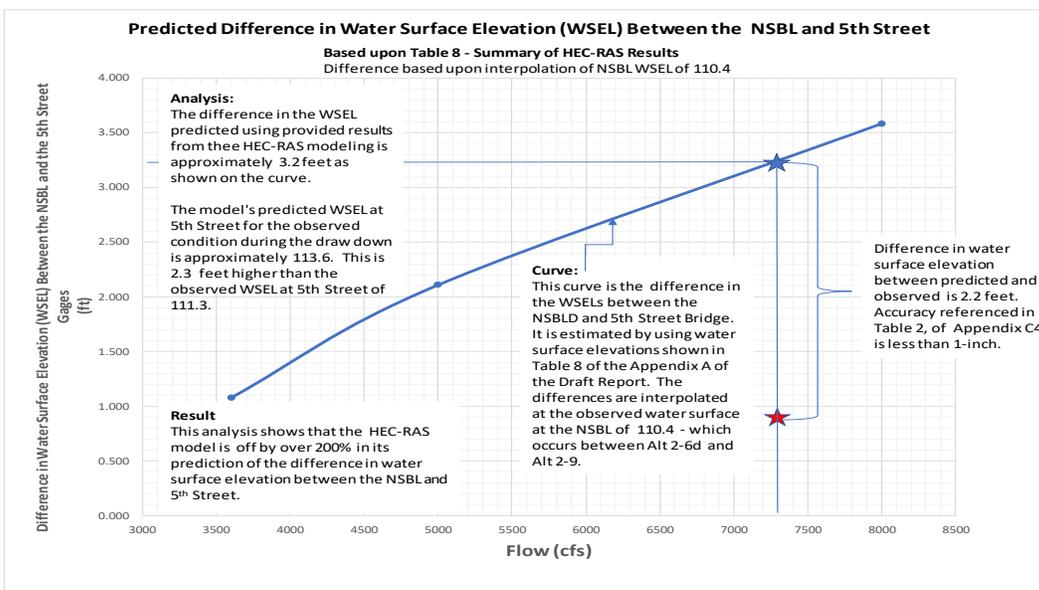


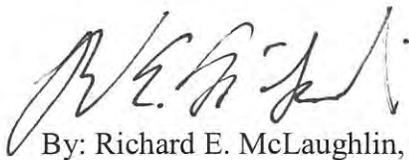
Figure 9
Comparison of Observed and Predicted Pool Elevations at 5th Street

In reviewing and comparing Figures 7, 8, and 9, it can be concluded that the elevations observed during the drawdown in the Pool at 5th Street are significantly lower than those predicted by the hydraulic model and presented in the Draft Report. The difference in water surface elevations between the gage just upstream of the NSBLD and that at 5th Street, is a practical and useful parameter in the evaluation of the accuracy of the HEC-RAS hydraulic modeling conducted by the USACE. The model predicted over three feet of difference in the water surface elevation between the gages, whereas the observed difference as estimated herein is less than one foot.

While this estimate may ultimately prove to be higher or lower, an error of a small fraction of this would not be acceptable – both in terms of modeling accuracy and for the purposes of developing, analyzing, evaluating, and selecting an alternative.

This represents an error of over 200% in the modeling accuracy.

It is likely that the selected Manning's Roughness Coefficient used in the HEC-RAS modeling in the impounded reach upstream of the rock ramp is too high and doesn't account for the depth of flow. However, given the recreation, economic, environmental, and other impacts related to decreases in the pool elevation; calibration and validation of the hydraulic model should have been conducted before the evaluation and even development of the alternatives.



By: Richard E. McLaughlin, P.E.



APPENDIX E
Savannah River Sediment Chemistry Data

Table of Savannah River Sediment Chemistry Data
River Miles 202, 298, and 190.
2006-2008

Note: Refer to Section I.2. for explanatory narrative.

Average concentrations from sediment samples

	RM 215	SC	RM 202	RM 198	HC	RM 190	BC	RM 185	RM 179	RM 148	RM 119	RM 61	units
% Solids	74.7	69.3	62.5	76.1	75.3	76.8	37.1	77.1	75.0	77.6	77.2	80.3	%
2,4,5-T	ND	28	35	ND	ND	ND	568	ND	ND	ND	ND	ND	ug/kg
2,4,5-TP (Silvex)	ND	17	120	ND	25	ND	ND	ND	22	ND	ND	ND	ug/kg
2,4-D	ND	ND	ND	ND	ND	ND	850	ND	ND	ND	ND	ND	ug/kg
2,4-DB	22	ND	440	89	ND	ND	ND	33	43	ND	ND	ND	ug/kg
4,4'-DDD	ND	ND	ND	ND	ND	ND	18	ND	ND	ND	ND	ND	ug/kg
4,4'-DDE	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.5	ND	ND	ug/kg
4,4'-DDT	ND	ND	ND	ND	ND	ND	25.0	ND	ND	ND	ND	ND	ug/kg
Aldrin	1.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/kg
alpha-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/kg
alpha-Chlordane	ND	ND	1.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/kg
Aroclor 1016	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/kg
Aroclor 1221	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/kg
Aroclor 1232	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/kg
Aroclor 1242	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/kg
Aroclor 1248	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/kg
Aroclor 1254	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/kg
Aroclor 1260	ND	ND	ND	ND	ND	ND	270	ND	ND	ND	ND	ND	ug/kg
Arsenic	1.2	1.0	1.2	0.8	0.8	0.7	3.9	0.5	0.9	0.9	0.8	0.6	mg/kg
beta-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/kg
Cadmium	0.0	0.1	0.0	0.0	ND	0.0	1.1	0.0	ND	0.1	0.1	0.0	mg/kg
Calcium	422.5	390.0	1117.5	262.5	102.0	265.0	2225.0	210.0	302.5	198.0	255.0	220.0	mg/kg
Chromium	9.9	10.5	13.7	7.5	24.3	4.4	32.5	5.4	3.8	3.2	4.4	2.6	mg/kg
Copper	2.3	4.9	8.0	2.3	2.2	1.5	33.2	1.7	1.3	0.9	1.5	0.8	mg/kg
Dalapon	ND	ND	ND	ND	ND	ND	ND	450.0	ND	550.0	ND	ND	ug/kg
delta-BHC	ND	ND	7.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/kg
Dicamba	ND	ND	57.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/kg
Dichloroprop	ND	ND	132	170	ND	20	13000	ND	38	24	20	ND	ug/kg

	RM 215	SC	RM 202	RM 198	HC	RM 190	BC	RM 185	RM 179	RM 148	RM 119	RM 61	units
Dieldrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/kg
Dinoseb	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/kg
Endosulfan I	ND	ND	2.2	ND	ND	ND	1.9	ND	ND	ND	ND	ND	ug/kg
Endosulfan II	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/kg
Endosulfan sulfate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/kg
Endrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/kg
Endrin aldehyde	ND	ND	ND	ND	ND	1.0	ND	ND	1.2	ND	ND	ND	ug/kg
Endrin ketone	ND	ND	ND	ND	ND	2.6	ND	ND	ND	ND	ND	ND	ug/kg
gamma-BHC (Lindane)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/kg
gamma-Chlordane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/kg
Heptachlor	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/kg
Heptachlor epoxide	1.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/kg
Iron	5400	7550	12500	4750	3025	3350	21375	3125	3225	2475	3650	2400	mg/kg
Lead	2.0	3.4	5.4	3.2	3.0	1.6	54.3	1.6	1.5	1.3	1.7	1.4	mg/kg
Magnesium	230.0	477.5	1377.5	425.0	130.0	108.7	1707.5	140.0	115.3	94.0	190.0	94.0	mg/kg
Manganese	1325.0	390.0	1555.0	735.0	73.8	465.0	1065.0	1375.0	1242.5	900.0	925.0	345.0	mg/kg
MCPA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/kg
MCPP	ND	ND	ND	4700.0	ND	ND	160000.0	ND	ND	ND	ND	ND	ug/kg
Mercury	ND	ND	ND	ND	ND	ND	0.5	ND	ND	ND	ND	ND	mg/kg
Methoxychlor	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/kg
Nickel	4.1	3.4	9.7	4.4	3.8	3.8	16.3	1.9	3.0	2.4	2.5	1.2	mg/kg
Potassium	170.0	327.5	1075.0	200.0	88.7	81.0	1177.5	105.3	88.5	73.0	123.5	50.0	mg/kg
Selenium	0.2	ND	0.4	0.3	ND	0.4	0.9	0.9	0.5	ND	ND	0.4	mg/kg
Sodium	50.0	93.0	133.0	89.5	95.0	84.0	623.3	82.7	76.7	88.0	30.5	61.0	mg/kg
TOC	145.0	1130.0	1400.0	1050.0	915.0	535.0	36145.0	450.0	8750.0	490.0	615.0	260.0	mg/kg
Toxaphene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ug/kg
Zinc	13.2	27.5	55.3	26.7	19.0	24.6	272.8	22.7	18.5	26.7	31.5	25.5	mg/kg

APPENDIX F

*River Vision Plan for the Savannah River for the City of Augusta, April
2019.*



River Vision Plan

for the Savannah River for the City of Augusta



April 2019

TABLE OF CONTENTS

I. RIVER VISION STUDY

Introduction Project

Goals Background

Historical Context and Existing Uses

River Activation and Upland River Reach Concepts

Community Benefits

Whitewater Concepts at NSBLD Next

Steps

II. APPENDICES

Appendix A – Concept 1 Whitewater Course with Dam

Appendix B – Whitewater Venue Concept

Appendix C – River Vision Concept

Appendix D – Economic Memorandum

SECTION I – River Vision for the Savannah River

INTRODUCTION

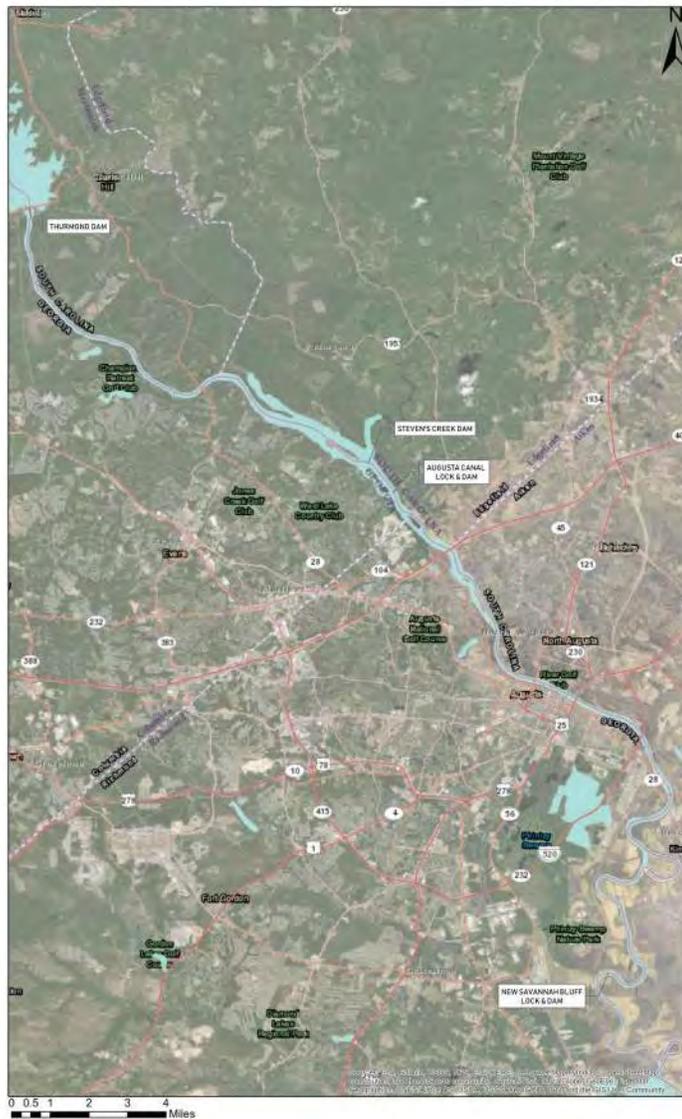
In 2018, The City of Augusta, Georgia engaged the Mclaughlin Whitewater Design Group and their team of consultants to develop a vision for the section of the Savannah River from the Thurmond Dam area down to the New Savannah Bluff Lock and Dam Park. This vision involves developing an in-river and river bank activation concept, focused on downtown Augusta, as well as evaluating the feasibility of adding a whitewater park to the New Savannah Lock and Dam Park (NSBLD Park). The park site itself is adjacent to the historic Lock and Dam structure. The United States Army Corps of Engineers (Corps) is proposing to remove the Lock and Dam and convert the NSBLD Park into a floodplain bench. The Corps's evaluation and work is ongoing, however the study of a whitewater venue at this location was evaluated prior to the release of the Corps's current preferred alternative. The Corps's current alternative eliminates most of the NSBLD Park and negates the opportunity of a whitewater venue at the NSBLD Park. The preservation of the park is keenly important to the overall vision plan described in this document. The park site is the anchor to the entire 36-mile vision plan, and it is our hope that through the Corps's process, the NSBLD Park will be maintained, and the future potential of the park can be realized.

The feasibility study and concept alternatives were developed with the following primary project goals:

- Healthy Ecosystem – connect upstream and downstream reaches and provide passage for sturgeon, shad, and bass.
- Safety – improve the safety of the river for all users.
- River/Whitewater Recreation – A basic objective identified was to connect upstream and downstream reaches for recreationalists. At the high end of the recreation spectrum, a “destination” whitewater park alternative was developed, with an objective to improve river access along the entire river reach.
- Utilize the Corps's Proposed Alternative – The Corps's objective at NSBLD is to create fish passage while maintaining current pool elevation and recreational components along the river reach. They have five (5) alternatives in total, with one (1) the preferred alternative. The City requested that we use a non-preferred alternative for the final concept.

PROJECT GOALS

The overarching goals of the River Vision Plan are to identify new recreation opportunities that capitalize on the benefits of the Savannah River as an underutilized asset for the city of Augusta. This vision plan will include nearly a 36-mile stretch of the Savannah River, beginning at Thurmond Dam area, then down through the heart of Augusta, continuing along a picturesque stretch of river to the NSBLD Park. This recreation corridor will identify new areas of connectivity to the river, highlight opportunities for enhanced recreation, and provide new social activities that utilize the river. The recreation corridor, once established, can have a significant impact on the city of Augusta by improving the economy and improving the quality of life for the residents and visitors through new ways to recreate, socialize and entertain. Figure 1 shows the stretch of river included in this vision.



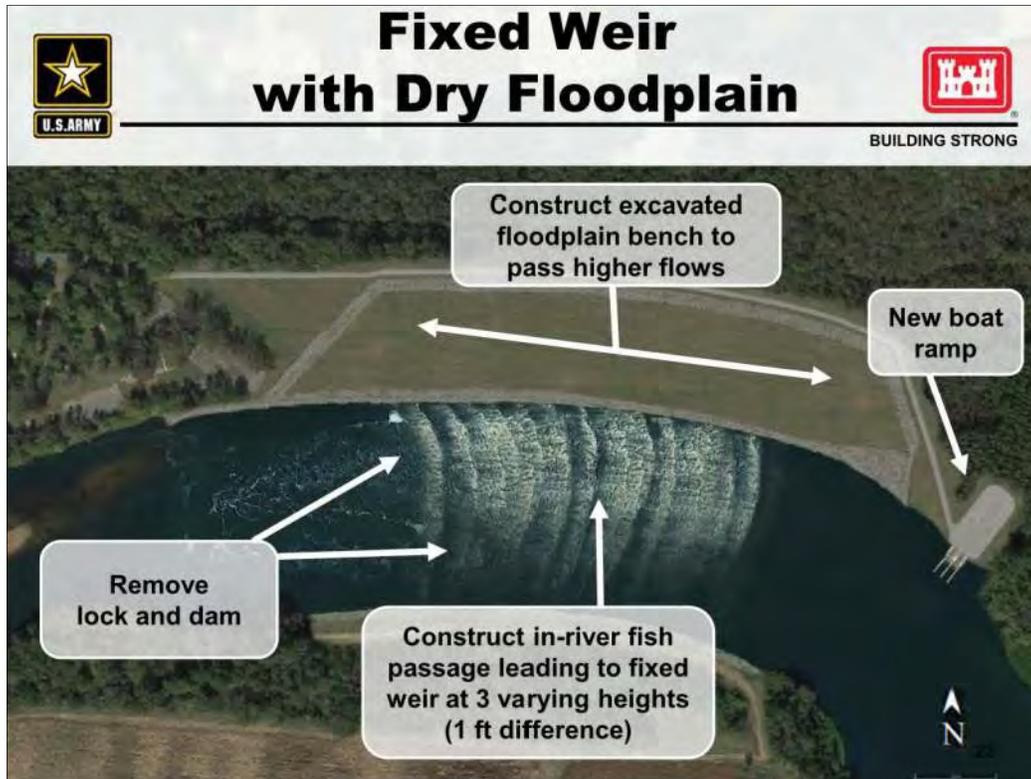
1. Figure 1 - River Reach Vicinity Map

BACKGROUND

Necessary elements for whitewater are flow, drop, and access. The stretch of river between Thurmond Dam and New Savannah Bluff Lock and Dam has all the required elements to create several world class whitewater courses. Along with current plans for modifications to the NSBLD, Steven’s Creek Dam and the Augusta Canal Diversion Dam are also slated for future modification that may include fish passage and river habitat restoration. These projects provide a regional wide opportunity to create a river recreational corridor from Thurmond Dam to New Savannah Bluff Lock and Dam.

With existing infrastructure along the reach, which includes river trails and docks, and potential future plans, some of which are discussed in this study, there is incredible potential to create a river recreationalist’s dream with multiple exit points along the way for users to explore the city, stop for food, and enjoy other activities along the shoreline. Additionally, the New Savannah Bluff Lock and Dam Park’s proximity to the Levee trail make it the perfect candidate for a unique destination for river recreation, outdoor adventure, and exploration. With Corps’s current plans for the NSBLD, the city of Augusta hopes to use the opportunity to improve the Park and turn it into a whitewater venue and implement some of the ideas explored in their Augusta Destination Blueprint Plan, Events Plan, and the 2016 Parks Master Plan.

The current Corps’s preferred plan is to remove the lock and dam and replace it with a fixed weir for fish passage. To maintain a similar pool elevation and mitigate flooding, the plan is to excavate the park and turn it into a dry floodplain. Their alternatives were designed to address required mitigation solutions due to SHEP and satisfy the WIIN Act. See Figure 2 below for a visual of the Corps’s preferred alternative (Alternative 2-6d).



2. Figure 2 – Corps’ Preferred Plan

This plan is seen to adversely impact the City of Augusta and they want to see an alternative plan chosen. The whitewater concept created for this study uses the Corps’s Alternative 1-1 design, which is discussed later in this study.

HISTORICAL CONTEXT AND EXISTING USES

The residents of Augusta enjoy the river reach through a variety of activities. There are a number of hike and bike trails, such as the Augusta Canal Historic Trail and River Levee Trail, and boating activities are a popular pastime on the water. A private marina and rowing center provide direct access to the river, and many people kayak at the shoals. An Iron Man race is also held each year in front of the Riverfront Marina Warehouse. Public access is limited to boat ramps at the NSBLD Park, which are an important historical and cultural space for the City.

In 1906 the Augusta Levee was constructed to control flooding in downtown Augusta, Georgia, and expanded in 1936. Initially, the Levee greatly restricted the public’s access to Augusta’s riverfront from downtown to the mouth of Butler Creek, but with the 1937 completion of the New Savannah Bluff Lock and Dam, and the adjacent, the Corps’s public Park provided direct access to the Savannah River.

The Corps’s creation of this public space allowed the locals a place to interact with the river for these past several decades. It has been a point of access for fishing, boat launching, and a gathering place for

the entire community. Indeed, its importance to the City, especially those who reside in South Augusta where fewer recreational amenities are available, cannot be understated.

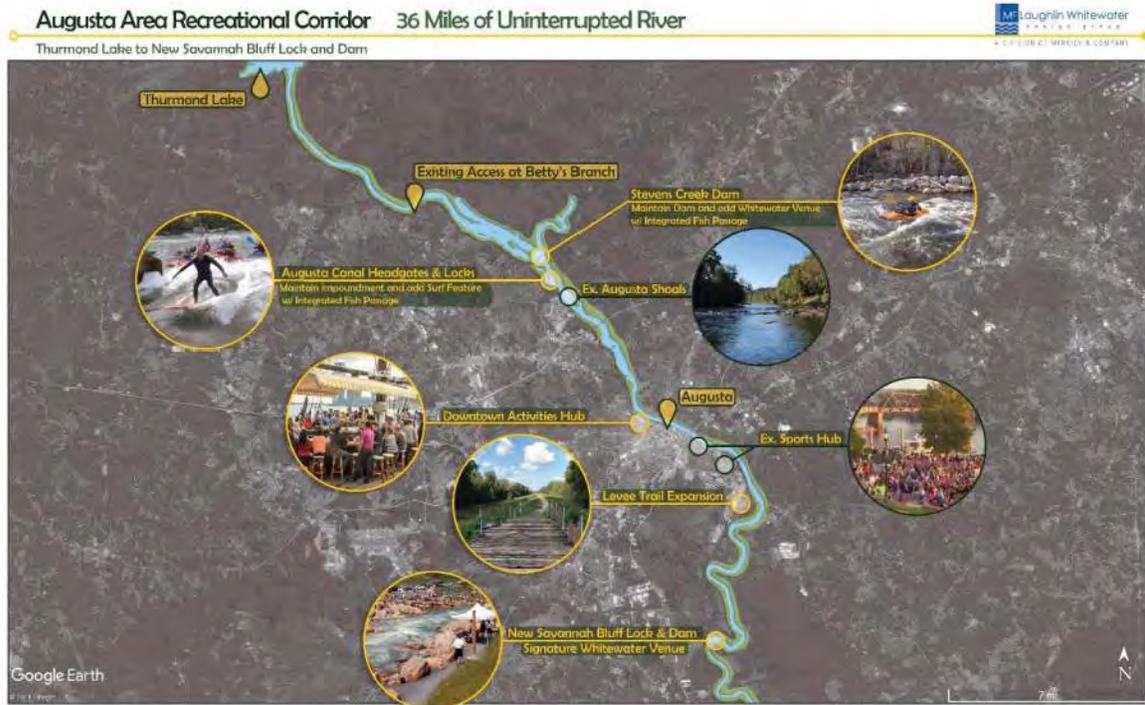
A key historical component to the inclusivity of the Park showed itself during the 1950-70s when the majority of the City of Augusta was segregated but the Park was not. It has served as a gathering place for all our citizens for over 65 years. Its pavilions have provided the location for hundreds, if not thousands, of family reunions, birthday parties, and civic meetings over time. It is an amenity that should remain with the community, and future plans must ensure the site's importance is recognized and maintained for future generations.

This site has been one of the main access points for bank fishing since at least the early 1950s, maintaining that access is imperative to the surrounding community to foster inclusivity and prevent gentrification. The two boat ramps that currently exist above and downstream of the dam are expected to undergo changes, however access to navigation between the current lock and dam site to the Lower Savannah Region, including to Savannah and the coast, should not be impeded.

Additionally, NSBLD Park sits on the confluence of two emerging bike/nature/walking trails whose development is ongoing. The levee, which starts above the remaining shoals approximately 20 miles upstream from the Park, creates an elevated path and contiguous trail through downtown Augusta ending at the Park. Over three-quarters of this levee has been converted into a trail with remaining miles slated for conversion in the next few years. The Butler Creek trail starts at Lombard Mill Pond near Fort Gordon Gate 5 and running the length of the creek ending at the NSBLD park. That trail is 20% completed and is slated to be finished in coming years.

RIVER ACTIVATION AND UPLAND RIVER REACH CONCEPTS

In developing an overall river vision concept plan for the Savannah River from Thurmond Dam, through Downtown Augusta and ending at the New Savannah Bluff Lock and Dam site potential ideas for community programming and activation were explored. Potential site locations focused on publicly owned property along the river within the city limits of Augusta. This plan would tie into the overall regional vision of the recreational corridor, providing both in-river and riverside activities along the entire reach for recreationalists and spectators. Main components of the vision include a whitewater course at Steven's Creek Dam, a surf feature at Augusta Canal, and a larger scale whitewater venue at New Savannah Bluff Lock and Dam. Recreationalists could put in above Steven's Creek Dam and float or boat all the way to New Savannah Bluff Lock and Dam or stop in downtown Augusta at the planned activities hub. See Figure 3 below.



3. Figure 3 - River Vision Concept

Three publicly owned sites were identified which include the Riverwalk, Marina Park, and the Lock and Dam site. Future redevelopment along Columbia Nitrogen Drive near the I-520 Bridge and the potential future redevelopment of the Depot Project near Marina Park may also bring increased activation east of downtown. These redevelopment sites are located along the Levee Trail and can provide an additional opportunity to connect to the river and a broader circulation connection along the riverfront.

Several potential programming and activation ideas were explored. The ideas were generated from community sessions held in September 2018 by Merrick and through background information including the Fall 2016 Report “Reshaping Augusta’s Relationship with the Savannah River”. Potential ideas include a whitewater course, ropes course, zipline, water taxi, river cruise, fireworks display, fishing access, boat access, event pavilion, gathering spaces, destination playground, trails, outdoor markets, disc golf course, and historic markers.

All of these ideas have potential compatibility with the lock and dam site and a potential synergy with the Pinizy Swamp Nature Park located just west of the Lock and Dam Park site. The water taxi, river cruise, zipline and fireworks display could be sited at the Riverwalk, Marina Park or the Lock and Dam site. These were explored in greater detail along with recommendations for markets and festivals at the Riverwalk and opportunities for the Levee Trail. See Figure 4 for a visual of the whitewater venue concept.

Water Taxi

- Potential to operate back and forth from North Augusta, SC to Augusta, GA as a privately operated service.
- Could connect the existing trail systems on both sides of the Savannah River.
- Potential stops at the Riverwalk, Marina, and Lock and Dam Park site.
- Could provide a regular service.
- A feasibility study should be conducted for further assessment and viability.

River Cruise

- Potential to operate between downtown Augusta and destinations along the river.
- Potential stops at the Riverwalk, Marina, and Lock and Dam park site.
- Could be rented/reserved for special events, such as a birthday party at the Lock and Dam Park, or day cruises on the weekend.
- A feasibility study should be conducted for further assessment and viability.

Zipline

- Potential location at the Riverwalk, Marina Park, or Lock and Dam park site.
- Operated privately by an outdoor recreation company.
- If located at the Riverwalk or Marina Park, it could operate as a standalone attraction that could provide connectivity across the river and a visual vertical element at the river.
- If located at the Lock and Dam Park, it could be combined with a ropes course/adventure destination.

Markets / Festivals

- Programming the Riverwalk could help bring people to the river.
- Potential redevelopment at the ‘Riverfront at the Depot’ may include a future entertainment venue that could attract people and visitors to the riverfront.
- Explore opportunities to enhance visual connection across the levee:
 - Enhance existing and/or building new pedestrian bridges and underpasses.
 - Provide more pedestrian access points through the levee. Would be required to have flood gates that would be closed during flood events.
 - Develop vertical elements along the Riverwalk that are visible from Downtown and draw attention and curiosity to the river side of the levees. Example might be art installations or pedestrian bridges with a strong vertical entrance.

Levee Trail

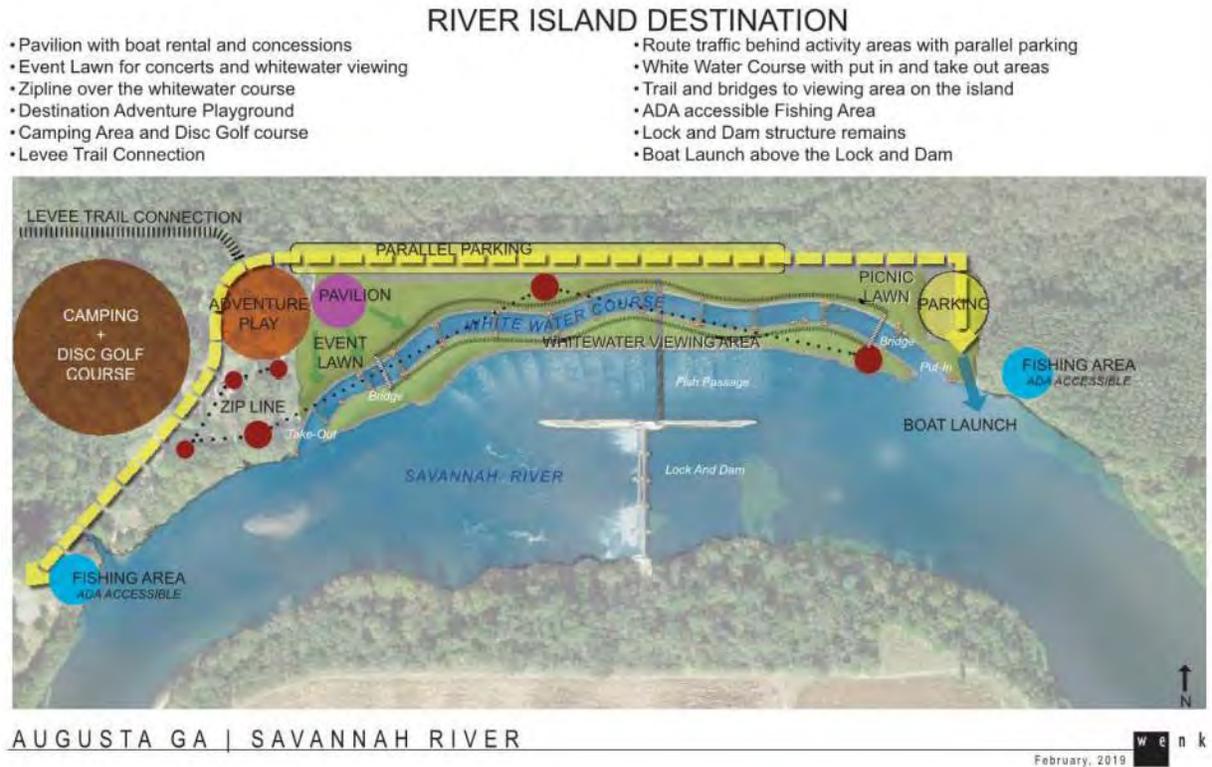
- Potential to be a city and regional destination.
- Create distinct character zones along the Levee trail as it passes through the urban areas to more rural and natural areas. Each zone could have its own identity and character that draws interest and a sense of discovery.
- Activation could draw people to the Downtown Riverwalk and encourage multi-modal transportation to the Lock and Dam park site.

Cities across the country are starting to look at infrastructure as opportunities for public space. Precedent examples include the Indianapolis Cultural Trail, Chicago’s 606, Atlanta’s Beltline, and New York’s Highline. An option was developed for potential site programming for the Lock and Dam site which includes the amenities and programs identified for the site from the overall river vision. This option creates a “River Island Destination”. The concept utilizes the Corps’s preferred concept of maintaining the existing lock and dam and providing an adjacent fish passage; and Merrick’s alternative of an adjacent whitewater course next to the fish passage. This alternative creates a destination island between the fish passage and whitewater course providing an ideal viewing area for the in-river recreation activities and the viewing of the fish passage channel. Two proposed pedestrian bridges connect to the island creating a walking and recreation loop through the site.

Access to the site could be via the water taxi or river cruise, via car, or via bicycle/pedestrian access along the Levee Trail.

A ‘Recreation Hub’ anchors the northern area of the site, creating an active focal point at the vehicular entrance. The pavilion is located in the center of the recreation hub and provides a gathering node for the event lawn, adventure play area, and zip line course. The pavilion would include restrooms and could include potential boat and tube rental for the whitewater course, concessions, and a small indoor event venue. The event lawn wraps the pavilion. A stage could be set up on the lawn for special events and performances along the river. The zip line crosses the river and meanders through the tree canopy adjacent to the adventure play area. The adventure play is also nestled in the tree canopy and could include a tree house theme, boardwalks, or ropes course. The adventure play is in close proximity to the Pinizy Swamp Nature Park and should complement the character and themes of the nature preserve. A camping area and disc golf course expands the recreation hub across the road to the north.

Parking is dispersed through the site along the entry road with a main parking and boat launch area at the upstream of the Lock and Dam. A picnic lawn and an ADA accessible fishing area is located in close proximity to the main parking area. A second picnic area is located along the creek near the entrance to the site.



4. Figure 4 - New Savannah Bluff Lock and Dam Whitewater Venue

COMMUNITY BENEFITS

There is tremendous opportunity with the modification of the dams to enhance the river system to restore natural function and habitat for the endangered sturgeon, to increase recreational use, improve safety, create economic development, and elevate the livability of the community. To achieve these objectives the project must improve access to the water, address existing safety hazards, enhance upland park spaces, make stronger connections into and through the river corridor, and create diverse and unique river recreation that will draw tourists and elevate the livability of the City.

River improvements that connect adjacent communities to the water and attract tourists have shown to create positive economic development. Economic Impact studies of river recreation projects in the USA show that the annual economic impact for a community can range from \$500k/yr to over \$40M/yr. There are many factors that influence these outcomes. Although an economic impact study has not been completed for this project, similar projects have produced annual economic impacts of over \$1M/yr. One example is in Columbus, GA where their local river was enhanced to improve ecology, access and water-based recreation. In 2016, an economic report was generated for Columbus, GA, and they showed considerable positive economic impact. The city has seen \$74 million in capital investment, along with 42 new businesses, several university extensions, 400 new jobs, and \$24 million in gross revenues, according to Uptown Columbus. Livability, city branding/image, attracting residents and retaining residents are additional positive economic impacts beyond these figures.

One unique aspect of this project is that modification to the dam to allow low hazard river passage would connect up to 36 miles of unimpeded river to be floated and paddled, which would be further enhanced by modification to Steven’s Creek Dam and the Augusta Canal. The recreational value and likely economic impact for Augusta would be significant. By connecting upstream and downstream reaches, the river could support guided float and fishing trips, as well as, provide a great recreational experience for local residents. Such a recreational amenity would be marketable to attract tourists, fisherman and other river users from the region.

MWDG recommends that if economic impact and development is identified as a primary project goal that an economic study be completed for the project. A shorter memorandum was completed for this vision and is included in Appendix D.

WHITewater CONCEPTS AT NSBLD

The concept created is based on Alternative 1-1 from the Corps. Alternative 1-1, removes the lock structure but retains the dam (and gates) to maintain pool elevation upstream. A fish ramp is added in place of the lock. A portion of the existing park area is also cut away to make room for the fish ramp. The whitewater concept demonstrates the possibility for an Olympic style whitewater park, with an overbank course and island for recreation and viewing. The course would be approximately 2000-feet long with a 1-percent slope, beginning just upstream of the fish ramp and ending towards Butler Creek. Several whitewater features can be placed along the course. See Figure 5 below.



5. Figure 5 - Concept 1 Whitewater Course with Dam

NEXT STEPS

The required modifications to the dam structures at NSBLD, Stevens Creek Dam and the Augusta Canal Head gates and Locks opens a 36-mile river passage. The City of Augusta, and the region at large have been given an enormous opportunity to redefine how the Savannah River is used and perceived. The River Vision plan described in this report identifies a number of ways to capitalize on the coming changes to the area. Augusta is in a prime position to capitalize on this vision, as the Savannah River runs through the Heart of the City and terminates along the southern end of the reach.

The River Vision is a long term plan that will require years to complete, but provides a new roadmap that will allow the city of Augusta to plan for the positive changes that are ahead. The current Corps process, specifically related to the NSBLD and park will need to be resolved in a positive manner for the city of Augusta. The current alternative presented by the Corps, Alternative 2-6d, negatively impacts the city of Augusta, as it negates the future use of the park as a future outdoor recreational hub.

The NSBLD is the first dam along the system that will be modified, and as such it will set the precedent for future work within the river corridor. The importance of getting the first one right, cannot be overstated. The first, next step, is to ensure the park is protected in modifications to the lock and dam structure. Preserving the park, which is to serve as the future anchor of the new river recreational system, is critical to the success of the entire River Vision Plan. If the City is successful in saving the park, then the future of the river corridor can be established and implemented over time. Setting the right precedent at this first opportunity will set the stage for the entire river reach and will allow the City to reap the economic benefits, social benefits and environmental benefits of a new vision for the Savannah River.

SECTION II - APPENDICES

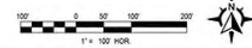
Appendix A – Concept 1 Whitewater Course with Dam

Appendix B – Whitewater Venue Concept

Appendix C – River Vision Concept

Appendix D – Economic Memorandum

APPENDIX A – Concept 1 Whitewater Course with Dam



Number	Revision Description	By	Date

New Savannah Bluff Lock and Dam
Augusta, GA

Alternative # 1
Fish Passage and Overbank Whitewater Channel

Whitewater Layout Study



2019-2020 AG
2019-02-27
2019-04-10
2019-04-10

DESIGN: BAN
DETAIL: RSH
CHECK: RSM
DATE: 01/09/2019

PROJECT NUMBER
65419968

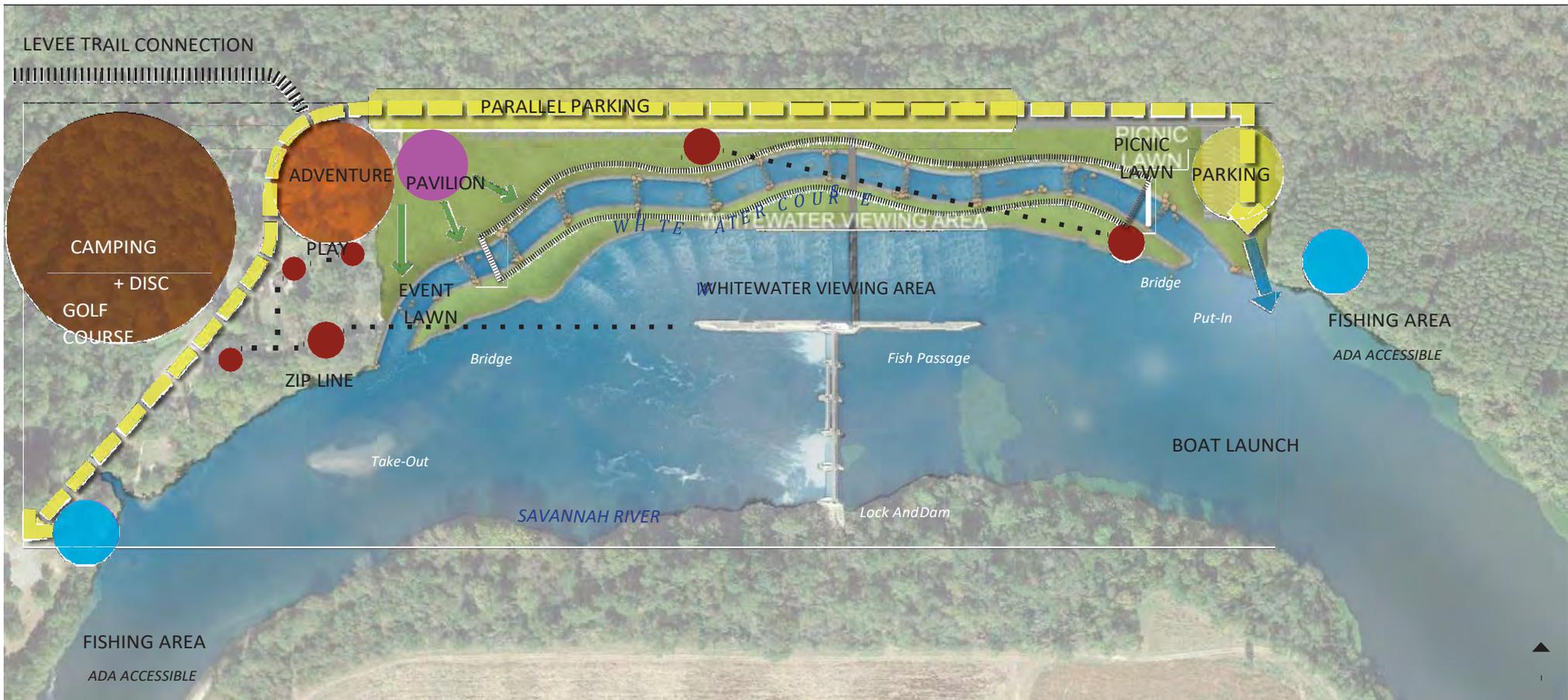
Drawing Number:
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APPENDIX B – Whitewater Venue Concept

RIVER ISLAND DESTINATION

- Pavilion with boat rental and concessions
- Event Lawn for concerts and whitewater viewing
- Zipline over the whitewater course
- Destination Adventure Playground
- Camping Area and Disc Golf course
- Levee Trail Connection

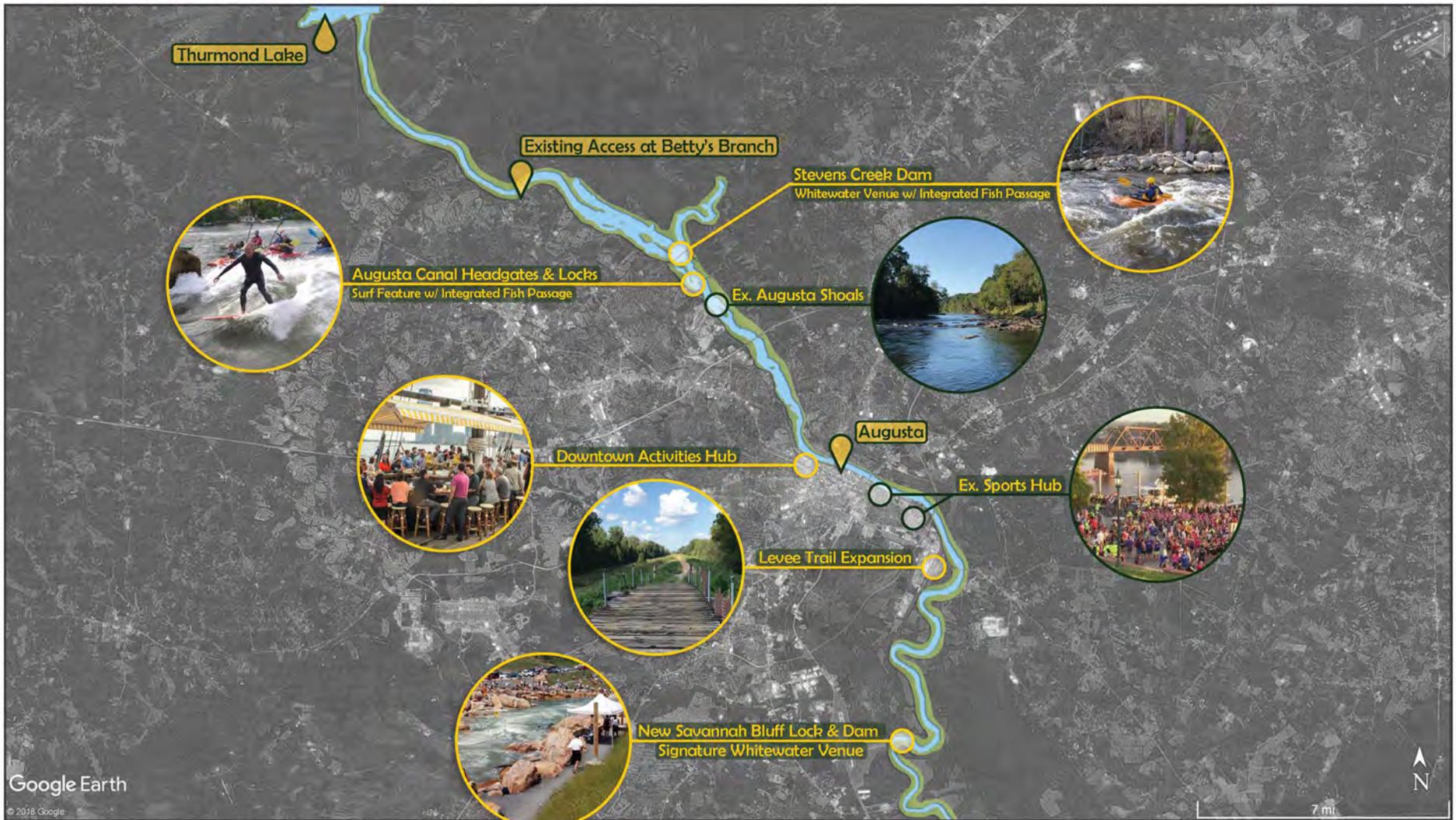
- Route traffic behind activity areas with parallel parking
- White Water Course with put in and take out areas
- Trail and bridges to viewing area on the island
- ADA accessible Fishing Area
- Lock and Dam structure remains
- Boat Launch above the Lock and Dam



APPENDIX C – River Vision Concept

Augusta Area Recreational Corridor 20 Miles of Uninterrupted River

Stevens Dam to New Savannah Bluff Lock and Dam



APPENDIX D – Economic Memo

Economic and Quality of Life Impacts Related the Proposed Savannah River Recreational Improvements

INTRODUCTION

From the late 19th through the mid-20th centuries, cities and communities throughout the United States located alongside rivers focused primarily on protecting themselves from the devastating impacts of flood events by isolating and often “walling” the rivers that ran through them. Rivers were channelized, leveed and dammed in order to control and contain them. They were largely seen as a solely an infrastructure asset that easily could be a threat to the community. Over the last 30 years, however, that paradigm has dramatically shifted as communities have come to recognize the tremendous natural asset their river can be for beautification, recreation, unique economic development opportunities, and enhancement to overall quality of life.

The proposed recreational improvements of the Savannah River near Augusta, Georgia, follow this same change in paradigm. This brief report provides an overview from an expert opinion on the nature and general order of magnitude of those potential impacts based on real and similar projects in Georgia and from around the United States.

PROPOSED RECREATIONAL IMPROVEMENTS

In 2018, McLaughlin Whitewater Design Group (MWDG), and division of Merrick & Company, completed a draft feasibility study and alternatives analysis for river and upland recreation improvements that would work in tandem with the Corps’s analysis of fish passage infrastructure enhancements at the NSBLD site on the Savannah River, approximately 19 miles downstream from the City of Augusta, Georgia. While primarily focused on the in-river enhancements, the MWDG analysis proposed recreational improvements that could support and allow for the following diverse amenities and experiences at and related to the site:

- Whitewater course
- Ropes course and zip-lines
- Water taxi
- River cruise
- Boat access
- Fishing access
- Event pavilion and gathering spaces
- Destination playground
- Trails
- Outdoor market area
- Disc golf course
- 36-miles of unimpeded river floats and paddling opportunities

A VIBRANT AND GROWING REGION

The Greater Augusta region already enjoys rich economic impact from recreation-based tourism being the home of the Masters Tournament. This event alone brings over 250,000 annual visitors to the area and creates over \$110 million in yearly economic impact. Additionally, the region is experiencing a significant growth in specific industries such as cyber security, advanced manufacturing and healthcare services, that is drawing a younger work force to the area.

In February 2017, a “Destination Blueprint” was presented to the Augusta Convention and Visitor’s Bureau that highlighted several priorities and opportunity areas to further establish the City as a regional and national tourism destination. Among those opportunity areas were “Connectivity to the Savannah River”, “Outdoor and Adventure”, “Amateur Sports”, and “Events and Festivals” as thematic areas of potential growth. While this blueprint was focused on opportunities specifically within the City of Augusta, the proposed recreational improvements at the NSBLD site would directly augment and enhance the efforts of developing the area as a regional and national tourism destination with broad and far-reaching appeal. The experiences made possible by these improvements would also support the quality of life attributes most attractive for new and relocating employers targeting a younger work force.

COMMUNITY IMPACTS OF RIVER / ADVENTURE RECREATION DEVELOPMENTS

River and adventure sport recreation developments have become popular enterprises for communities throughout the United States, where there are natural or built resources that can support them. These are unique additions and attractors to an area that bring a multitude of economic and social benefits, provides communities the opportunity to strengthen and diversify their economies, and enhances quality of life for local residents by enriching the recreational opportunities available to them, as well as serving as an attraction for destination tourism. The economic impacts of these developments include direct, indirect and induced impacts through direct visitor spending, job creation, supporting new business development, increases in personal income for local residents, and increases in local and state tax revenues generated. Some of the larger existing whitewater and adventure sport destinations are attracting more than 100,000 user days each year, not including spectators and ancillary participants.

One of the most relevant examples of what is possible and even probable with the proposed river and adventure recreation developments at the NSBLD site is that taken from the whitewater and adventure park developed in Columbus, Georgia. This park offers guided rafting at multiple skills levels, self-guided kayaking, and zip-line experiences. Since the opening of that park in 2013, which is operated by a third-party, private concessionaire, the City of Columbus has seen a 45% increase in annual gross receipt sales in its Uptown area reaching \$46.5 million in 2016. Additionally, 75 new business have opened in Uptown since the whitewater park opened, rental unit occupancy has increased to 98%, and over two million people visit the venue annually with the vast majority of those being spectators. Total guided rafting participation is now nearing 100,000 users annually.

A river and adventure recreation destination in the Augusta area has the possibility of even greater potential economic performance than the Columbus site due to a few distinguishing facts:

- Augusta is only a 30-minute drive further from Atlanta than Columbus, but has many other attractions and amenities to draw and enrich the visitor experience.
- The surrounding region within a three-hour drive of Augusta has more numerous, more populated, and more diversified target markets including Savannah, GA; Charleston, SC; Columbia, SC; and Greenville-Spartanburg, SC.
- The Masters Tournament already draws 250,000 visitors each year to the area.

There have been several economic impact analyses performed for whitewater recreation venues across the United States, most often with the same methodology. The process for determining total economic impact typically involves the following steps:

1. Evaluate national, state, and local trends with regard to whitewater recreation.
2. Determine total commercial user days, visitor expenditures, and multiplier effects of those expenditures.
3. Calculate total non-commercial user days, visitor expenditures and multiplier effects.
4. Investigate total formalized event use of the venue including competitions, classes, and private party equipment rentals, expenditures and multiplier effects.
5. Sum total economic impacts of whitewater recreation to the local economy.

The table below features data from economic impact analyses performed for other whitewater / river recreation destinations currently in operation or planned around the United States.

Site	Total Economic Impact	Total Job Support
U.S. National Whitewater Center, Charlotte, NC	\$36,678,700	690
Lower Animas, Durango, CO	\$19,397,633	268
Des Moines Water Trails, Des Moines, IA	\$27,991,000*	151*

**This is a projection provided by an analysis based on current plans and estimated Year 1 operations of the site.*

Finally, while the entire area and City of Augusta will be significant beneficiaries of the economic and social benefits of this potential project, the local neighborhoods and community within the immediate vicinity of the NSBLD site stands to benefit most. A destination of this nature will bring new energy, unique identity, and economic revitalization that is based in a context of recreation, outdoor fun, and family experiences. Visitor spending will fuel a cascading effect of new opportunities for the growth and development of boutique businesses, support services, public recreation opportunities, public infrastructure enhancements, and local beautification efforts.

Brian Trusty has enjoyed a 26-year career in parks and recreation, land and habitat management, tourism, and economic development that includes senior executive management responsibilities in private for-profit, private non-profit, and public organizations. Brian's career includes managing an outdoor adventure company he founded that operated in 22 U.S. states, Canada, and Mexico; managing Lower Colorado River Authority's system of nature parks in Texas; leading the development and operation of the premier adventure sports destination on the east coast; performing strategic planning and management consulting for parks and recreation agencies throughout the United States; and leading National Audubon Society's conservation and environmental education programs throughout the Central Flyway. His successful public/private partnership at the Adventure Sports Center International in Maryland earned him an "Innovator of the Year" award in 2007 given by the Daily Record, Maryland's leading legal and business journal. Brian currently serves as Chair of the Texas State Parks Advisory Committee and is on the advisory board of the Advanced Environmental Research Institute for the University of North Texas. In March 2019, Brian was recognized with the Leslie M. Reid Alumni Award from the graduate program of the Recreation, Parks and Tourism Sciences Department at Texas A&M University for distinguished service in the field.

Aside from constructing and operating the Adventure Sports Center International re-circulating whitewater park in Maryland, Brian has completed operations and market analyses for whitewater projects on the Mississippi River in Minneapolis, MN; Arkansas River in Tulsa, OK; Illinois River in western Oklahoma; and the Des Moines River in Des Moines, IA. He is widely regarded as an expert in whitewater and adventure park operations and the impacts these projects can have on their communities.

APPENDIX G
Detailed Comments on Corps Report Line by Line

DETAILED REVIEW COMMENTS

ON

SAVANNAH HARBOR EXPANSION PROJECT, GEORGIA AND SOUTH CAROLINA: FISH PASSAGE AT NEW SAVANNAH BLUFF LOCK AND DAM, INTEGRATED POST AUTHORIZATION ANALYSIS REPORT AND SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT PREPARED BY U.S. ARMY CORPS OF ENGINEERS, SAVANNAH DISTRICT, FEBRUARY 2019

PAGE BY PAGE REVIEW COMMENTS AND QUESTIONS

PREPARED BY

CRANSTON ENGINEERING GROUP, P.C.

Thomas H. Robertson, PE, AICP, RLS

Draft Finding of No Significant Impact (FONSI)

Page i, paragraph 1, last line – With the weir crest elevation at 108.2 and the flood plain bench (runaround) at 110, the water would rise 1.8 feet before engaging the bench.

Page i, second paragraph, fifth line – With the pool elevation at the weir fluctuating between 110.2 and 111.2 feet this would mean that the flood plain bench runaround would be engaged most of the time at depths from 0.2 to 1.2 feet deep.

Page i, second paragraph, last line – The boat ramp would require purchase of additional land and extinguishing and mitigating a conservation easement.

Page i, third paragraph, fifth line – Would the recommended plan not be expected to improve the existence of the federally listed species, not merely not jeopardize?

Executive Summary

Page i, second paragraph, ninth line – This Section (i) requires maintaining the pool as existed when the WIIN Act was enacted. This is misinterpreted by the Corps of Engineer’s guidance document. The Act says “the pool,” the Corps says “a pool.” This section requires allowing safe passage over the structure of the shortnose sturgeon, Atlantic sturgeon and other migratory

species. The Act provides expanded purposes for the project beyond the original navigation to include water supply and recreation.

Page i, second paragraph, last line – Note that this section (ii) states different purposes from (i) in that it is not required to maintain the pool for navigation, but only for the new purposes of water supply and recreational activities. Note also that this section of the Act does not require the structure to allow safe passage of any fish.

Page i, third paragraph, fourth line – Maintaining the functionality of the pool for written purposes is a major difference in interpretation between the plain language of the Act and the Corps interpretation which admits ready manipulation.

Page ii, third paragraph, third line – Passing fish is not required Section ii of the Act.

Page ii, third paragraph, last line – Why is alternative 2-6d classified under Section (ii)? The weir as actually being constructed over the dam; so, would the structure not be more properly classified as being under Section (i)?

Page ii, fifth paragraph, fifth line – The adjacent park and recreation area would contain the often-inundated flood bench that would not be an asset to the park, but rather a maintenance problem, for which the City of Augusta would be always responsible.

Page viii, Acronyms and Abbreviations – The acronym chart is not complete and limits the reader's ability to comprehend the text of this report. For example, what do AM, CONUS, NLF, and others represent?

1.0 Introduction

Page 1, first paragraph, last line – Question the definition of functionality and also the WIIN Act requires passing fish under Section (i), not (ii).

Page 1, second paragraph, last line – Because this project is much different from the 2012 one, would it not be appropriate to have a new Environmental Impact Statement rather than Finding of No Significant Impact?

Page 1, third paragraph, last line – If the 2012 design is not consistent with the WIIN Act, then how can it be considered be considered as an actual No Action Alternative (NAA)? The conclusion that the original design should be used as the basic comparison is totally illogical and does not flow from the “inconsistency” sentence via the word “therefore.” Using an alternative that is inconsistent with the WIIN Act as the base masks the fact that it had effects on the water surface levels of the pool different from the actual existing elevations experienced by the communities every day. This choice will make the alternatives in the report look as if they have lesser effects than they really do.

1.1 Study History

1.1.1 New Savannah Bluff Lock and Dam

Page 2, third paragraph, last line – There are unauthorized purposes that were acquired by the New Savannah Bluff Lock and Dam due to other federal legislation. These have been enumerated

by Augusta Attorney Noel Schweers from legal research, and further study would be needed to quote the actual purposes and sources.

1.1.2 Savannah Harbor Expansion Project

Page 3, first paragraph, last line – If the WIIN Act does not authorize a bypass outside the federal channel, then how does it authorize a flood plain bench outside the federal channel, which, incidentally, ruins a very nice waterfront park?

1.1.3 Study Authority and Related De-Authorization*

Page 4, What does the asterisk in the section title refer to?

Page 7, second line – (A)(i) includes three purposes including navigation. The Corps interprets navigation as being only within the pool. A plain reading of the WIIN Act reveals the obvious intent that the lock should remain in place should include rehabilitation for navigation up and down the river, not just in the pool.

Page 7, seventh line – (A)(ii) has only two purposes (different from (A)(i)): water supply and recreational activities only. There is no mention of authority for a fish passage under Alternative (ii).

Page 7, tenth line – The park and recreation area to be conveyed ends up being a pretty poor park and requires significant on-going maintenance of a soggy and/or scoured flood runaround.

Page 7, nineteenth line – More information is needed to understand better the cost-sharing policy of the project, because it affects local communities and the position of various stakeholders who may stand have to pay, or gain various costs.

1.1.4 Study Sponsor

Page 7, first paragraph second line – Both Georgia Ports Authority (GPA) and Georgia Department of Transportation (GDOT) are the collective non-federal sponsors. Most stakeholders may not be aware that GDOT is a party to the project along with GPA.

1.3 Purpose and Need*

Page 9, Title – What does the asterisk refer to?

1.4 Problems, Opportunities, Objectives, and Constraints*

Page 9, Title – What does the asterisk refer to?

1.4.3. Objective

Page 10, second paragraph, last line – Note that Alternative 2-6d does not provide for the navigation objective.

1.4.6 Assumptions

First bullet, second line – This is a flawed assumption. Why would one assume a No Action Alternative that cannot be built? And, why is logical or why does it matter that the 2012 SHEP

Plan requires some form of mitigation? That makes no sense. The No Action Alternative, by contrast, should be the Existing Conditions.

Second bullet, fifth line – Selecting the 2012 SHEP plan as the No Action Alternative makes the pool elevations from that plan be the existing for comparison purposes. The SHEP plan levels are lower than the real no-action (existing) levels. This assertion should be quantified.

2.2 General Existing Conditions*

Page 13, first paragraph, sixth line – Even if one assumes that the navigation function is the only purpose for the dam (which it is contended that it is not), the project does not “incidentally” serve water supply and support water-related recreation and tourism. It may have “incidentally” at one time, but the WIIN Act 2016 specifically authorizes these purposes in addition to navigation. Therefore, the provision of these functions is not merely incidental.

Page 13, first paragraph, last line – It has been reported that the lockages were able to pass a majority of the migratory and anadromous fish species until the lock was closed. Operating the lock in this fashion and continuing to operate a restored lock in this fashion would be a low-cost method of accomplishing the fish passage purpose. ZEL Engineers has proposed some changes to the lock that would make it more desirable for sturgeon. These alterations need to be further explored.

Page 13, third paragraph, third line – The current condition of portions of the project are probably very poor, but the overall condition of the project is not entirely poor. In fact, previous inspection before 2014 did not classify it as being that bad. It was reported that previous inspections did not describe such dire circumstances in parts of the project other than the lock wall. The reported structural issues have been present for a very long time and do not appear to be as dire one might think upon looking at cracked concrete.

Page 14, last line – The Savannah District had previously refused to provide the cost estimate updated in 2017 of the SHEP project including the structural repairs necessary to reduce the risk of a catastrophic failure of the dam and insure proper hydraulic operation of the fish passage. Such cost estimates would be useful in making independent judgements about the future of the dam. They should be requested.

2.2.2 Hydrology and Floodplains

Page 17, second paragraph, sixth line – Why is the flood control benefit from J. Strom Thurmond Dam described as “limited”? That project has always been touted by the Corps as furnishing flood control as the major benefit for the Savannah River downstream.

Page 17, second paragraph, third to last line – The Augusta Canal Diversion Dam is also located upstream approximately one mile downstream of Stevens Creek Dam. It was built in 1876 and is maintained by the City of Augusta currently. It is a run of the river overflow weir structure. Note that the New Savannah Bluff Lock and Dam is the youngest of the three dams near the Augusta/North Augusta area and it is in the worst condition. Who is responsible for that?

Page 18, third paragraph, third line – The pool elevations of 111.2 and 114.2 NAVD88 are equivalent to elevation 112.0 and 115.0 in the NGVD 1929 datum, the original datum for the

construction of the lock and dam. Elevation of 115 is shown on the plans for the dam. Where does elevation 112 come from?

Page 19, first paragraph, last line – The two-year return interval flood is also a good proxy for the mean annual flood, the average flood discharge that might be expected every year.

Page 19, second paragraph, last line – The original design discharge was 550,000 cfs, lessened to 500,000 cfs to conform to more modern freeboard standards.

Page 19, fifth paragraph, first line – USGS reports that the 1929 flood had peak stages of 45.1 and 46.3 on September 27, 1929 and October 2, 1929. These figures are gauge readings and the NAVD88 has no meaning for them. That is there is no need to adjust gauge readings which are not related to the datum.

Page 19, fifth paragraph, third line – The USGS reported discharge rates of 343,000 and 350,000 cfs for these two flood peaks respectively. Note that the peaks occurred in different Water Years. Reference USGS Water Supply Paper 1673, *Magnitude and Frequency of Floods in the United States, Part 2-A South Atlantic Slope Basins, James River to Savannah River*, 1964, pages 318-19.

Page 19, fifth paragraph, seventh line – Where is the Butler Creek gauge located?

Page 20, second paragraph, first line – If one defines “flood control function” as controlling the discharge of waters downstream, this is correct. However, it is misleading because the New Savannah Bluff Lock and Dam does re-regulate flood flows from intermittent generation at Thurmond and from uncontrolled runoff from drainage basins upstream, particularly the large Stevens Creek watershed. The dam gates are adjusted numerous times per day to maintain the slack-water pool at Augusta within operational limits. More importantly, the gates are often raised entirely to pass floods equal to the bank-full stage flood or greater magnitudes. This function reduces the severity of smaller floods and while still being able to be manipulated to maintain the pool at existing levels.

2.2.3 Aquatic Resources and Aquatic Habitat

Page 21, third paragraph, last line – The Savannah Bluff Lock and Dam may have inundated a portion of the Augusta shoals, but it did not eliminate the habitat for the Rocky Shoals Spiderlily, as populations of those plants occur at various locations in the rocky shoals upstream and beyond the effect of the New Savannah Bluff Lock and Dam.

2.2.4 Wetlands

Page 23, Paragraph 2, first line – Country Highway should be County Highway. Is this road Gum Swamp Road?

2.2.6 Threatened and Endangered Species

Page 27, first paragraph, third line – Where did the gravel bar come from? And when? It did not exist in the 1960's and 70's. It blocks the former navigation channel now. It is speculated that the material for this bar may have come from the deep hole immediately under and downstream of the lock and dam.

2.2.9 Cultural Resources

Page 33, second paragraph, third line – Where are the lay-down and access areas on private property?

Page 33, Figure 14 – Red boundary is erroneous and does not encompass all the lands owned by the United States. The red boundary does not match the plat of leased lands included in Figure 33 NSBLD Park on page 110.

Page 35, first paragraph, last line – While steamboats may have hauled some cotton goods from the mills, most of the cargo was baled cotton from the major inland market at Augusta. Barge traffic in oil and timber also included major shipping for bricks manufactured in the Augusta/North Augusta area.

Page 37, Figure 16 – The National Register boundary should be adjusted to cover all of the areas impacted by the proposed alternatives including other areas on the Georgia side. The boundary should be enlarged to include the lock-tender’s residence site, an adjacent colonial era cemetery, and the downtown lands to the end of the bluff. Also, there is a possibility of previous occupations of Native Americans. In the historical period the Chickasaw Indians were known to have occupied the site. Collections at the Augusta Museum of History include a fine shell gorget recovered from the borrow pits adjacent to this property, indicating that other remains might be discovered or disturbed.

Page 39, second paragraph, fifth line – There are two early to mid-19th Century railroad bridges across the Savannah River, but one is upstream of the Fifth Street Bridge and the other piers downstream. These are historic “rolling lift bridges.” In addition, there are stone pools from the former South Carolina Railroad bridge upstream of the Fifth Street Bridge. In addition, the Fifth Street Bridge itself, with a superstructure completed about 1935, is a historic property itself.

Page 40, first paragraph last line – The main training wall in the slack water pool extends from the South Carolina bank to the center of the river at the Norfolk Southern Railroad bridge at Sixth Street and extends roughly down the center of the river for a mile. This structure has been referred to as Gardner’s Bar training wall or jetty. It was constructed by the Corps of Engineers prior to 1915 to divert the main flow of the river to the Georgia side to keep the docks at Augusta scoured out to prevent shoaling. This wall is constructed of timber piles, cribs and rock. At the existing water levels this training wall is not a major impediment to navigation and recreational use, but at lower stages of the pool the wall becomes a hazard to navigation and at the lowest level it even protrudes from the surface of the water. If water levels are to be lowered, the Corps should include in the project mitigation measures for the wall including selective demolition to lower the top elevation so that vessels might safely pass over in the future.

2.2.11 Recreation

2.2.11.1 Boat Docks

Table 5 – Shows the existing depths at boat docks. Is this existing the real existing conditions or does it reflect the No Action Alternative?

2.2.11.2 Special Events

Page 42, third paragraph, second line – Which datum do the elevations 113 and 115 refer to, NGVD 1929 or NAVD 1988? Do the measurements of the water stages at the Fifth Street Bridge refer to the physical staff gauge on the bridge pier or to the elevations from the recording gauge?

Page 42, third paragraph, third line – Where is the New Savannah Bluff Lock and Dam gauge physically located?

Page 42, third paragraph, last line – When and if the pool elevation is lowered, it is likely that sculls, sweep rowers, and rudders will impact the training wall.

2.2.13 Water Supply

Page 43, fourth paragraph, last line – It is likely that the NSBLD changes would have no effect as to raw water pumping station intake that leads to the Highland Avenue Treatment Plant.

Page 44, Table 6 – Why is the analysis of pump cavitation prevention based on pool elevations in NVGD 29? This is confusing with respect to the alternatives which are expressed in NAVD 88.

Page 45, Table 7 – Why is the analysis of pump cavitation prevention based on pool elevations in NVGD 29? This is confusing with respect to the alternatives which are expressed in NAVD 88.

3.0 Formulation of Alternative Plans

3.1 Planning Strategy

Page 48, fourth paragraph, last line – Using the SHEP2012GRR/EIS Fish Bypass Design as the NAA for comparison of alternatives is a completely flawed logic. Either the SHEP 2012 Plan should be considered as an actual alternative that could be constructed, or, in the alternative, it should be eliminated and actual existing conditions as of the date of enactment of the WIIN Act should be used instead. If the authorized project modifications include only the construction of an in-channel fish passage, moreover, then the modifications would not allow for the out of channel flood bypass either as proposed in several of the alternatives, including Alternative 2-6d.

3.1.1 Evaluation Criteria

Page 48, second bullet item – The impacts to water supply intakes should include not only the number of commercial water intakes affected, but also the cost implication of both first costs and ongoing operational costs.

Page 49, Table 14, second row – The dollar cost should also be a measure of the impacts. Then impacts from induced floods of various flood events, the depths of flooding and elevations should also be considered, not just the area inundated. Impacts for real estate, how are impacts measured? Dollars?

3.1.1.1 Rating Criteria

Page 49, second paragraph, fourth line – The initial assumption that each alternative would have the ability to pass fish equally was not held constant through the end of the analyses, even though

there is no additional scientific evidence to the contrary that was not already known at the outset. Therefore, the initial assumptions should be constant throughout.

3.1.1.1.1 Navigation

Page 50 first paragraph, last line – To say that an operational lock is not required is entirely to mis-interpret the clear language in the 2016 WIIN Act. The first option of the WIIN Act provides for navigation, and the fish passage over the dam does not take out the lock. Therefore, retention of the lock is to provide navigation around the fish passage structure is clearly the intent. Retaining the lock also would provide another means of passing fish upstream which has been successful in the past and which could be left as an adaptive management feature for the future in the likely event that the fish passage is not successful in passing the targeted species. ZEL Engineers, Inc. has proposed a method of accomplishing this passage for the sturgeon.

3.1.1.1.3 Recreation

Page 51, fourth paragraph, fourth line – Recreational boat docks are currently used by the owners under existing stages of the pool, not those theoretical ones that would occur under the No Action Alternative. Therefore, this analysis using the NAA as the base understates the adverse impacts of lowering the pool on the usefulness of these boat docks.

3.1.1.1.4 Flooding

Page 52, first paragraph, fifth line – The gates at the New Savannah Bluff Lock and Dam to reduce adverse impacts by high flows will be lost as a function under all alternatives, except Alternative 1-1.

Page 52, first paragraph, eleventh line – “rose” should be “raised.”

Page 52, second paragraph, eighth line – The detailed flood models should be made available to local interests and the Cities, so that independent evaluation of the effects can be made. Also, does the more detailed model result in differing flood elevations for the 100-year flood from that which is predicted by the FEMA hydraulic model? Note also that the FEMA effective hydraulic model was itself developed by the Corps of Engineers.

Page 52, second paragraph, last line – “asses” should be “assess.”

3.2 Management Measures

Page 53, first paragraph, last line – Neither a fish passage, floodplain bench, or bypass channel is authorized under (ii) of the WIIN Act.

3.2.1 Location of Fish Passage Structure along River

Page 53, second paragraph, last line – “projecting” should be “project.”

Page 53, third paragraph, last line – This paragraph indicates the recognition that you can’t have it both ways, keeping the pool and not causing flooding, or not causing flooding and lowering the pool. This is what local interests have been telling the Corps all along.

3.3 Formulation of the Initial Array of Action Alternatives

Page 54, fourth paragraph, last line – The term “in-channel” is an important manufactured word that allows the Corps of Engineers to distinguish among alternatives as to whether or not the fish channel occurs within the river or in a “bypass” channel. The approach is silent on whether or not other project features can be located on the side of the river, such as the flood bench and run-around channels. This in-channel definition would by their thought process eliminate the SHEP 2012 plan even though it is the NAA that the first two alternatives in Table 17 are authorized by paragraph (i) while the last three are authorized by paragraph (ii.). Completely different authorizations.

Page 55, third paragraph, thirteenth line – All of the six weir alternatives hold the South Carolina bank of the river as existing. Why? This selection seems arbitrary, especially because the 2012 plan is included as the No Action Alternative.

Page 55, fourth paragraph, second line – “a” pool and “the” pool are not the same thing. The WIIN Act refers to “the pool.”

Page 56, second paragraph, second line – The local interests should request both the HEC-RAS 2D model and the HEC-RAS 1D model for independent analysis as required by the Information Quality Act.

Page 56, fourth paragraph, last line – Why were reformulation refinements needed for the alternatives in the 1D HEC-RAS model? Was the model itself wrong, or were the input parameters wrong?

3.4 Alternatives Eliminated from Further Consideration

Page 58, Table 20 – It is important to note that both of the Corps of Engineers original plans on which the WIIN Act language was based were discarded. While this might indicate the success of the first stakeholder comments, it does point out that the value engineering proposals were flawed from the beginning and led to the passage of a flood WIIN Act in 2016. The 2016 WIIN Act Alternative 1-2 is one of the value engineering plans and the 2016 WIIN Act Alternative 2-5 is the other value engineering plan.

3.5 Final Array of Alternatives with Refinements

Page 59, Table 21 – As stated before the selection of the SHEP 2012 Plan A as the No Action Alternative is logical nor representative of existing and future conditions in a straight forward manner.

3.5.1 Description

3.5.1.1 No Action Alternative

Page 61, first paragraph, last line – Choosing the 2012 SHEP Plan as the No Action Alternative has been pointed out as not being logical several times earlier in these comments... but is it or is it not authorized now?

**3.5.1.2 Alternative 1-1 – Repair Lock Wall Georgia Side Fish Passage
(Recommended for further consideration)**

Page 61, third paragraph, last line – This alternative does not provide for navigation as a strict reading of the WIIN Act provision would require.

Page 61, fifth paragraph, last line – The annual operation and maintenance costs that include the annual cost of a major rehabilitation of the structure at fifty years is not a valid cost to assign to this analysis. There will not be a sinking fund established for the project, just as there was not for the previous fifty years. Therefore, these costs should be considered in arrears as has been the case in the past and not in advance as these costs are proposed to be. In fact, they are not real costs, but they are figures which skew the decision among otherwise valid alternative plans.

**3.5.1.3 Alternative 2-3 – Fixed Crest Weir (500’ Wide at Elevation 106.2’ NAVD88)
(Recommended for further consideration)**

Page 63, third paragraph, fourth line – How is siltation build-up behind the fixed weir to be handled for this alternative as well as all of the fixed weir alternatives considered?

**3.5.1.4 Alternative 2-6a – Fixed Crest Weir (500’ Wide at Elevation 109.2 NAVD88) with
Bench (Recommended for further consideration)**

Page 64, first paragraph, eighth line – These two sets of elevation figures indicate that the difference between the 1929 and 1988 elevation datums is either 0.78 feet or 0.80 feet.

**3.5.1.7 Alternative 2-6d – Fixed Crest Weir (500’ Wide at Elevation 108.2’) with Bench
(Recommended for further consideration)**

Page 67, fourth paragraph, third line – Using the elevation difference from page 64 it appears that the base of the dam in the NGVD29 datum would be 92.00. What physical part of the dam does this represent? The plans for the Lock and Dam show the top of the downstream apron at elevation 90.5 (NVGD 1929) and the gate sills at about 99.0.

Page 67, fourth paragraph, eleventh line – The water in the floodplain bench would flow when water level is only 1.8 feet above the crest of the weir. ($110.0 - 108.20 = 1.8$ feet) The language states that the floodplain bench would be partially inundated for the one-year return interval flow; however, it seems likely that this run around bench would be inundated much more often than implied by the one-year flood. It would also be subject to scour.

3.6 Environmental Effects*

Page 70, first paragraph, last line – Why would the SHEP 2012 fish passage as the No Action Alternative not be included here, for comparison, but is elsewhere in the analyses?

3.6.1 Climate Change – Upstream River Effects

Page 70, second paragraph, sixth line – What is CONUS?

3.6.2 Hydrology and Floodplains

Page 70, fourth paragraph, sixth line. It is noted that the gates are operated to pass flood waters only and are not affected in adjusting daily flows in the pool, which are controlled by the fish passages.

Page 71, second paragraph, second line – Which HEC-RAS model is referred to here? 1D, 2D, FEMA Effective?

Page 71, third paragraph, sixth line – The two-year flood is similar to the mean annual flood or the flow rate that would occur on the average once per year. (Some sources in the literature refer to this as the 2.33-year flood.)

Page 71, fifth paragraph, fourth line – Note that the flood level differences among alternatives are greater at the dam site and converge upstream.

Page 71, fifth paragraph, last line – What is base elevation of the existing condition profile? Why was it not presented along with the alternatives, so that the real difference from current conditions on the date of enactment can be judged?

3.6.2.1 Future Conditions with No Action Alternative:

Page 73, first paragraph, first line – Is this HEC-RAS the 1B, 2B, or FEMA effective?

Page 73, first paragraph, eighth line – A comparison of the No Action Alternative elevations on the future conditions with Alternative 1-1 are inconsistent with elevations of existing conditions. Which are correct? If the pool is 114.2 NAVD 88 (0.8 feet lower than existing), then the 1988 elevation of the existing pool is elevation 115. If this elevation is converted to NGVD 29, the difference is approximately 0.8 feet or the 1929 elevation would be 115.8. See below for calculations under Alternative 1-1, which indicate a different existing elevation.

3.6.2.2 Future Conditions with Alternative 1-1:

Page 73, third paragraph, ninth line – If the elevation of the pool were to be 113.5 NAVD 88, then the existing pool would be elevation 114.3 and converted to 1929 datum would yield 115.1, this is approximately 0.7 feet different on the existing conditions between those described in these two alternatives. Which is correct?

3.6.2.3 Future Conditions with Alternative 2-3:

Page 73, fifth paragraph ninth line – Similar to the comments above if the existing 1988 elevation of the pool is calculated from the data given, the existing situation would be elevation 114.3 or in 1929 terms, 115.1. Therefore, it appears that the future conditions with No Action Alternative elevations in paragraph 3.6.2.1 are erroneous.

3.6.2.7 Future Conditions with Alternative 2-6d:

Page 75, third paragraph, ninth line – Similar to calculations above these figures indicate an existing elevation at Fifth Street of 114.3, which is consistent with most of the alternatives.

3.6.3 Aquatic Resources and Aquatic Habitat

3.6.3.1 Future Conditions with No Action Alternative

Page 76, fourth paragraph third line – The assertion that the challenge of finding the bypass structure under the No Action Alternative would be challenging is erroneous. All of the average flow of the Savannah River was trained to go through the fish bypass under this alternative so that there would be little or no flow going through the gates.

3.6.3.2 Future Conditions with Alternative 1-1

Page 77, third paragraph, last line – The same beneficial impact due to increased dissolved oxygen that are listed for Alternatives 2-3 and 2-6A-D in the section below could be included under Alternative 1-1, “Long term beneficial impacts could occur to aquatic species from the potential local increased dissolved oxygen due to turbulence at rock weir.” Also, the existing upland park habitat that will be converted to rocky shoals habitats said not to be rare or unique to the project area; however, the bluff land open to the public for recreational purposes along the river is pretty unique and the loss of the New Savannah Bluff park for mankind is also the loss of a valuable habitat.

3.6.3.3 Future Conditions with Project Alternatives 2-3 and 2-6a-d:

Page 77, sixth paragraph, third line – What does this sentence mean where the rock weir would also improve habitat in general by improving habitat diversity. That seems unsupported and illogical.

Page 78, fourth paragraph, last line – It has been stated above the existing upland park habitat is quite rare for the benefit of mankind in this area.

3.6.4 Wetlands

3.6.4.2 Future Conditions with Alternative 1-1

Page 80, table 23 – Alternative 1-1 has the least impact on wetlands of any of the alternatives.

3.6.6 Threatened, Endangered and Protected Species

Page 84, fifth paragraph, third line – What is PBF?

Page 85, first paragraph, last line – Why is it important that the area above New Savannah Bluff Lock and Dam was not designated a critical habitat? If it is not critical habitat, why is it important to pass the fish into it from the area below which is critical habitat?

3.6.6.2 Future Conditions with Alternative 1-1:

Page 86, second paragraph, last line – How is it concluded that Alternative 1-1 will not function as effectively as other designs being evaluated? How is it known that this alternative would be the most likely one to cause the downstream gravel bar to shift locations? It will be re-established. But, what difference would that make if the fish go upstream? The gravel bar has not always been there at all. It lies where the navigation channel used to be.

3.6.9 Cultural Resources

3.6.9.1 Future Conditions with No Action Alternative

Page 89, third paragraph, last line – It is not true that the existing pool operations would remain the same. The NAA elevations are lower than existing.

Page 89, last paragraph, third line – How do we know?

Page 89, fifth paragraph, last line – There is only railroad bridge downstream of downtown Augusta. There is one railroad bridge at Sixth Street in downtown Augusta and the stone pier remains of the South Carolina Railroad bridge and the adjacent Fifth Street Bridge.

Page 90, second paragraph, last line – A Phase I archaeological investigation is very important because the New Savannah Bluff was occupied by mankind for a very long time, including prehistoric occupations, Chickasaw Indians, colonial settlements, and post-colonial occupations, including the development of the New Savannah Bluff Lock and Dam and its appurtenant structures themselves. The entire bluff should be included.

Page 90, fifth paragraph, second line – Not true.

Page 90, fifth paragraph, eighth line – This is a Public Safety concern.

Page 90, fifth paragraph, thirteenth line – Lowering the pool exposes parts of the wall and kills water events.

3.6.11 Recreation

Page 91, third paragraph, last line – The reader needs to understand what is meant the “impact zones.”

Page 91, table 25 – What is the breakdown of existing docks by impact zone? There are 161 total existing docks, but the owner of each one would undoubtedly wish to know what the difference between the current conditions, i.e. existing, and not the fictitious SHEP Plan A (NAA). What about damages in dollars?

3.6.11.9 Future Conditions with No Action Alternative and Project Alternatives 1-1, 2-3, 2-6a-d, and 2-8:

Page 93, first paragraph, second line – The selection of Alternative 1-1, with modifications, could change or even lessen the flood impacts on special events. This benefit would not be present with the other alternatives.

3.6.12.2 Future Conditions with Project Alternatives 2-3, 2-6a-d, and 2-8:

Page 93, third paragraph, fourth line – The observations in this paragraph are entirely the opinions of the writer and may not be applicable to every reader.

3.6.13 Water Supply

Page 93, Table 27 – What are the low flow existing conditions for each of the water intakes? The only comparison given here is with the fictitious No Action Alternative. For example, the Hicks

Raw Water Intake requires modification under Alternative 2-6c but not under alternative 2-6d even though the water surface elevation is only 0.6 feet different. It seems that, given the uncertainty of the elevations in the alternatives, this difference might not be significant and to have an adequate factor of safety. Perhaps alterations might be needed for Alternative 2-6d also. This recommendation is included in the observation on Page 94. Moreover, the modification considers only the current withdrawal flow, but not the ultimate capacity of 60 mgd for which intake pipes are already in place. Who pays?

3.6.13.2 Future Conditions with Project Alternatives 2-3, 2-6b, and 2-6c:

City of Augusta Proposed Modifications:

Page 94, third paragraph, last line – Although the Corps of Engineers analysis as given in Table 28 does not require pump station modifications to be made, there are recommended modifications for Alternative 2-6d, which increase the safety factor for the operation.

3.6.16 Cumulative Impacts

Page 98, seventh paragraph, second line – The diversion dam of the Augusta Canal System does not currently have an operating license from Federal Energy Regulatory Commission (FERC).

Page 99, first paragraph, last line – What about negative cumulative effects, including the loss of the Lock and Dam Park itself, the loss of fishing, etc. The project eliminates a fine city park and hence possible additional whitewater feature for the selected plan.

3.7 Plan Selection

Page 100, table 29 – There are numerous scoring deficiencies in the final analysis. The fish passage is not even required for (ii) alternatives, which include 2-6d. The fish passage scoring of 1-1 and the No Action Alternative were scored as a zero, because the risk of failure to reach the spawning ground is an unacceptable risk. Documentation in the report did not establish that it is an unacceptable risk. And who says it is unacceptable? Under navigation both the NAA and 1-1 should be scored zero instead of one, because they do not provide for navigation even though it is a purpose of (i) alternatives. Conversely, 2-6d should be scored a negative one instead of a plus one, because navigation is not required for (ii) alternatives. All of the alternatives eliminate real navigation along the river up and down. If scored in this manner the No Action Alternative and Alternative 1-1 would come out with a score of three, and all other alternatives would be two or less. On the remaining cost comparison the No Action Alternative and 1-1 are virtually the same. In short, the selection matrix is flawed and should be re-evaluated.

Page 101, third paragraph, first line – The selection matrix is flawed and should be re-evaluated.

Page 101, sixth paragraph, second line – There are no reasons stated why Alternative 2-6d was selected as the recommended plan. What are the other reasons?

4.1 Plan Components

Page 102, second paragraph, third line – The 15 percent concept level design conflicts with 35 percent as shown in Section 4.4.1.

Page 102, second paragraph eleventh line – The elevation of 110 is only 0.8 above the weir. How often would the floodplain bench be engaged? Also, earlier in the report it says that crest of the weir would be at elevation 108.2. Why is there a difference?

Page 103, first paragraph, fifth line – What is TCPS?

Page 103, third paragraph, first line – Why is sales tax of 7 percent used, when the prevailing sales tax at the site of the new Savannah Bluff Lock and Dam is greater than that. Does the costing not consider Local Option Sales Taxes? Is this a loss of revenue to Augusta/North Augusta/Aiken County?

4.3 Cost Sharing

Page 104 – The reader needs to understand the cost sharing formulas better, as the provision of money will drive the positions of the non-federal GPA and GDOT and perhaps the local communities as well. Moreover, the formulas should be correctly applied.

Page 104, Table 31—What do the asterisks refer to?

Page 105, first paragraph, second line – The guidance documents refers to the provision of the WIIN Act that the cost of either alternatives shall not be greater than the share as provided WRDA 2014 for the most cost-effective fish passage structure. “Therefore the post-authorization document must also detail what would have been the cost of such fish passage structure.” This directive needs to be presented in the summary document, so that the reader may understand the cost-sharing arrangement. The costs must be updated to today’s dollars, also.

Page 105, first paragraph, last line – Once again, alternative (ii) do not require a fish passage nor navigation features.

4.4.1 Design Consideration

Page 105, second paragraph, second line – The 35 percent design effort conflicts with the 15 percent given in paragraph 4.1.

Page 105, fourth paragraph, second bullet – Are there to be new comfort stations as part of the new boat ramp facility?

4.4.2 Construction Methods

Page 107, second paragraph, first line – The reader needs to review in more detail the sequence of construction to understand its details.

4.5 Lands, Easements, Rights-of-Way, and relocations LERR

Page 108, first paragraph, second line – The NFS (non-federal sponsor) is made up jointly of Georgia Ports Authority and Georgia DOT.

4.5.1 Lands

Page 108, second paragraph, last line – Conservation easements released would need compensatory mitigation to be provided.

4.6 Operations

Page 111, third paragraph, fourth line – Eliminate “the.”

4.10 Risk and uncertainty

Page 112, fifth paragraph, tenth line – Modifying the slope to steepen it would seem to be counterproductive with making the fish passage more successful, as it would take more energy for fish to traverse the slope.

Page 112, fifth paragraph, fourteenth line – The statement that “It is anticipated that the proper design of this alternative will result in successful fish passage,” is questionable. Where is the proof that this type of structure will work, given that failures have occurred at the Cape Fear River passage which is usually cited as the model and is the only one? Currently the Cape Fear River Watch is asking the Army Corps of Engineers to let that organization overhaul the structure, because the passages are too narrow to serve the striped bass, which is much smaller than the Atlantic sturgeon (which are lazier, too).

Page 113, first paragraph, fourth line – The length of delay in fish looking for the passage was not determined and would require additional study and modeling effort. Nevertheless, the project final analysis used this fictitious anticipated delay, the unknown amount of delay, to assert that Alternative 1-1 and others were not as good in passing fish as 2-6d. This conclusion is totally without basis in scientific study or fact. Also, ZEL Engineers has suggested that the project could install an underwater wall to guide the bottom-travelling sturgeon toward a fish passage a modest cost. The borderline between the need for making modifications and the desirability is a very small change in elevation. If the modifications are desired by the city, they should be paid for by the SHEP project.

Page 113, third paragraph, last line – The web application tool which was published in 2018 as a measure of the effect of the pool lowering was not very helpful. It was difficult for the trained technical person to understand, much less the laymen and the owners of docks. It was not very helpful. By contrast the physical drawdown was more informative and very telling.

5.13 Public and Agency Review

Page 116, fourth paragraph, second line – Actually, the draft integrated report was issued on February 15, 2019 and thirty-day public review period was revised to 60 days.

Page 116, fourth paragraph, fifth line – What will the supplemental environmental assessment cover and when will it be available for review?

Page 116, fourth paragraph, last line – Why is a new Environmental Impact Statement not needed, as this project is materially different from the previously approved No Action Alternative presented?

5.4.1 Regulatory Compliance

Page 118, first bullet – The Finding of No Significant Impact (FONSI) is very questionable. It is likely that a new Environmental Impact Statement should be prepared.

Page 120, last paragraph, last line – This turbulence and air entrainment runs counter to the assertion elsewhere in this report that dissolved oxygen will be enhanced in fishway path.

Page 121, third paragraph, last line – The response for Alternative 2-6a seems adequate as far as it goes, but, how do Alternative 2-6d and the other alternatives change the response to this recommendation? Or do they?

Page 121, fifth paragraph, last line – It appears that the response does not answer the question posed by USWS. It appears that the bench will be engaged very often. How is that managed? How will grass grow and be maintained under these circumstances? Will it not scour out?

Page 122, first paragraph, fifth line – Are adaptive management strategies to be implemented within the project? If so, what are they?

6.0 Mitigation

Page 122, Title -- What is the meaning of the asterisk?

Page 122, eighth paragraph, first line – What is AM?

Page 123, first paragraph, fourth line – The “most cost-effective fish passage” is a requirement of the WIIN Act for alternatives under (ii).

Page 123, Table 33 – States that calculations for OMRRR are included in the current cost estimate. These costs are non-federal. How are they determined and how are they to be enforced? How are they to be funded? Although the calculations for these costs are not included herein in this table, they are included in plan comparisons elsewhere in the report. Why are they not in both places?

Page 123, last paragraph, ninth line – When and how will the agencies, parties and governments be advised of modifications and afforded opportunities to comment?

Appendix H
Other Alternatives That Have Been Proposed

Other Alternatives that Have Been Proposed

There are many other alternatives including those not-favored by the Corps and those proffered by Augusta/North Augusta citizens and groups. Four examples are included herein.

A. Proposed Rock Ramp with Crest Gates & Recreational Bypass Option

Integration and incorporation of recreational and safety features for in-river users into fish passages on rivers – particularly those that impact the full river width is not new. The project in the figure above is a full-river width fish passage project that was design and constructed by the Corps. The authors also designed the first FERC-regulated project in the 1990s that provided for fish passage, safety for a wide variety of powered and paddled craft, and created a recreational venue that has operated since its construction with no structural maintenance issues or serious mishaps – traits demonstrated in all of the integrated fish and recreational whitewater projects designed by the authors.



This Whitewater Park in Pueblo, CO was Designed and Built by the Corps for Passage of Fish

Incorporations of some type of hydraulic gates, crest gates, flashboard, etc. in projects that maintain an upstream pool elevation is commonplace on many impounding structures built in the US. While the author is not aware of any statistics, it is likely that the majority of man-made structures built in rivers to reliably maintain an upstream pool elevation have some type of hydraulic gate.

It is highly likely that any alternative will need to include gates and/or require a significantly widened rock ramp (much wider than the proposed 500 feet) to meet fish passage and maintenance of the upstream pool objectives. However, a gate type or configuration different from those currently installed at the NSBLD is advantageous to readily integrate with a rock ramp passage as proposed in most of the presented alternatives.

Automated crest gates (sometimes referred to as flashboards) are used on many different dam and fish passage projects across the country. These gates have proven quite durable and require relatively minimal maintenance costs – particularly compared to the existing gates. Furthermore, the controls and operating systems have shown to be low-

maintenance and easily automated. A proposed option using automated crest gates is proposed for consideration. This arrangement is shown schematically in the following illustration. This option would be a variation on the proposed rock-ramp alternatives. The major difference is that a series of crest gates in maybe 10 to 20-foot or more foot sections would be aligned along the crest of the rock ramp. The height of the gates would need to be determined as outlined below but could be on the order of 4 to 7 feet.

1. **Operational Approach.** The operational tactic entails that the crest gates not be significantly over-topped when raised. This is desired for both fish passage and safety concerns for in-river users. Rather, sections of crest gates would be raised or lowered so that flow over the crest of the rock ramp would be routed around the raised crest gates toward one or more parallel channels or sections of the downstream rock ramp. The individual sections of the crest gates would be raised or lowered to maintain more consistent depths and velocities over the crest and within the rock ramp for a wide range of flows.
2. **Potential Advantages.** This option has the potential to increase the water surface in the upstream pool during lower flows (as compared to a fixed crest rock ramp) while reducing the elevation of higher frequency flood flows providing some level of flood control. Overall the advantage of a crest gate system is adjustability and flexibility with demonstrated low life-cycle costs. From a fish passage perspective, crest gates could improve passage conditions in that they can maintain minimum target depths while effectively reducing passage velocities. Another benefit is that the addition of crest gates would reduce variations in peak velocities throughout a wider range of flows. The downstream rock ramp could be configured or “tuned” for much a wider variety of flow or passage conditions provided via control of the crest gates. This allows for adjustments by regulatory entities to accommodate changes in fish passage parameters based upon observational data and applying adaptive management concepts common to species protection. Crest gate operations could be adjusted over the year or on a much more frequent basis to optimize conditions for passage of different fish and/or seasons.
3. **Recreational Bypass.** A recreational whitewater bypass is proposed to be routed around the rock ramp through NSBLD Park. The bypass, along with a series of guide buoys and signage, would provide increased safety by encouraging users of the proposed water trail and other “flat-water” recreationalists to route around the rock ramp fish passage. The whitewater course would act as the anchor for the proposed outdoor adventure sports venue bring significant economic and quality of life improvements to the surrounding communities. This is outlined further in the *River Vision Plan*. The whitewater bypass may also provide for conveyance of additional higher flows and minor flow regulation to stabilize upstream water surface elevations. The outlet of the whitewater bypass could be extended further downstream (perhaps as far as if desired to further separate it from the rock ramp. Additionally, the outlet could be configured to discourage or perhaps prevent entrance of some species of fish from entering.
4. **Development and Refinements.** Analysis and configuration of this option needs to be further developed to demonstrate desired fish passage requirements, safety considerations, and recreational objectives. The height and width of the crest gates, corresponding “fixed” invert elevation of the crest of the rock ramp, configuration of the downstream

rock ramp, and orientation of the rock ramp in the river need to be determined by further refinement, analysis, and evaluation of:

- Water surface elevation criteria,
- Fish passage hydraulics,
- Safety considerations
- Hydraulic analysis for higher frequency flood flows and regulatory flood flows,
- Hydraulic analysis to avoid increased flooding at Lock and Dam Park.
- Avoidance of encroachment into Lock and Dam Park.

One design concern to be addressed is in preventing sturgeon ascending the rock ramp from getting stuck or trapped behind a raised crest gate. Attention to this potential issue is no different from other rock ramp design issues and particularly with alternatives maintaining upstream pool elevations. There are several ways and combination of ways this could be addressed. One approach would be to create a variety of parallel routes through the rock ramp that would “connect” to specific groups of crest gates. These routes could be optimized for specific lower flow ranges as well as fully inundated conditions. Specific sills in the rock ramp downstream of the crest gates could also be configured to route sturgeon toward lowered crest gates. Additional traditional fish exclusionary measures can be employed.

Another design related issue is localized velocities at the crest and adjacent to raised sections of gates. Arrangement of mid-stream features could be investigated to improve hydraulic and passage conditions. Concept development and verification of this area could be accomplished using a CFD hydraulic model (3-dimentional) or even physical model to evaluate depths and velocities over a wide range of flows and conditions.

Integration of the recreational bypass also needs further development to promote user safety, maintain objectives in the NSBLD Park, and integrate into the City of Augusta’s river corridor planning.

Summary

This option is similar to the alternatives presented in the Draft Report in that it is a full river-width rock ramp that spans the entire river. Crest gates and a bypass are included to maintain the upstream pool elevation, provide for safety, and can provide recreational uses to mitigate for lost recreation including the lock, and integrate with current recreational uses of the Savannah River and the City of Augusta’s river corridor and economic planning. Crest gates are used on a wide range of large and small river projects. They have proven cost effective on many hydropower, diversion, and projects that have included fish passages. Whitewater bypasses and promotion of whitewater and safety of in-river users have also been included on many in-river projects that include fish passage and impounding structures. A good example of this, is the fish passage venue built by the Corps in Pueblo, Colorado, which was designed and built for fish passage with accommodation of recreational whitewater users.

B. Proposed Fish Lift System

Thomas Brothers Hydro, Inc. has proposed retrofitting the existing lock with a modular fish lift to move fish similar to the process in place at the Holyoke Dam on the

Connecticut River. The company states that this facility could be installed instead of the rock weir or ramp at a fraction of the cost. See further details at www.savannahriver.org.

C. Proposed Reauthorization and Rehabilitation of Lock and Dam with Modest Fish Passage Similar to 2012 SHEP Fish Passage (or Fish Lift).

The Save the Middle Savannah River citizens group has proposed a “common sense” solution – reauthorization and repair of the Lock and Dam and construction of a modified structure such as a fish lift or modest-sized fish bypass to pass the sturgeon – that addresses all of the concerns outlined in these comments and protects the vital interests of both the CSRA and those of the SHEP project.

According to the group’s website, there is a solution that would align the environmental mitigation requirements of the Savannah Harbor Expansion Project (SHEP) with most of the goals of the Corps of Engineers, the Consortium for the Lock and Dam and the vital interests of both the Central Savannah River Area (CSRA) businesses and the broader Middle Savannah River communities under a commonsense, workable plan, at a reasonable, if not substantially lower, cost than the other solutions. It is already environmentally vetted, and is virtually shovel-ready. The solution includes the following major components:

- **Rehabilitation of the New Savannah Bluff Lock and Dam** consistent with the intent of the WIIN Act and the mitigation needs of the SHEP project, thereby protecting: navigation and recreation, control of the pool for some flood regulation, and to support the many events that depend on a pool that can be easier regulated, such as the Augusta Drag Boat Races, Iron Man, etc.
- **Construction of a Fish Bypass (or Fish Lift)** around the Lock and Dam as previously planned and approved for SHEP mitigation, similar to the already approved 2012 Fish Passage, along with the rehabilitation efforts listed above. Part and parcel to this, Save the Middle Savannah is asking the Corps to meet with South Carolina and Georgia DNR to ensure that the size of the bypass should be minimized to the amount necessary for sturgeon and other migratory fish, but no more, in an effort to control cost.
- **Evaluation of localized spawning habitat restoration projects** for endangered species downstream and elsewhere. There is much published material that neither a bypass or direct overpass will effectuate a facility that will be used by the sturgeon. Save the Middle Savannah is very much a proponent of using its influence to help ensure that, whatever alternative is decided for the sturgeon, that there is sufficient science to warrant success (versus simply checking a "mitigation box")

This common-sense solution would cost the least of all the alternatives heretofore proffered and would be the quickest to implement and the most beneficial for the SHEP initiative.

See <https://www.savethemiddleriver.com/>

D. Proposed Lock Modifications and/or Fish Lift and Downstream Fish Guiding Wall

ZEL Engineers, Inc. has proposed making modifications to the existing lock to take out the vertical steps in the floor levels and replace them with a sloping floor as a more suitable travel path for migrating sturgeon. The plan also includes installing a diagonal training wall submerged on the downstream side of the dam to shield bottom-travelling fish from the strong currents from the gates and to guide them toward the lock.³⁸

C. Other Alternatives to Be Considered

Consideration should also be given to other alternatives that meet the goals of SHEP and the Augusta and North Augusta communities, and the Central Savannah River Area.

³⁸ Letter from Jorge E. Jimenez, P.E. to Savannah District, U.S. Army Corps of Engineers, Planning Division, Attn: Ms. Robin Armetta (PM-P), dated March 12, 2019.

Appendix I
Transcript of City of Augusta Public Meeting, Lock and Dam
Meeting, March 31, 2019

In The Matter Of:
CITY OF AUGUSTA PUBLIC MEETING
LOCK AND DAM MEETING

March 31, 2019

Augusta Scribes Court Reporters, LLC
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CITY OF AUGUSTA PUBLIC MEETING
LOCK AND DAM MEETING

March 31, 2019
Commencing at 5:00 p.m.

City of Augusta
Commission Chambers
535 Telfair Street
Augusta, Georgia 30901

Brittany N. Draper, CCR, CVR

1 PROCEEDINGS
2 MS. JACKSON: We welcome all of you
3 to the commission chamber today for this
4 very important occasion. This has been a
5 topic of conversation in our community for
6 many, many years. We're now at a critical
7 juncture and it's very important that we
8 have public input, and we can share with
9 the decision makers and the federal
10 government what the views really are --
11 people in our community.

12 Our park, Lock and Dam park, our
13 river, all of the things that are
14 associated with it have been tremendous
15 assets for us. And we appreciate your
16 concern for the protection of those assets.
17 We appreciate you being here today.

18 We do have sign-in sheets, I think,
19 at either podium. I know there's one over
20 here for sure. So if you have not signed
21 in already, you may still do so. We just
22 wanted to do so so we have record of
23 everyone who has attended and who wanted to
24 speak. We also have a court reporter with
25 us so that we can record those comments and

1 we'll have a full text of all of the
2 comments that have been made here today.
3 However, before we get started with
4 that, I would like to recognize all of the
5 elected officials who are with us today. I
6 notice a couple more have come into the
7 room, so hopefully I will not miss anyone.
8 I will start off with our elected
9 officials from Augusta. Those include
10 Mayor Hardie Davis, sitting up front, The
11 Commissioner Sean Frantom from District 7,
12 Commissioner John Clarke from District 10,
13 Commissioner Dennis Williams from District
14 2, Commissioner Ben Hasan from District 6,
15 Commissioner Elect Bobby Williams from
16 District 5, Commissioner Sammie Sias from
17 District 4, and Commissioner Bill Fennoy
18 from District 1.
19 Also, we're privileged to have
20 representatives from our neighboring
21 communities in South Carolina. Mayor Bob
22 Pettit is here from North Augusta. Aiken
23 County Chairman Gary Bunker, as well as
24 Aiken County Councilman Chuck Smith are all
25 in attendance, many of whom will have

1 remarks for us this evening.
2 In addition, we are also pleased to
3 have with us two members of Congress, one
4 being Congressman Joe Wilson of South
5 Carolina. I know he's in here somewhere --
6 there he is. Okay. And Congressman Rick
7 Allen, who represents Augusta, is here as
8 well.
9 We thank all of you for being a part
10 of this. We'll proceed now with a general
11 overview and objective of our meeting by
12 Tom Wiedmeier. He's our director of the
13 Augusta Utilities Department.
14 MR. WIEDMEIER: Good evening. Okay.
15 So the original SHEP plan was to build a
16 fish passage around the Lock and Dam. This
17 was put forth in probably 2012. A problem
18 with this was that it didn't touch the
19 existing Lock and Dam, it did no repairs or
20 upgrades to that.
21 An interesting point is it's been
22 pointed out that this, which is considered
23 the no-action alternative by the Corps,
24 this is what they compare all the
25 alternatives to, could not be constructed

1 by the current legislation. What the Corps
2 arrived at as their preferred option is a
3 fixed weir with floodplain bench. This is
4 a rock dam spanning the river, it removes
5 the existing Lock and Dam, constructs a
6 rock dam with a fixed weir, and then it
7 excavates through the park a floodplain
8 bench which we essentially dig out about 10
9 feet. That bench would be about a foot
10 higher than the water surface.

11 So the Corps' modeling predicted that
12 the water depth at 5th Street would drop
13 from 11 and a half feet to 9 and a half
14 feet. A 1- to 2-foot impact is what they
15 were predicting by their modeling. This
16 is, in fact, what we saw, much, much
17 greater than a 2-foot drop, I would guess
18 4-plus feet.

19 So what the City has advocated, both
20 cities, Augusta and North Augusta are
21 advocating for is an alternative that they
22 consider and actually scored as high as
23 their recommended alternative, which is to
24 rehab the dam, build a fish passage on the
25 Georgia side. It would tear out the

1 existing lock and build a fish passage.
2 So in their evaluation, you'll notice
3 that both alternatives, 1-1 is what the
4 City is advocating for, 2-6d is what the
5 Corps arrived at. Both scored equally at a
6 four. At the time that they revealed their
7 evaluation back in November, Augusta's
8 preferred alternative was priced at \$61
9 million in capital costs and the Corps'
10 preferred alternative was 68.9.

11 The difference was the annual O&M
12 cost. They predicted \$950,000 a year would
13 be needed to maintain 1-1. Their
14 alternative, they projected \$45,000 a year.

15 Now, some new information was just
16 received this week by the letters to
17 mayors, both mayors, and the numbers have
18 changed dramatically. And they're using a
19 different basis. I thought that this was
20 in present value, Mayor Pettit doesn't
21 think that that's the case, but regardless,
22 the price for 1-1 for present value, or
23 something like that, is now \$380 million,
24 which includes all your O&M.

25 And by the way, they're doing this on

1 a 100-year lifecycle, so -- and their
2 preferred alternative has a present value
3 of \$105 million.

4 So I make that point to say that
5 we're kind of dealing with a lot of
6 changing numbers and we're trying to
7 respond to that.

8 I'd like Tom Robertson, who is a
9 consultant that's been retained by both
10 cities, to make a comment on the dilemma
11 that a fixed weir presents.

12 MR. ROBERTSON: Thank you, Tom.

13 I don't have any pictures of this,
14 but I'd like to just point out that -- sort
15 of how we got to where we are. That the
16 Corps came up with what they call two value
17 engineering alternatives, so before this
18 WIIN Act was put in place, one of those was
19 to construct a rock ramp or fish passage
20 over the top of the Lock and Dam, keeping
21 the lot, by the way. And then the second
22 alternative was to build a rock weir or
23 pile of rocks about a mile upstream. And
24 those two alternatives were what was used
25 to draft the legislation, either a rock

1 ramp over the dam or a separate structure
2 elsewhere. Well, those would be fixed so
3 you couldn't open the gates and let the
4 floodwaters through like you could before
5 on either one of those alternatives.

6 So of the alternatives that are now
7 before us, those two alternatives are two
8 that the Corps has summarily X'd out, so
9 neither one of those of the original
10 alternatives is even feasible. And the
11 reason for that is is that by the federal
12 regulations on floodplain, you can't raise
13 the 100-year flood, and the Act itself says
14 you can't lower the pool.

15 So if you put a pile of rocks in the
16 middle of the river and you can't open the
17 gates anymore, then, I mean, the hand of
18 God isn't going to reach down and pull that
19 out of the way when the flood came. So you
20 can't have it both ways. You're either
21 going to raise the floods or you're going
22 to lower the pool.

23 So that's why we think that the 1-1
24 is the superior -- or really the only
25 option that the Corps has on the table

1 today that actually can do what the WIIN
2 Act says, and that is to save the gates.
3 So I'd just like to point that out. And
4 I'll step down. Thank you.

5 MR. CAMPBELL: All right, ladies and
6 gentlemen. What we are about to do now is
7 have brief comments by our special guests
8 and our mayors.

9 Congressman Wilson, if you would like
10 to come up, and he'll be followed by
11 Congressman Allen, then Mayor Davis, Mayor
12 Pettit, and then Chairman Bunker.

13 CONGRESSMAN WILSON: And ladies and
14 gentlemen, it's really inspiring to see the
15 friends of the Savannah River of Georgia
16 and South Carolina together.

17 It was really inspiring to me to come
18 in with Roy Simkins. He was the person who
19 took me to the Lock and Dam years ago and
20 said -- and told me how important it was.
21 And I saw what a great asset that is, and
22 how it needs to be maintained.

23 And then I'm very grateful that Mayor
24 Davis and I met in Washington on this
25 issue. And we've had wonderful meetings.

1 And then Mayor Pettit, I'm really
2 grateful, mentioned to me that when he was
3 sworn in, one of the first topics that we
4 discussed was the importance of maintaining
5 the Lock and Dam, maintaining the pool.

6 And another person that I really want
7 to give so much credit to is Congressman
8 Rick Allen. There's not a day that goes by
9 that Congressman Allen and I, on the House
10 floor, do not strategize and plan letters
11 and different efforts to maintain the pool.

12 And we also have the opportunity to
13 work with Senator Tim Scott and Senator
14 Lindsey Graham. And they will be having
15 representatives actually visit the lock
16 tomorrow.

17 And the point is that we understand
18 that the congressional intent of the
19 language of the Water Infrastructure
20 Improvement for the Nation Act, the WIIN
21 Act, is to interpret that the pool must
22 maintain the physical level of the heighth
23 on the date of enactment, which was
24 December the 16th, 2016.

25 According to information from the

1 U.S. Geological Survey, the water level of
2 the Savannah River at the 5th Street bridge
3 varies between 113.5 feet and 114.5 feet.
4 And the pool should be maintained at 114.5
5 feet, which is largely what it is today.

6 The Corps' draft recommended plan
7 would lower the pool as a -- has been
8 indicated, but we know that it's
9 catastrophic what happened. This was not
10 just a minor 1- or 2-foot drop, but it was
11 a catastrophic drop.

12 And I believe that it's simply not
13 within the law because the WIIN Act
14 provides that the physical level be
15 maintained on the date of enactment.

16 I also believe that the water level
17 of 114.5 is what should be approved. It's
18 disappointing to me that the Corps of
19 Engineers has misinterpreted the intent of
20 the WIIN Act, but we know that the physical
21 level is what was intended.

22 I want everyone to know that our
23 office is available to help anyone on
24 comments. We have Martha Ruthven here.
25 Martha is at our office at the

1 administration building in Aiken and
2 assisting anyone with comments.

3 And then we have on the board that I
4 brought, that we have ways by postal mail
5 or by email to make comments, because I
6 just know that the Corps of Engineers has
7 already taken one step, which is good, by
8 providing for an additional 30 days to
9 comment, through Tuesday, April the 16th,
10 at 4:00 p.m.

11 And I'm just so hopeful that with the
12 persons who are here tonight, with the
13 messages that you will be providing, that
14 the Corps will pay attention to the
15 citizens of this community and in
16 particular see how incredible it is bistate
17 and, I understand, even bipartisan.

18 And so this is an amazing, remarkable
19 circumstance. I wouldn't want to point out
20 anybody who might be of a different party,
21 but hey, this has united the community in
22 such a positive way and the people who are
23 here can make a difference. God bless you.
24 Thank you.

25 CONGRESSMAN ALLEN: Joe also failed

1 to tell you, he's a ranking member on the
2 Armed Services Committee and has been very
3 generous with his time and efforts in
4 working.

5 This is under the United States Army.
6 You know, we fund the Department of Defense
7 and, of course, the SHEP funding is a
8 separate -- it's under the Transportation
9 and Infrastructure Committee and, of
10 course, that's how the work on the Lock and
11 Dam is going to be funded. So Joe has been
12 a great partner and, Joe, thank you for
13 everything.

14 In fact, we delivered, or hand
15 delivered, a letter to the -- Joe had a
16 meeting with the Secretary of the Army,
17 yeah, and we went right to the top and we
18 delivered a letter.

19 And, basically, the letter said that
20 the Corps had been very untruthful with two
21 members of Congress. We think that is
22 subordination and it should be dealt with.
23 And so we're hoping -- we've asked for a
24 follow-up meeting and we're hoping that we
25 get some results out of that 'cause,

1 frankly, I am absolutely tired.

2 As the President says often to me, he
3 said, this is just common sense, you know.
4 I mean, yeah, we have a pool of water we've
5 maintained since the '30s. This dam is an
6 engineering marvel. This thing works. I
7 mean, I've been down there, y'all, and the
8 water has been the same level on both sides
9 during this rainy season and the gates have
10 been wide open. So we know it works.

11 The fish -- the fish ladder, you
12 know, I have studied that and studied that
13 and studied that, and I -- you know, I
14 don't want to get into all the details on
15 that, but we have spoken with NOAA, we've
16 met with those folks, and frankly we think
17 we got some better ideas there, but let's
18 deal with this first.

19 We have got to get the Corps of
20 Engineers to understand that there will be
21 no exceptions, none whatsoever. That Lock
22 and Dam is going to stay in place. It's
23 going to be repaired and it's going to be
24 maintained, period.

25 I met with them in April of 2015 and

1 that was the words out of my mouth. They
2 went behind my back and somehow got this
3 legislation in a water bill that I could
4 not vote on because I knew nothing about
5 the legislation. But the good news is it
6 did maintain the level of the pool and I
7 was assured that that pool would be
8 maintained and we would look at some
9 option.

10 Well, folks, we're out of options.
11 And what I don't want to happen is for us
12 to -- we have to get that port deepened.
13 It's the number four port in the country.
14 We don't want to delay the deepening of
15 that port. What we want the Corps to do is
16 get this thing done, get the design done,
17 get the fish ladder done, and let's get
18 under construction and be done with it.

19 You know, the idea is we have got to
20 get this under construction by 2021. And,
21 you know, every time, you know, like 1-1
22 comes up, they say, okay, it's going to
23 delay the project. And we got NOAA to
24 commit to, like, 130-day review -- by the
25 way, this is Lauren Hodge, and Lauren,

1 this -- she has lived the life of this
2 thing since the -- since this -- since our
3 first meeting in April of 2015. So if you
4 need to know any details or want any
5 correspondence from our office and how
6 we're dealing with this thing, Lauren has
7 it all, and she has all the documentation
8 on it.

9 But the bottom line is, we have got
10 to get the Corps to go ahead, move forward
11 in this process. I do not trust their
12 numbers. In the first meeting, they came
13 to me, they said the fish passage was going
14 to cost 30 million and the repair to the
15 dam was going to cost 20 million. And I
16 said, well, what's the problem? They said,
17 we don't have the money to repair the dam.

18 I'm looking at numbers here. I don't
19 believe this. And if we have to, we will
20 remove the Corps from this project. We
21 will put the Georgia DOT in charge of this
22 thing and we will do it for a portion of
23 those funds.

24 So as you can tell, I'm a little
25 passionate about this because I just don't

1 like the way some of these agencies do
2 business, which is one of the biggest
3 problems the United States Congress had.
4 I can't -- I gotta tell you real
5 quickly, Roy called me one day and he said,
6 who in the heck is in charge up there? The
7 United States Congress or the Corps of
8 Engineers? I said, Roy, we're doing the
9 best we could do. And we are. We're
10 fighting it all the way.
11 Roy, thanks for all your work on
12 this, and your attorney who has done
13 wonderful work in helping us get through
14 this process.
15 But that's where we are. Thank you
16 for being here today. The reason you're
17 here today is to convince the Corps of
18 Engineers that we're right. And this is
19 just common sense.
20 Thank you for being here. Thank you
21 for sharing this with us. And just --
22 we've just got to get it done. That's just
23 all it is, just common sense. Thank you
24 very much.
25 MAYOR DAVIS: I do want the citizens

1 of Augusta to know that that's my
2 Congressman.
3 I want to, one, thank everybody for
4 coming out tonight. And these will be
5 generally referred to as my comments that
6 will go into the official record along with
7 the work that's being done by our team,
8 with Tom Wiedmeier, Robertson, and the
9 expert group who's helping them.
10 I want to direct these comments to
11 Governor Kemp, Lieutenant Governor Duncan,
12 Speaker Ralston, to our two senators on the
13 Georgia side who have been noticeably
14 absent in this conversation, Senators
15 Perdue and Isakson, and I wanted to direct
16 these comments to the Corps and the Georgia
17 Ports Authority and GDOT.
18 Governor Kemp, I'm sure that you're
19 aware of the situation in Augusta, Georgia,
20 regarding the New Savannah Bluff Lock and
21 Dam and the United States Army Corps of
22 Engineers' desire to replace the dam with a
23 lowered fixed crest weir with a dry
24 floodplain bench, that has been referred to
25 as Alternative 2-6d.

1 In February, the Corps conducted a
2 fixed weir pool simulation to allow members
3 of the public and stakeholders along the
4 Savannah River to experience the conditions
5 that accompany Alternative 2-6d.
6 The Army Corps of Engineers assured
7 the cities of Augusta and North Augusta
8 that our riverfront would not be
9 significantly impacted. The simulation
10 demonstrated that the Army Corps of
11 Engineers was wrong.
12 The leadership, the citizens, and the
13 stakeholders of Augusta, Georgia, North
14 Augusta, South Carolina, have made it clear
15 that the conditions of the river during the
16 simulation was not and is not what we want
17 to see every day, 24 by 7, 365 days of the
18 year.
19 The consolidated government of
20 Augusta, Georgia, and their citizens have
21 come to rely and depend on the pool of
22 water that the dam has created since 1937
23 when the dam originally when into service.
24 It is unacceptable for the Corps or
25 anyone to believe that it's morally or

1 ethically right or appropriate to sacrifice
2 our communities, our life, our health, our
3 welfare and safety, so that the Savannah
4 Harbor Expansion Project could continue
5 without any consideration for those of us
6 who are upstream.
7 And as a result of that, laws and
8 regulations across every level of
9 government have acknowledged the fact that
10 clean water is the first step along the
11 critical path for assuring the health of a
12 community.
13 The Savannah River's clean water has
14 financed healthy growth in Augusta for
15 hundreds of years. In Augusta, over a
16 thousand miles of pipeline deliver the
17 Savannah's water to folks as far away as
18 Fort Gordon. One of the only installations
19 that continues to grow as a part of the
20 DOE -- DOD complex, providing drinking
21 water, bathing water, and on-demand
22 resources for other uses.
23 The Georgia Environmental Protection
24 Division projects a 20 percent jump in our
25 area's population over the next 30 years.

1 As a result of that, by 2050, Mayor Pettit,
2 Augusta's water needs will increase by 34
3 percent. Augusta has incorporated these
4 projections into our new comprehensive plan
5 from last year that we're calling Envision
6 Augusta, a Plan for 2035. The Corps,
7 likewise, relies on EPD's 2050 numbers in
8 the management of their assets throughout
9 the water basin.

10 Despite all of this, the plan for
11 Augusta fails to take our future needs into
12 account. They've counted our intakes, they
13 reviewed our permits, and determined that
14 their plan will not have an adverse impact
15 on our water supply.

16 A legitimate analysis would reflect
17 the reality of stocking our drastically
18 downsized pool with two species of
19 endangered fish that to this very day I
20 still have not seen, and then asking that
21 same pool to support the needs for
22 withdrawal, discharges, recreation,
23 navigation, development, and special events
24 of a 20 percent larger population.

25 The Army Corps of Engineers is aware

1 that the river provides for nearly 90
2 percent of Augusta's water needs, and their
3 failure to legitimately address their
4 project's impact on our area is
5 unacceptable.

6 Their analysis should address head on
7 the very real possibility that their plan
8 should either compromise -- could either
9 compromise the health and well-being of our
10 growing city or cut that growth off at the
11 knees. That is unacceptable. And we will
12 not stand by silently, but we will pursue
13 every avenue to make amends and get this
14 corrected.

15 The City of Augusta and our
16 neighboring communities have stood silently
17 in support of an alternative that we did
18 not develop, but rather the Corps
19 themselves provided us, and that was
20 Alternative 1-1, which scored the same as
21 Alternative 2-6d on the Corps' matrix,
22 which as I might add, the numbers you see
23 there are astronomically different than
24 what we were provided during the matrix.

25 And so I close my comments with this:

1 We are one community, we are one river, and
2 we have been told we are one Georgia, not
3 two Georgias. We have been told that we
4 will put Georgians first, and I submit to
5 you that putting Georgians first includes
6 those of us in Augusta, not just in
7 Savannah.

8 MAYOR PETTIT: I've been mayor for
9 nearly 2 years and the thing I've gotten
10 best at is lowering microphones.

11 Thank you for the eloquence and the
12 passion, and I think I'm going to fall down
13 on the side of passion. I unfortunately or
14 fortunately am an engineer just like Mayor
15 Davis, and so I love details and becoming a
16 wonk when it comes to looking at all the
17 documents that are provided to us. But I
18 want to talk at a different level today.

19 You know, as -- I am the Mayor of
20 North Augusta, South Carolina. The impact
21 of what the Corps of Engineers is talking
22 about will be devastating to our cities.
23 And this is all for their harbor in
24 Savannah, Georgia, so it can be deepened,
25 and I understand the importance of that.

1 You know, the recent simulation was
2 advertised to prove to us that the Corps'
3 alternative would have minimal impact. In
4 fact, the Corps said before it started that
5 we would -- there wouldn't be any
6 noticeable difference really. You know,
7 obviously, that was far from what we saw.
8 That was far from reality.

9 We saw boat docks sitting on dry land
10 far from the water, riverfront homes
11 purchased with probably life savings now
12 without a river. I find it frightening,
13 quite honestly, to find that the Endangered
14 Species Act is being used to damage our
15 cities and this community.

16 And this isn't really about the WIIN
17 Act, it's about the Corps of Engineers
18 wanting to get rid of the Lock and Dam.
19 You know, the Corp's finally found a fish
20 to help get it done, even though in the
21 previous 14 years, there was not an effort
22 expended to get the money to help that
23 fish.

24 Now, SHEP will provide the money, but
25 in my opinion, North Augusta and Augusta

1 and you are paying the price. Thank you.
2 MR. BUNKER: Good afternoon,
3 everyone. I'm Gary Bunker, Chairman of the
4 Aiken County Council. And I've learned
5 every time I follow Mayor Pettit, I have to
6 raise the microphone on these.

7 I am very honored to be here
8 representing Aiken County, being able to
9 come over to this side of the river in
10 order to work on a project of mutual and
11 common interest here.

12 I do want to recognize my colleague
13 Chuck Smith, who serves District 4, Aiken
14 County Council, represents the City of
15 North Augusta, and has been also a very
16 strong advocate in regards to the Lock and
17 Dam issue.

18 I do intend to read into the record
19 the comments, and I'm going to submit a
20 hard copy in regards to this issue.

21 The recent drawdown of the Savannah
22 River to simulate the implementation of
23 option 2-6d on the New Savannah Bluff Lock
24 and Dam was a real eye-opener. My
25 understanding is that the estimated drop in

1 the water surface elevation between the
2 status quo at approximately 114.3 feet to
3 the simulated 112.4 feet for option 2-6d
4 should have totaled 1.9 feet. The observed
5 change was greater than predicted.

6 Is there an explanation for this
7 discrepancy, and what have we learned about
8 the reliability of these forecasting
9 models?

10 A small example of what we saw during
11 the drawdown occurred at the Horse Creek
12 Wastewater Treatment Plant in Aiken County.
13 We witnessed foaming conditions at the
14 outfall, which became level with the
15 surface of the pool. This didn't inhibit
16 plant operations, but it is not an optimal
17 solution.

18 If option 2-6d results in the pool
19 being lowered to this level, then Aiken
20 County taxpayers will foot the bill to
21 lower and extend this outfall structure.

22 The Aiken County Council has been
23 concerned about the future of the New
24 Savannah Bluff Lock and Dam for nearly 20
25 years. In the year 2000, it passed a

1 resolution requesting that the dam not be
2 closed. It cited the importance of the
3 current pool level for industrial users,
4 water utilities, recreation, and tourism.
5 And nearly 20 years ago, the millions spent
6 by the cities of Augusta and North Augusta
7 on riverfront development were already a
8 concern.

9 In 2017, the Aiken County Council
10 supported repair and rehabilitation of the
11 dam, including a fish passage to preserve
12 the pool to current level and to mitigate
13 flooding risks in Augusta and North
14 Augusta.

15 Council thought the primary
16 objectives under the Water Infrastructure
17 Improvements for the Nation, or WIIN, Act
18 included the maintenance of the pool for
19 water supply, recreation, flood control.

20 And this past January, the Aiken
21 County Council officially endorsed option
22 1-1 over option 2-6d. This option would
23 best meet the WIIN Act requirement that any
24 mitigation project must maintain the pool
25 at the elevation existing at the date of

1 its adoption.

2 On the other hand, any significant
3 lowering will create operational issues for
4 industry and local government along with
5 aesthetic and recreational issues, putting
6 at risk millions of dollars of investment
7 along the riverfront. North Augusta's
8 Riverfront Village doesn't want to become
9 North Augusta's mudflat village.

10 And in a further development, the
11 South Carolina General Assembly passed a
12 budgetary proviso prohibiting the South
13 Carolina Department of Health and
14 Environmental Control from assisting any
15 efforts on the New Savannah Bluff Lock and
16 Dam that are inconsistent with the existing
17 water quality and navigability conditions.

18 The proviso explicitly references the
19 114-foot elevation, quote, "for the
20 preservation of adequate and sufficient
21 water quality, navigation, water supply,
22 and recreational activities," unquote.

23 Aiken County favors option 1-1. From
24 what we've seen, the recent drawdown has
25 done nothing to convince us otherwise. If

1 this is what option 2-6d looks like, then
2 the Aiken County Council wants nothing to
3 do with it. Thank you very much.

4 MR. SMITH: Good afternoon. I'm
5 Chuck Smith and I represent District 4,
6 North Augusta, and thousands of people
7 along that river on the side of North
8 Augusta.

9 This would be a devastation to our
10 community I don't think we know the likes
11 of until it happens. The unintended

12 consequences of letting that river run dry
13 will be economically devastating to this
14 area for many, many, many years to come.

15 How many times do we have to learn
16 this lesson? In 2000, we let the river run
17 dry again to see what the damage would look
18 like, and it was devastating. The walls
19 started falling inside on each other, our
20 community lost millions of dollars of
21 property damage. How many times do we have
22 to learn it?

23 We did it again to look at the
24 drawdown. As the Corps said, there's not
25 going to be any damage. The damage was

1 tremendous, and if they would've allowed it
2 to go full -- the full test, the damage,
3 I'm sure, would've been just as bad as it
4 was in 2000 when they let it run dry.

5 The thousands of people that would
6 lose their livelihoods and their
7 investments in that river would be
8 tremendous. We have invested hundreds of
9 millions of dollars in that river, and
10 we're talking about \$275,000 of difference
11 after we get -- after we lose the \$8
12 million on the other plan to this option
13 2.6.

14 Option 1.1 is the only option.
15 Otherwise, we're going to lose hundreds of
16 millions of dollars over the years to come
17 and the unintended consequences the Corps
18 has no idea of.

19 So I think this is great that we have
20 everybody together to rally around. The
21 benefits of these communities and what that
22 river means to us. We gotta fight this
23 thing to the -- to the dire end. Thank
24 you.

25 MR. CAMPBELL: All right. So,

1 briefly, what I would like to do is just go
2 over what I like to call some rules of
3 engagement before the comment period.

4 If you'd like to provide public
5 comments, please completely fill out the
6 sign-in sheets located at each podium to my
7 left and to my right. Please speak into
8 the mic to be heard clearly. We have a
9 court recorder present, and we would like
10 for her to be able to capture everyone's
11 comments accurately.

12 In an effort to ensure everyone is
13 heard, each person will have no more than
14 three minutes to provide public comment.
15 Please do not interrupt the speaker until
16 their time has expired or they have
17 completed their statement.

18 To effectively use the time
19 permitted, please consider yielding your
20 opportunity to speak if someone before you
21 has clearly stated your comment.

22 Please use the forms in the back if
23 you would like to provide written comments,
24 or you can email your comments to
25 mayordavis@augustaga.gov. And last but not

1 least, be nice. Y'all have a good evening.

2 Also, when you come to the mic,
3 please state your first and last name and
4 the address of your residence. Thank you.

5 First -- first, we'll have a
6 Mr. Todd, Moses Todd.

7 MR. TODD: Good evening. I've
8 submitted comments to Mayor Davis, but I'll
9 read them for the record.

10 UNKNOWN SPEAKER: Name and address.

11 MR. TODD: My name is Moses Todd. My
12 address is 2115 Noland Connector, Augusta,
13 Georgia. And I'm in Representative Allen's
14 district.

15 So I'm a resident of Georgia who fish
16 the Savannah River. In addition to
17 fishing, we rely on the Savannah River for
18 water pool for drinking water, boating, and
19 recreation use. Georgia industrial --
20 industry rely on the Savannah River for
21 water for the production of their products.
22 Georgia Power, Southern Company rely on the
23 Savannah River for cooling water for four
24 nuclear reactors.

25 I am in support of keeping the Lock

1 and Dam. It's essential to the City of
2 Augusta that the pool level upstream from
3 the Savannah Bluff Lock and Dam be remained
4 at the average current level and the Lock
5 and Dam be repaired and kept as part of the
6 Savannah River infrastructure.

7 I represent today here 1,000 members
8 of Plumbers and Steamfitters Local 150. If
9 you know anything about plumbers or
10 pipefitters, steamfitters, without water,
11 you know, it's kind of like Mr. Wiedmeier
12 said, the director of our utilities, that
13 water is life and to us as pipefitters and
14 plumbers, water is life. And without that
15 river, without the support of the water for
16 industry, you know, we don't -- we don't
17 have jobs. We're talking about tens of
18 millions, if not hundreds of millions in
19 economical development on that river that
20 we rely on as blue collar workers, you
21 know, for jobs.

22 So I would like for the Corps to
23 consider that when they're considering
24 cost, that there's costs outside of the
25 hundred-year projection that they give us

1 and there's -- and they mention a cost, but
2 they didn't mention the revenue. You know,
3 that we understand that there's trust
4 funds, you know, for upstream and for the
5 harbors, and there's funds that's --
6 revenue that's raised, you know, over this
7 hundred-year period.

8 So we want them to be fair to
9 consider everything and consider the people
10 as well as the fish in that river. Thank
11 you.

12 MR. MONTGOMERY: My name is Erick
13 Montgomery. I live at 606 Overland Road in
14 Augusta. I'm also the Executive Director
15 of Historic Augusta, which is located at
16 415 7th Street.

17 The New Savannah Bluff Lock and Dam
18 is a historic structure completed in 1937
19 and has historic significance in both the
20 states of Georgia and South Carolina. The
21 Lock and Dam was determined eligible for
22 listing in the National Register of
23 Historic Places in both 1996 and again in
24 2001 by the Historic Preservation Division
25 of the Georgia Department of Natural

1 Resources under provisions of the
2 National Historic Preservation Act.

3 Brockington and Associates completed
4 an additional assessment in 2013
5 summarizing the history of the Lock and
6 Dam. This included revealing archival
7 photos and drawings as well as current
8 assessments. I have here with me a copy of
9 the relevant parts of that report.

10 These determinations and assessments
11 have consistently recommended preservation
12 and rehabilitation of the New Savannah
13 Bluff Lock and Dam, while introducing the
14 required fish passage in a sensitive manner
15 that would not detract from the historic
16 structure in any significant way.

17 Although the Brockington study was
18 commissioned to only assess the area
19 immediately surrounding the Lock and Dam,
20 we submit that the entire water impoundment
21 that was created by the structure is of
22 historical significance, having been in
23 place well over 50 years, now 82 years, and
24 this -- this would include the entire pool
25 up through downtown Augusta and North

1 Augusta.

2 The National Register of Historic
3 Places criteria calls for buildings, sites,
4 structures, objects, and districts to be at
5 least 50 years old, which means the New
6 Savannah Bluff Lock and Dam easily meets
7 the age requirement for the National
8 Register eligibility.

9 The Georgia State Historic
10 Preservation office has determined that the
11 Lock and Dam is eligible for the National
12 Register under criterion A and C of the
13 National Historic Preservation Act.

14 Criterion A says that properties that
15 are associated with the events that have
16 made a significant contribution to the
17 broad patterns of our history are eligible.
18 And according to the determination of
19 eligibility, the New Savannah Bluff Lock
20 and Dam meets this threshold because of its
21 association with transportation history due
22 to the locks and the water connection
23 between the upper Savannah River and the
24 Atlantic Ocean.

25 Under Criterion C is for -- which is

1 for properties that embody the distinctive
2 characteristics of a type, period, or
3 method of construction, or that represent
4 the work of a master, or that possess high
5 artistic values, or that represent a
6 significant and distinguishable entity
7 whose components may lack individual
8 destruction.
9 According to the determination of
10 eligibility, the New Savannah Bluff Lock
11 and Dam meets this threshold because of its
12 design as a significant -- as significant
13 examples of architecture and engineering,
14 as well as various structures associated.
15 To conclude, we urge the U.S. Army
16 Corps of Engineers to select the option
17 that will preserve the New Savannah Bluff
18 Lock and Dam, rehabilitated in such a way
19 that it can -- that it will continue to
20 maintain the historic pool level that
21 was -- that was -- that existed between
22 Richmond and Aiken counties for over 82
23 years, and allow that pool to continue to
24 serve the citizens of the United States for
25 the purposes of water supply, industrial

1 needs, recreation, and overall quality of
2 life amenities. Thank you very much.
3 MR. AMIN: Good evening, everyone.
4 My name is Parin Amin. I live at 3641
5 Foxfire Place, Columbia County, Martinez,
6 Georgia. And I just want to start by
7 addressing some of the things that have
8 been going on here.
9 I've been to a bunch of these
10 meetings, I've called some of my
11 representatives, and the Army Corps on
12 numerous occasions has told us that the way
13 the WIIN Act is being interpreted at 114.5
14 feet is not accurate.
15 There's nothing in the WIIN Act that
16 mentions any specific level that is
17 protected. It says specifically that the
18 uses of the pool are protected, and those
19 uses are water supply, navigation,
20 recreation.
21 So for those of us that think that
22 the specific level has to be the exact same
23 as it was on that date is just not an
24 accurate interpretation of the WIIN Act.
25 If any of us here had spent the time

1 before this body passed a resolution that
2 said that they were going to go on with
3 what the Save the Pool People wanted, had
4 done their due diligence, they would have
5 seen that that's the way it is.
6 Now, we have a couple of options
7 here. We don't have to take the Army Corps
8 option, but the option 1-1, when you saw
9 the -- the matrix up there, and they did
10 both score the same, but if you looked at
11 the very first category which said Fish
12 Passage, it was a zero for keeping the Lock
13 and Dam and the one for their alternative.
14 Now, the fish passage is the number
15 one goal of this project. That's why it's
16 funded. So repairing the Lock and Dam and
17 having a fish passage on one side simply
18 doesn't meet the requirements of the
19 lawsuit that was settled on by numerous
20 parties from both states, South Carolina
21 DNR, Georgia DNR, Savannah Riverkeeper,
22 Ducks Unlimited, and the many other groups
23 that sat down and discussed all these
24 options.
25 Now, we aren't stuck with the Army

1 Corps' only option. There are -- there is
2 another option that's being worked on, but
3 a lot of people haven't heard it. The
4 Savannah Riverkeeper is working on another
5 option, but a lot of us here, and I know
6 'cause I've seen these faces before, have
7 something against the Savannah
8 Riverkeeper's office.
9 I don't work for them. I don't
10 volunteer for them. I'm just a regular
11 person who's been following this. Nobody
12 wants to hear her option, which would give
13 us a higher pool, still pass the fish, and
14 still allow for recreation and water
15 supply.
16 MR. CAMPBELL: Sir, one minute.
17 MR. PARIN: One minute? Okay.
18 This option doesn't cost much. I
19 don't know the specifics of it, but it's a
20 modification of the rock weir design, and
21 it would work. And it will also allow us
22 to save the park and have a whitewater
23 park, should we choose to fund that in the
24 future. It doesn't mean we have to do that
25 right now, but we could keep the park and

1 not make it a floodplain bench.
2 So I just wanted to point out there's
3 a lot of information out here that a lot of
4 people aren't -- just aren't willing to go
5 dig down into or find the details about
6 this. And I understand there's going to be
7 some people that want to keep their docks
8 the way they are, but I don't think it's
9 very unfeasible to ask somebody to move
10 their dock to a river that still exists.
11 As we could see in the pictures, the
12 river didn't dry up and go anywhere. It
13 just moved a couple of feet over.
14 (Comments from the audience.)
15 MR. AMIN: I've seen the pictures,
16 y'all. It's okay. It's all right.
17 UNKNOWN SPEAKER: Dreamer.
18 UNKNOWN SPEAKER: That picture is my
19 property.
20 MR. AMIN: Yeah.
21 UNKNOWN SPEAKER: That picture is my
22 property.
23 MR. AMIN: That one?
24 UNKNOWN SPEAKER: I have 5 feet on my
25 dock. I don't have water there if this

1 happens; okay? I've invested my life
2 savings. For 15 years, I've invested my
3 life savings. I'm left with nothing.
4 That's my property. Everybody look at that
5 picture. This is my face. I own that
6 property. Explain to me why I should have
7 to move my dock out with a permanent
8 (inaudible).
9 UNKNOWN SPEAKER: Why did you build
10 in a hundred-year floodplain anyway?
11 MR. CAMPBELL: Excuse me. Ladies and
12 gentlemen. Ladies and gentlemen. Ladies
13 and gentlemen. Let's collect ourselves.
14 We know this is a passionate and emotional
15 topic. Please limit your comments to three
16 minutes; okay?
17 Next person that is up is Ashley
18 Holmes.
19 MS. HOLMES: Hey guys, I'm Ashley
20 Holmes. I was born and raised here in
21 Augusta, Georgia. Grew up fishing on the
22 Savannah River with my father. Have seen
23 an abundance of species throughout that,
24 and my interactions as an undergraduate at
25 Augusta University in ecology, this is my

1 background. I've gotten pretty muddy in
2 our area in research and in volunteer work.
3 I have thousands of hours of volunteer work
4 in our area. And that's just my
5 background.
6 My interests here are to try to unify
7 us as a community, try to engage with --
8 there are not a lot of people my age and
9 younger who are engaging on this topic
10 right now. I feel like that's a -- that's
11 a travesty because whatever we decide is --
12 30, 40, 50 years into the future, folks
13 younger than me are going to be dealing
14 with the ramifications of those decisions.
15 And so that's part of why I'm here.
16 I'm not particularly good at public
17 speaking. I don't have to do it very
18 often, so bear with me if I kind of get
19 lost in it.
20 So we need to consider options that
21 benefit our whole community. We're
22 experiencing a strong interest in
23 recreation. That is a growing -- growing
24 economic boom in our area. We have a lot
25 of kayaking companies popping up, fishing,

1 tourism, all kinds of stuff that's kind of
2 coming up in our area. We need to consider
3 that. Safe non-motorist boat passage is
4 part of that, so kayakers who would like to
5 maybe go down the full length of the river
6 from maybe up, you know, above Savannah
7 Rapids Pavilion or in there, all the way
8 down past the locks, if they want to, you
9 should be able to do that, and I think that
10 that's something that we can work into,
11 whatever option we decide.
12 I do want to touch up on, as an
13 ecologist, we have to do the fish passage
14 by law, but it's not just one species we're
15 talking about. Sturgeon is the poster
16 child for this. We have dozens more -- or
17 more of fish species to consider, bass,
18 mullet. We used to have a thriving shad
19 commercial fishery on our Savannah River
20 before we started damming it up. If you
21 guys haven't thought of that, that's
22 something we need to consider.
23 We want to push for a fish passage,
24 pool level maintenance, safe boat passage,
25 fishing access, park improvement at the

1 Lock and Dam park, maybe even whitewater.
2 These are all things that would benefit our
3 community. So I just want to make sure
4 that everyone considers all the options.

5 We don't have to settle for those two. We
6 can come together; okay? Thank you.

7 MS. SANCKEN: Thank you. I'm not
8 very good at public speaking, but I thank
9 Rick Allen, I thank South Carolina, Mayor,
10 I thank you all for our representatives. I
11 do not live on the river today. I used to
12 live on the river. I am at the River Club.

13 UNKNOWN SPEAKER: Name and address.

14 MS. SANCKEN: Joyce A. Sancken. 373
15 East Shoreline Drive.

16 This river, to keep it as high as it
17 is, is so important. We don't -- I don't
18 really care about these fish; okay? Fish
19 is one thing. People, their livelihood,
20 you know, their lives, they -- they've
21 worked all their lives to be and to own
22 this property and I don't agree with the
23 riverkeepers. Thank you.

24 MS. HANNER: Hello, I'm Susan Hanner.
25 I live at 1315 Waters Edge Drive. I do

1 live on the river, and as we were
2 discussing the drawdown with the
3 Savannah -- well, I guess he's really the
4 Corps of Engineers Representative, he gave
5 us the information that they took the boat
6 and they measured at each one of these
7 docks, and at our dock, it was 2 feet lower
8 than what they had said. Exactly what fell
9 into their plan. However, we were 6 feet
10 of dry land before we got to our dock, only
11 because we have a long catwalk.

12 So I don't feel comfortable with the
13 measurements that they've given us, but
14 regardless, if it's going to happen, it's
15 going to happen. I'll do everything I can
16 to keep it from happening.

17 The things that I think that are most
18 important is that the tourism in Augusta
19 will be significantly impacted by a
20 riverwalk that does not have an adjacent
21 river.

22 The other -- the other areas that I
23 think are important is the health issues
24 with pest control. If you take the water
25 away, we're going to have nothing but

1 mosquitos.

2 And recreation, regardless of what
3 you say, we try to put everybody in this
4 much water instead of this much water, it's
5 going to -- it will diminish.

6 I do believe that we can repair the
7 locks for navigation, not just for people
8 who live on the river, but also for people
9 maybe in Savannah, people want to come up
10 this way. I think it would be a good idea
11 to have the locks repaired and the dam
12 rehabilitated. Thank you.

13 MR. HANNER: Hi, I'm Alfred Hanner.
14 I too live at 1315 Waters Edge Drive in
15 Augusta. And for me, it's a question of
16 what's right. What solution allows
17 everything to happen?

18 With option 2-6, how does the Corps
19 of Engineers believe that the same level of
20 recreation and economic activity will be
21 maintained with almost no water running
22 down the middle of the Savannah, with
23 substantial number of docks sitting on the
24 ground, with no room to pass boats going
25 through the navigable channels.

1 The pool level is critical, critical
2 for the economic viability of downtown
3 areas, both North Augusta and Augusta, as
4 well as for the entire CSRA. River
5 activities such as the Rowing Regattas, the
6 Ironmen bring in millions of dollars into
7 our economic sear. Thus, the solution to
8 maintain the current pool is critical.
9 It's just common sense to keep the economic
10 development viable within our region.

11 Option 1.1 may be slightly more
12 expensive to build, and a big portion of
13 the cost is the O&M cost long term, so
14 we'll have to cover those later on in life.
15 But how can we trust the assessments of the
16 Corps of Engineers when they say they're
17 going to draw the river down and it's not
18 going to affect anything and those of us
19 who saw the river go, so this is nothing.
20 It was an unmitigated disaster, with
21 extensive property damage, recreational
22 damage.

23 So the question I ask is, what is the
24 solution that allows the deepening of the
25 Savannah Harbor, which is a viable economic

1 need, and maintaining our economic
 2 development within the region of Augusta
 3 and the CSRA? There has to be a solution.
 4 Both are viable, both are critical, and
 5 both need to be addressed. Thank you.
 6 MR. SYMMS: Hello. Andrew Symms,
 7 Andrew Fitz-Symms, Augusta, Georgia. Born
 8 and raised in National Hills. Currently
 9 reside at 1128 Magnolia Drive.
 10 I live, train, and fish in the
 11 Savannah River. I was a Marine from 1990
 12 to '98. I became an Ironman last year.
 13 And I'll tell you this, I had no idea --
 14 and I'm ashamed of this fact. Born and
 15 raised in National Hills right across the
 16 street from the Augusta National, of
 17 course, I am very much aware of what our
 18 number one economic impact is, the first
 19 full week in April.
 20 The second largest impact to the CSRA
 21 is Augusta Half Ironman, last year at an
 22 estimated \$4.8 million. I do not believe
 23 that Ironman will sign another contract. I
 24 believe we have two more years on the
 25 contract. 2000 -- 2020, they -- they're

1 gone.
 2 And Parin, to address your -- your
 3 level comment, the WIIN Act does actually
 4 state in black and white that the pool will
 5 be maintained at the level that the WIIN
 6 Act was signed into law, December 16th,
 7 2016. It does. It actually does. It
 8 actually does.
 9 (Comments from the audience.)
 10 MR. CAMPBELL: Ladies and gentlemen,
 11 if you can focus your comments to the
 12 public, not to each other; okay? Thank
 13 you.
 14 MR. SYMMS: And I'd like to end in --
 15 in this. We, in years past and growing up
 16 here in Augusta, we -- unfortunately, I
 17 believe we were two separate communities.
 18 We were Augusta, North Augusta, Georgia,
 19 South Carolina.
 20 I've got many friends and many family
 21 members that live across the river, and I
 22 am so very, very proud of the two
 23 communities and the fact that we have
 24 come -- been able to come together in our
 25 two governments, and I am very, very

1 pleased, and I thank y'all very, very much.
 2 MR. GREENBAUM: Ladies and gentlemen,
 3 elected officials, I too must praise the
 4 governments of North Augusta and Augusta
 5 for coming together --
 6 MR. CAMPBELL: Sir, can you give your
 7 name and address, please?
 8 MR. GREENBAUM: Oh, I'm sorry.
 9 Lowell Greenbaum, 1343 Waters Edge Drive.
 10 Gloria and I have been involved in
 11 this situation way back since 2000. At
 12 that time, we also were threatened by the
 13 Corps of Engineers, and Gloria and I
 14 organized SOS, Save Our Savannah. We had
 15 people from both South Carolina -- over a
 16 hundred people together from South Carolina
 17 and from Augusta.
 18 Gloria and I went to Washington and
 19 spoke with Charlie Norwood at the time and
 20 the current senator from South Carolina.
 21 They were impressed, especially when we
 22 held up the hundred people who had signed
 23 on the SOS petition.
 24 They went to President Clinton, who
 25 approved it, and it was sent to Congress,

1 where it died. Appropriation was not
 2 submitted to the Congress for the fix of
 3 the Lock and Dam.
 4 So what is very important is the
 5 legislation and our legislators, who we saw
 6 here today together, and who must pound on
 7 the -- on the rostrum that they have to get
 8 funds to fix the Lock and Dam from the
 9 Congress. Thank you.
 10 MR. GARDINER: Good evening, ladies
 11 and gentlemen. My name is Thomas Gardiner,
 12 2837 Tobacco Road.
 13 Now, I moved to Augusta whenever I
 14 was stationed here with the United States
 15 Marine Corps at Fort Gordon, and I stayed
 16 here. I'm not a South Carolina or an
 17 Augusta native, but I stayed here. I lived
 18 in South Carolina for a number of years and
 19 I moved across here. And I would like to
 20 address a couple of things first.
 21 Our economic viability is something
 22 that keeps coming up. And we mentioned --
 23 we heard mentioned earlier something about
 24 the -- the Ironman, the Half Ironman that
 25 comes here; right? So whenever that

1 drawdown happened, it didn't affect
2 actually any of the channels that they use.
3 Didn't affect any of them.

4 Our economic viability for folks and
5 any of our businesses along the river, they
6 don't depend on the few docks that happen
7 to be dropped down; right? Our economic
8 viability is so much more than that. It is
9 so much more than that.

10 There are options on the table other
11 than 1.1 that could help boost our economic
12 viability. It could help bring tourism and
13 help bring other dollars into the state
14 from other regions and other places all the
15 way around.

16 Now, the Army Corps of Engineers, who
17 many of you don't like, and I hate to be
18 the bearer of bad news for many of you, but
19 they posted on a post on their website this
20 week that 1.1 was no longer a viable option
21 for them. Was no longer a viable option.

22 So all of these arguments about 1.1
23 are really just blowing against the wind.
24 That is out. We need to take a look at
25 some of these other options that are on the

1 table.

2 Now, this started as a conversation
3 about whether we could start and have a
4 fish passage for endangered species. And
5 I've heard several people say they don't
6 care about fish. You don't care about some
7 fish. Well, guess what, we eat fish. We
8 need wildlife to live. We need those
9 things to sustain our own viability.

10 And if we don't do what we need to do
11 to protect what we have and what our
12 resources are, then how are we going to
13 survive and sustain ourselves; right?

14 That's -- that's a big part of it.

15 So some people here are fighting for
16 1930's technology that is designed to serve
17 1930's purposes. This community is growing
18 and it is getting younger and we are
19 bringing people here for cyber and for
20 other issues that are 21st century issues,
21 and it's time that we take a look at other
22 options and that we develop technology and
23 take advantage of the river for 21st
24 century purposes, not 1930's purposes.
25 Thank you.

1 MR. LASHER: Good evening. Thank you
2 for taking the time to hear me. I --

3 UNKNOWN SPEAKER: Name -- name and
4 address, please.

5 MR. LASHER: My name is Lawrence
6 Lasher. I'm at 746 Riverfront Drive, which
7 is Goodale Landing, which isn't on the
8 river. You've probably heard of it. And,
9 also, I am a member of the Augusta Rowing
10 Club, have been for years, so I have some
11 interest in the river.

12 Before I start, I do just want to say
13 one thing. You know, we heard about Save
14 Our Savannah. Thought that was -- I didn't
15 know about that, but almost 30 years ago,
16 there was another saying. Anybody
17 recognize that? Archibald Butt, 15th
18 Street Bridge? Well, this is ours now,
19 Raise Our River or Save Our Savannah.

20 We need to get behind our
21 legislators, our people in office that
22 can -- that can help push this forward.
23 And we, as citizens, need to -- need to be
24 involved in this.

25 I called -- is it Lauren; right?

1 She's in D.C. I called Allen's office.
2 And she listened to me for probably 30
3 minutes rambling on about different things.
4 She said it's important for us to call our
5 constituents -- I mean, the people that
6 represent us, so...

7 So I had a little something here
8 written up and it says -- it says, in our
9 previous meeting with the U.S. Corps of
10 Engineers, I talked with Colonel Daniel
11 Hibner and his related managers, engineers,
12 and specialists, and it was related to me
13 that the only way they would switch from
14 the rock weir to the dam, with a fish
15 passage, would be if there is a significant
16 human impact from the weir due to an effect
17 from one or more of the following effects
18 on the environment.

19 So, in other words, the only way
20 they're going to switch from the weir to --
21 to what we want, where we can raise our
22 water pool level, was some -- an effect on
23 the human environment, and he listed the
24 water supply, he listed the navigation, he
25 listed recreation.

1 And just me personally being involved
2 with the Augusta Rowing Association, we
3 hold the -- you know, they mentioned about
4 the triathlon. Well, ours, I think,
5 generates the fourth most amount. It's an
6 event here. We have a regatta, and that
7 comes once a year.

8 The -- if we have this drawdown, it's
9 going to narrow the passage to where if --
10 we won't be able to sufficiently or safely
11 have our regatta. We would probably have
12 to move it down river where it is wider,
13 but then the people that come to see it,
14 over thousands of people come to see it,
15 they -- they wouldn't be able to observe
16 it, so there -- that would be not adequate.

17 There's other recreation impacts,
18 kayaking along the Savannah River, the
19 powerboat races. We mentioned the
20 triathlon. These are one of those three
21 things, recreation, that are being
22 affected, and I wanted to submit that to be
23 submitted to the Corps. Thank you.

24 MAYOR DAVIS: All right. I'm going
25 to ask, before that individual comes, I

1 have a very good friend in the room, our
2 representative from across the river,
3 Representative Bill Hixon, I want to ask
4 him to come and give some comments.

5 MR. HIXON: Thank y'all. Yeah, I am
6 Bill Hixon. I have House District 83 in
7 Edgefield and Aiken County. I represent
8 all of North Augusta.

9 That was my proviso that I put in the
10 South Carolina budget, along with the rest
11 of the Aiken County delegation. I can tell
12 you, South Carolina, I'm proud of them,
13 what we're trying to do over there. We
14 have some other ideas that I will let you
15 know later, but we have some other ideas
16 that we're working on.

17 I'm proud of North Augusta and I'm
18 proud of Augusta, and it's been said
19 before, I think this is one of the greatest
20 times we had to work together, with North
21 Augusta and Augusta. And I'm proud of you,
22 Mayor Hardy and Mayor Pettit, and all of
23 the people in Aiken County and Edgefield
24 County and Richmond County and Columbia
25 County, what we're trying to do.

1 My main goal is to keep South
2 Carolina's riverfront, not South Carolina's
3 creek front, and I want to keep Augusta's
4 riverfront, not Augusta's creek front. So
5 we have some more stuff that we'll be doing
6 in South Carolina. I'm not at liberty to
7 say, but our Attorney General and our
8 Governor is dead on it.

9 And we have a meeting tomorrow with
10 some high-powered folks coming from
11 Washington, and so we will be -- we're
12 working on it in South Carolina.

13 And, Georgia, I appreciate what y'all
14 are doing, too. And thank you very much.
15 Thanks.

16 MR. BRAUN: My name is Erich Braun.
17 I live at One 7th Street, Unit Number 1203,
18 which is the pink building, as everybody
19 refers to it. My wife and I have been
20 there two years. Prior to that, we lived
21 at Waters Edge for 12 years. We're
22 transplants from Florida. We've been here
23 a total of 15 years, and I've never ever
24 had such a desire to get involved as I have
25 after hearing and reading and conflicting

1 and not knowing who to believe, what to
2 believe, looking at convenient numbers that
3 I -- I just can't trust.

4 And I'd really like to ask our
5 officials if they could get grassroots with
6 us and tell us what we can do. Can we
7 write, can we email? Sure we can. But I
8 would ask everybody in here, who has
9 emailed or written on this subject to
10 somebody in our elected officials?

11 Great. I've gotta tell you, I
12 haven't yet, but this motivates me to think
13 that we really can make a difference. And
14 guys, we thank you very much. Just lead us
15 and tell us what we need to do.

16 MR. ARNOLD: Hello. My name is Steve
17 Arnold. I live 316 Cherokee Drive, North
18 Augusta. I don't have property on the
19 river, but I do own property, I'm a
20 taxpayer, so I have an interest in it.

21 Many of y'all enjoy the river, just
22 being on the surface, fishing, swimming.
23 Mine's a little different. I'm on the
24 Richmond County Dive Team. I SCUBA dive on
25 the river for over 20 years now. I'm the

1 one that's at the bottom of the river
2 waving at y'all when you pass by. It's not
3 an alligator, it's me.

4 I get called out there to help out
5 with a lot of different things, the Ironman
6 race, the Rowing Regatta. Quite frankly,
7 I'll be very blunt, I don't give a damn
8 about the stupid fish. There's a lot of
9 others out there.

10 Also, too, whatever we need to do,
11 the river needs to stay at its full pool.
12 Yeah, the -- if we lower the river, the
13 Ironman course will still be the same, but
14 the support boats that are out there for
15 safety and security, they won't be able to
16 get out there. And this is not just a
17 little race, this is the second largest
18 Ironman race in the world, and every year,
19 it gets bigger because it's that good.

20 Same with the Rowing Regatta. The
21 passage will be smaller, so the boats that
22 are out there, like mine, for safety and
23 backup, we won't be able to get out there.
24 It'll be a narrow pool. And that's going
25 to be more millions lost every year.

1 Thing is, though, I'm at the bottom
2 of this river. I go out there
3 recreationally. I look for stuff people
4 have lost. We go digging for old bottles
5 and things, and there's a lot of things in
6 that river that y'all don't know about that
7 if we lower it down, it's going to make the
8 river even more impassable.

9 Now, something else, too. There's
10 several boat ramps out there. There's a
11 boat ramp at 5th Street Marina, Riverfront
12 Drive, the warehouse facility, Waters Edge,
13 North Augusta. Practically every boat ramp
14 is going to be unusable; okay? They're
15 going to have to be extended. Who do you
16 think's going to foot bill for that? You
17 know it's not going to be the Corps.
18 That's going to fall on taxpayers, both in
19 Georgia and Carolina.

20 Now, along with that -- excuse me --
21 when they lowered the river back in 2000,
22 it damaged the wall at Water -- at Goodale
23 Landing. At that point, the Corps said,
24 well, we gave people ample opportunity to
25 move any property that was going to be

1 damaged. Someone asked the Corps, said,
2 how are you going to move the jetty wall?
3 They said, that's your problem, not ours.

4 This last time when they lowered it,
5 they said the wall was not properly
6 designed, which is why it was damaged. I
7 can promise you any property that is
8 damaged, destroyed, or left unusable, the
9 Corps will find an excuse to not pay for
10 it. It's going to fall on everybody else.

11 So whatever we need to do, that river
12 needs to stay at the level it is. Thank
13 y'all.

14 MR. PENIX: David Penix, 724 Greene
15 Street, Apartment 1415 in the downtown.
16 I'm a Clemson graduate. I have 12 courses
17 completed to get me a designation in
18 commercial marketing, commercial real
19 estate. I come to you from that
20 perspective.

21 The annual visitor's and convention's
22 income for the year for Augusta is
23 something like \$400 million. Folks, you're
24 going to negatively impact that if you
25 don't keep the Lock and Dam. Homes --

1 homes on the river from 5th Street up to
2 the rock where you can walk across the
3 river, I'd estimate over \$100 million.
4 That's a lot of power. Maybe another 50
5 million on the -- on the Georgia side, same
6 distance. That gives it a lot of power.
7 Those people are not going to give up on
8 the river level.

9 The present Lock and Dam, you know,
10 we used to put boats in the -- in the locks
11 and lower the level and let them out the
12 bottom level. Why can't we leave the
13 bottom level docks open and set up a
14 program to attract the fish and take the
15 water level up and let them go at the
16 higher level? Save 25-, \$30 million on
17 a -- on a rock passage, period.

18 But that is a program to let the fish
19 come upstream. And an ongoing program
20 could be maintained continually to justify
21 getting rid of the -- or to justify the
22 rock weir.

23 Maybe \$150 million a year, recreation
24 use and what have you and -- and associated
25 with -- with the use of the river and its

1 attachments or its relationship to the
2 annual visitation, parts of that 400
3 million.
4 That's it, folks. I just -- I come
5 at it from a commercial market standpoint,
6 and money is very important to us, and that
7 river level up where it should be, a
8 hundred -- it's a hundred -- it's 16 feet
9 now. I went by and looked at it a little
10 while ago. Is a main item in that equation
11 of success and continued economic viability
12 for Augusta.
13 MR. WILLIFORD: Hey, y'all. I'm Josh
14 Williford. I live in -- I live at 65
15 Century Circle, Greenville, South Carolina,
16 and I've been following this for quite a
17 while as well. I'm a river user, I'm a
18 kayaker, fisherman, river guide up on the
19 Chattooga.
20 And, initially, when I heard about
21 all this, tell you the truth, I didn't care
22 much about it. I'm not a big fan of dams.
23 I actually studied them quite a bit,
24 hydrology, environmental science, that type
25 of stuff. But the more I learned about how

1 it affected people around here and how much
2 y'all care about it, I started reading more
3 about this specific structure, and I
4 definitely support the rock weir, although
5 I think that there's definitely ways to
6 make it taller so that the level could be
7 raised.
8 Like, if you look at certain
9 hydroelectric structures, they've got
10 sluiceways, where big flood comes, you can
11 let it out the gates through the bottom or
12 through the sides around the dam. So the
13 rock weir doesn't have to be several feet
14 lower to accommodate big floods. It could
15 still be at the same -- relatively the same
16 height and allow more flows to come
17 through, because, believe me, I think some
18 of y'all know the river does flood.
19 And if you study dam failures from
20 the past, pretty much all of them happen
21 because of situations where people did
22 nothing, and that was driven by greed or a
23 lack of interest, and environmentalism
24 wasn't even a part of that conversation.
25 So I definitely support fish passage.

1 The reason why you don't see them is 'cause
2 they're in danger, and we do depend on
3 them, even if we don't all know why.
4 So I support a compromise. I support
5 the City working with the Corps and
6 figuring out a way that they can make a
7 taller rock weir so that everybody can be
8 happy and move on, right, 'cause this thing
9 is definitely a bullet train headed for
10 your town. And the City is going to lose
11 money either way. Whether you do plan one
12 or plan two, it's going to lose money, but
13 at the very least, you can salvage
14 what's -- what's salvageable and do the
15 right thing. Thank you.
16 MR. STEPHENS: My name's Bucky
17 Stephens. I live at 820 Riverfront Drive.
18 Thank you, gentlemen.
19 I don't know if anybody saw what
20 actually happened when the drawdown just
21 happened. It looks like we had earthquakes
22 around our seawall. I don't think anybody
23 put that on TV. Channel 12 did.
24 But we need people to pay attention
25 to what property's being damaged, and

1 that's some serious accolades there. I
2 mean, the seawall, it was given to us, but
3 now it's hanging out 3 feet. The Corps'
4 not going to come back and fix it. What's
5 going to happen?
6 There's some serious property damage.
7 I don't believe there's been fish up the
8 river since '37, has it? I think they
9 survived quite well since then, hadn't
10 they? Thank you.
11 MR. JIMENEZ: Hello. My name is
12 Jorge Jimenez. I own 435 Telfair Street in
13 Augusta. I've been here 55 years.
14 I'm concerned about a lot of the same
15 things you're concerned, and I don't want
16 to repeat what everybody else has said, but
17 at the meeting that the Corps had, they let
18 us know that the only way that the Corps
19 could proceed meant that they were -- I
20 mean, they are obliged to choose the
21 alternative with the highest probability of
22 meeting the goal of passing the sturgeon
23 species above New Savannah Lock and Dam.
24 That is the purpose, the only purpose,
25 really, that counts.

1 Now, I -- I have some background in
2 this stuff. Since 1978, I've been working
3 in the Augusta area in the Savannah River
4 being the FERC liaison for Augusta in their
5 pursuit of a license, working in the canal,
6 and we have to do the in-stream fish. IFIM
7 is the initials. And we know that if the
8 fish come up, then they'll have a place to
9 spawn, if the surgeon come up.

10 The question, though, is, how do you
11 get that done? And the only real way to do
12 it is to get rid of the dam altogether.
13 They've been after that for 20 some years.

14 Unfortunately, that causes a lot of pain.

15 Now, it would seem that a solution
16 with the highest probability -- one minute?

17 MR. CAMPBELL: Yes, sir.

18 MR. JIMENEZ: Oh, man, that's bad.

19 A solution should necessarily have
20 succeeded somewhere. Their solution hasn't
21 succeeded anywhere. Zero fish have passed
22 that rock dam at Cape Fear. Even the
23 striped bass won't pass it. You know they
24 move pretty good, so -- and then the only
25 other thing I have to say is this, but I

1 know I'm out of time, but, you know, I'm
2 Cuban. I don't understand how the
3 Riverkeeper got standing to file a suit
4 against the Georgia Ports Authority and
5 Augusta doesn't have standing to file a
6 suit against the Corps of Engineers.

7 MR. NIXON: Well, I'm a returnee to
8 Richmond County. I've been gone for 50
9 years in -- in that city called Atlanta
10 for 46. My name's Hudson Nixon. I live at
11 2349 Williams Street in Augusta and a proud
12 member of the community since the end of
13 October.

14 And Mayor Davis, I -- and Mayor
15 Pettit, I'd like to thank y'all for your
16 interest in helping save the Lock and Dam.

17 I'm a financial person by background,
18 and I looked at the -- I've been told, for
19 all the family members that are interested
20 in what's going on here today, that the
21 estimates have sort of gone all over the
22 board for repairing the dam -- I mean,
23 the -- well, the Lock and Dam and possibly
24 making a fish ladder out of part of it.
25 And I recall something like a \$60 million

1 number and now I see a \$380 million number.

2 Mayor, when was this building that
3 we're in right now built, around late '50s,
4 early '60s?

5 MAYOR DAVIS: Around '68.

6 MR. NIXON: Did they -- when they
7 budgeted to build this building, did they
8 allocate the money, you think, for how much
9 was spent on redoing this building
10 recently? About 70?

11 MAYOR DAVIS: No. About 32.

12 MR. NIXON: 32? Okay.

13 Back in 1960, if you'd put \$32
14 million on the game plan for, what, 60
15 years, you wouldn't have built this
16 building. So I don't know where the
17 rationale is coming from.

18 I have heard a lot of people talk
19 about recreation, aesthetics, and so forth.
20 The one thing -- and I understand you can't
21 just have the government pay for repair and
22 replacement of things. You can do it for
23 the fish, but you can't do it for the
24 people.

25 And you -- you also -- but if

1 something that is for the people is
2 supposedly -- well, what about a flood?
3 And just 'cause we have Clark Hill doesn't
4 mean you can -- what about the development
5 of the waterfront of -- oh, both sides of
6 the river.

7 Anyway, I just -- I'm a concerned
8 citizen and I just wanted to say my peace.
9 Thank you.

10 MR. SCHAEFER: Thank you, Mayor
11 Davis, for this opportunity. Good evening,
12 everybody. I'm Keith Schaefer. I live at
13 712 Riverfront Drive. I represent 48
14 owners and the board of directors of the
15 Goodale Landing Homeowners Association. We
16 have personal experience with the Corps, as
17 is in our pocketbooks.

18 We have owners that have had to spend
19 upwards of \$10,000 on their homes to have
20 the cracks that were done from the last
21 drawdown repaired. Some of them still
22 haven't been repaired.

23 We object to everything the Corps is
24 doing with this. They don't want the Lock
25 and Dam. That's been very clear. We'd

1 like it replaced or rebuilt. We'd like the
2 lock working. We'd like a fish lift or a
3 fish ladder. They can make all this happen
4 if they choose to, but they chose not to
5 because they don't like the Lock and Dam.
6 They don't want to be bothered by it.
7 We'd like it because they can use it
8 for flood control. They've admitted they
9 use it for flood control now. Their rock
10 pile that they want to put across the river
11 does not provide for flood control. It
12 also takes a huge section of the New
13 Savannah Bluff Lock and Dam park, which is
14 a beautiful park, needs to be improved.
15 We're in favor of maximizing the City
16 of Augusta's opportunity at the Lock and
17 Dam, whether it's rebuilt, replaced, but we
18 need flood control, we need fish migration,
19 and there are lots of ways. The Corps is
20 aware of them. They've only chosen one.
21 There are many more other than that. We
22 are hopeful that we could have power
23 generation from that dam. It's set up
24 right now for power generation.
25 The Corps has in their plans

1 apparently, as the last speaker said, added
2 the cost of replacing the dam in 50 years
3 to their figures. Well, if that's true,
4 I'm very nervous about Thurmond. I mean,
5 that's coming up on 50 now. Are they going
6 to replace that? So if it's not good for
7 50 years, we're in kind of a problem with
8 the Corps.
9 So Goodale Landing owners who have
10 had to personally pay for the Corps'
11 irresponsible drawdown of the river back 15
12 years ago, we don't want to see it happen
13 again. We want the pool raised, and we'd
14 like the Corps to do what this community
15 would like to see done, which is maximize
16 our beautiful riverfront. Thank you very
17 much.
18 MR. GRIFFIN: I'm Griff Griffin. I
19 live it Riverwood Manor on Greene Street.
20 I'm your former National Guard Combat
21 Engineer Nominee of the Year. I'm your
22 current crime stopper who set a record of
23 lowering crime from 2010 to 2015. I
24 recommend you conveying grand juries to
25 look into this matter because of all the

1 tax money that is being used that looks
2 very much like a bribe.
3 I sit on the river all the time, and
4 we have seen seismic activity break out
5 each time we dropped our river. The last
6 time we dropped our river, a fire truck
7 fell into a sinkhole, a Harley fell into a
8 sinkhole, a lady in a car fell into a
9 sinkhole. You're going to suffer sinkholes
10 all through your city. Some of your
11 building foundations are going to split.
12 You are going to have chasms open all over
13 your city.
14 Right now, you have a water table.
15 If you want to see your work table, go to
16 the river, look at the river. That's your
17 water table. That water table goes out in
18 a straight line -- right, Tom -- all the
19 way from here to Hephzibah, all the way up
20 through the region, everywhere.
21 When we drop our water table, we drop
22 the hydraulic supports that are in the
23 chambers below the ground, and those
24 chambers will fall in again.
25 We can use locks right now. For 80

1 years, the locks have passed all of the
2 up-river migratory fish that I'm aware of.
3 And the Coast Guard, other people have
4 studied these migratory fish, and they have
5 been documented as coming through the Lock
6 and Dam.
7 Let's use the Lock and Dam. There's
8 a washout down river in a down river wall.
9 You give me my National Guard unit back
10 with my equipment and I'll have you fixed
11 up so fast your head will swim.
12 I'm a National Guard combat engineer
13 and I'm here to make it happen; okay? Use
14 the locks. The fish will spawn. SHEP will
15 finish. Bring billions many years earlier,
16 this is a no-brainer. Thank you for your
17 time.
18 MS. WILHELMI: My name is Marcie
19 Wilhelmi and I live at 2928 Bransford Road
20 in Augusta, nowhere near the river. My
21 perspective is as so many others are here
22 different than others. I have worked on
23 economic development, different projects
24 around our city for four decades. I can
25 assure you everything was focused around

1 our river.
2 And so we now have two amphitheatres
3 between two cities. We have two states
4 working together. What a novel idea. And
5 while I'm not as up on the particulars, I
6 happen -- I know Mr. Robertson leading the
7 charge will do a fine job, Mr. Wiedmeier
8 and all the others involved.

9 I think I agree with the speaker that
10 said first order of business is call and
11 call and call and call, two state senators,
12 your local representatives, both sides of
13 the river, the two mayors, and anybody else
14 you can think of. It's worth an hour and a
15 half of your lifespan, because we have got
16 hundreds of millions of dollars, and future
17 generations just discovering this river for
18 the first time.

19 It is a crime to think we have a
20 bunch of bureaucrats and not unforeseen
21 fish knocking us out of the saddle.
22 Clearly, Washington has lost their damn
23 mind. And the day when bureaucrats can't
24 listen to Congressman, the only way that's
25 ever going to change is if people will get

1 serious about it, start blasting them out
2 of their socks.

3 It's worked before. I remember when
4 Doug Barnard went to have the locks -- the
5 pieces in the levy so that we could develop
6 Riverwalk. That's 40 years ago, 35 for
7 sure. But it took a hell of a lot of
8 people hammering on them.

9 And so for all of you sitting here,
10 for all future generations, if you give a
11 damn about kids, you want to keep them
12 home, if we want to see everything this
13 community is pouring into cyber, we need to
14 preserve our river. So everybody, knock
15 them dead.

16 MR. CAMPBELL: Ladies and gentlemen,
17 the sign-up list is now closed. Next will
18 be Stephen Schroeder.

19 MS. BALL: Hello, everyone. Thank
20 you for your time today. Representatives,
21 thank you both so much for your time.
22 My name is Melinda Ball and I live at 165
23 River North Drive.

24 My reason for coming tonight is
25 because I am concerned about our river and

1 we need to save our river park -- river
2 pool. My concern is for my family sitting
3 right over there, my daughter Melanie and
4 my husband Landon Ball.

5 Melanie is my reason for being here.
6 I'm concerned for her and for her future.
7 And for her future, we need to have a
8 river, we need to have a river pool,
9 because our cities depend on it.

10 I am a meteorologist. I can predict
11 the weather. We cannot make the weather,
12 but I can tell you that if we put this rock
13 weir in, we are not going to have any way
14 of controlling our river level.

15 I have sat and watched it pour down
16 rain, and I have sat and watched that river
17 rise because of all the -- more rainfall
18 that has fall across the -- fallen, excuse
19 me, across the region, and we need some way
20 of controlling our floodplain and
21 controlling our river levels. And that is
22 one of the reasons why we have a dam there
23 in the first place.

24 So damn those damn fish. Forget the
25 fish. God put us humans at the top of the

1 food chain for a reason, and there is no
2 reason why we should put the fish above our
3 needs. Thank you very much.

4 MR. CAMPBELL: We have two more names
5 remaining.

6 MR. SCHROEDER: Good evening. My
7 name's Steve Schroeder. I live at 75
8 Alberclaus Drive right there on the river.
9 So I just recently moved down to the river
10 and one of the reasons, 'cause it's very
11 beautiful.

12 And there's several comments that
13 have been said, and I'm trying not to
14 repeat any of them, but, you know, even if
15 the Corps of Engineers decides to
16 compensate for damages or for lost property
17 value, let's just say they do, who cares?
18 We want to live down on the river and we
19 come there for the view, not to see a
20 stream; okay?

21 And the gentleman right there, I do
22 not understand why they just can't raise
23 the elevation of this new damn. Why does
24 it have to drop the water? And on top of
25 that, property value. Property value will

1 drop. And what does that mean? Tax base
2 goes down. There will be less taxes going
3 into Augusta, less taxes going in North
4 Augusta. And we have to look at that cost;
5 okay? It goes beyond just all the damages
6 and everything else.
7 Flood control, I mean, what do we do
8 for flood control then? It's kind of like
9 when you get the economy going and you --
10 and keep on dropping the -- the interest
11 rates, you can only drop them so far. And
12 if that economy crashes on you, then you
13 have nothing to do. So that's the same
14 thing with this new dam proposal.
15 And then the last thing is is the
16 website with the Corps of Engineers. I
17 read that plan. A third grader could have
18 came up with a better plan than that. It's
19 like, here's a Google map, here's the
20 old -- the current dam, and we're going to
21 put a new dam there.
22 They have no detail what it looks
23 like, what the flow is going to be. I am
24 completely clueless of what they're going
25 to do. And if they didn't -- if they were

1 more upfront and more clear what they want
2 to do, I think there would be a little bit
3 less resistance, maybe a little bit more
4 input from the public, but they've kind of
5 done it to themselves. Thank you.
6 MR. DONOHUE: I'm Steve Donohue. I
7 live at 316 East Shoreline Drive, North
8 Augusta. Excuse me. Thank you, Mayor
9 Davis, for putting this on.
10 Who's missing here? They're not
11 here. Almost feel like we're spinning our
12 wheels, although I appreciate what the
13 Mayor did.
14 Colonel Hibner, don't come back here
15 again unless you're willing to listen to
16 all of us. Don't come back.
17 In my prior life, I used to be a
18 lobbyist, I hate to admit it, and I know
19 how the sausage is made, so here's how the
20 fix went in. The Corps of Engineers for a
21 long time doesn't want that Bluff and Dam,
22 they don't want it, and they didn't want to
23 repair it, so they had an opportunity to
24 kill two birds with one stone.
25 They want to deepen the Savannah

1 Harbor. I got an idea. Let's justify it
2 on bringing the sturgeon up 180 miles back
3 to Augusta and we'll rip down the dam so we
4 can make a fish passage.
5 I want you to think about it. If you
6 were concerned about sturgeon -- I am, by
7 the way. I'm concerned about it. I guess
8 it's endangered. Would you make them swim
9 180 -- I don't care if they were here 80
10 years ago. By the way, most of them have
11 died. They don't remember where they were
12 born. Would you bring them 180 miles,
13 alligators, birds of prey, and all the
14 other things, looking for the rope?
15 You know, think about it, being a
16 male sturgeon. It's about time to spawn.
17 Hey, honey, you want to go 180 miles?
18 There's about 10 miles up the river and
19 would work pretty good for me.
20 Think about that. If you're
21 concerned about the sturgeon, put them at
22 less risk. Come up 10 miles, 15 miles.
23 That's A.
24 B, Augusta, Georgia, is the second
25 largest city in Georgia, and they're making

1 the deepening of the Savannah Harbor --
2 they're putting it on the backs of
3 everybody in this room and people in North
4 Augusta.
5 And I'm calling on Senator Isakson,
6 Senator Perdue, Lindsay Graham, Tim
7 Scott, Joe Wilson, who was here earlier.
8 The law got by y'all. Corps put the fix
9 in, 'cause now they say, that's what the
10 law requires. You know, the fix is in.
11 You know, how do you want to die?
12 You want poison, a noose, a gun? The
13 premise is, oh, do I have to die? So the
14 premise is wrong. They put it into the law
15 and now they stand before you and say,
16 that's what the law requires, that it all
17 happened right here.
18 It's wrong and the only thing they're
19 going to listen to is a lawsuit; okay? The
20 riverkeeper filed one, they settled it for
21 \$99 million, to oxygenate the harbor in
22 Savannah. \$99 million would've gone a long
23 way up here; okay? That money is probably
24 now exhausted.
25 The only thing they're going to

1 listen to is a lawsuit. You're going to
2 have to sue them for violating the National
3 Environmental Policy Act or something else.
4 They're not going to listen to anybody else
5 unless you file a lawsuit, like the
6 riverkeeper did. They got their 99
7 million. We should get ours. Thank you
8 very much.

9 MR. CAMPBELL: Ladies and gentlemen,
10 we'll have closing remarks by Ms. Janice
11 Jackson, our City Administrator.

12 MS. JACKSON: Just briefly, we just
13 want to thank everyone for coming out,
14 particularly those of you who have stayed
15 for the entire time to listen to the
16 comments of your neighbors. We also
17 appreciate, obviously, the opportunity to
18 exercise our right to free speech. So we
19 appreciate all of you being here.

20 There are a couple of next steps that
21 we want to make you aware of. First, we
22 have engaged a technical team comprised of
23 Tom Wiedmeier, our utilities director, who
24 you heard from earlier; Tom Robertson,
25 local engineer who you also heard from

1 earlier; as well as a firm that specializes
2 in water resources management. That team
3 will advise our elected officials in terms
4 of what the possibilities are for us in our
5 next steps. We expect to have their report
6 back on April 10th.

7 The end of the comment period, as was
8 referenced earlier, for the Corps of
9 Engineers is April 16th, so we'll have our
10 comments -- our technical team will have
11 comments prepared for submission during
12 that period as well.

13 With that, I think we are closing
14 out. If there's anything else you all
15 would like to say, we appreciate again
16 hearing from you, and we'll continue to try
17 to represent your interests as best we can.

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[Meeting concluded at 7:00 p.m.]

1 C E R T I F I C A T E

2
3 E OF GEORGIA:
4 TY OF RICHMOND:

5
6 I hereby certify that the foregoing
7 proceedings were taken down, as stated in
8 the caption, and reduced to typewriting under
9 my direction, and that the foregoing pages 1
10 through 86 represent a true, complete,
11 and correct transcript of said proceedings.

12 This, the 9th day of April, 2019.

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BRITTANY N. DRAPER, CCR, CVR

	abundance (1) 42:23	73:8	12,18,19;76:1;77:8;78:9, 10;79:17;81:5;82:16; 83:13;84:16;85:19;86:14	ample (1) 62:24
\$	access (1) 44:25	adoption (1) 28:1		An (32) 4:21;5:21;12:8,18; 14:5;21:14;22:17;23:14; 24:21;26:6,16;31:12; 35:4;38:23;42:23,24; 44:12;46:20;48:20;49:12, 21;52:16;56:16,22;57:5; 60:20;61:3;63:9;64:19; 77:14;82:23;83:1
\$10,000 (1) 72:19	accolades (1) 68:1	advantage (1) 54:23	Allen (6) 4:7;9:11;10:8,9;12:25; 45:9	
\$100 (1) 64:3	accommodate (1) 66:14	adverse (1) 21:14	Allen's (2) 32:13;56:1	
\$105 (1) 7:3	accompany (1) 19:5	advertised (1) 24:2	alligator (1) 61:3	
\$150 (1) 64:23	According (3) 10:25;36:18;37:9	advise (1) 86:3	alligators (1) 83:13	analysis (2) 21:16;22:6
\$275,000 (1) 30:10	account (1) 21:12	advocate (1) 25:16	allocate (1) 71:8	and (506) 2:7,8,9,12,15,23,25; 3:17;4:6,11,16,19;5:5,6, 13,13,20,22;6:1,9,17,18, 25;7:1,6,20,21,23;8:3,10, 13,16,18;9:2,3,5,8,10,12, 13,13,16,19,19,20,21,21, 23,24,25;10:1,5,6,9,10, 11,12,13,14,17;11:3,4,12; 12:1,3,11,15,17,18,22; 13:2,3,7,9,9,10,12,17,17, 19,22,23,24;14:7,9,12,13, 13,16,22,23,25;15:2,6,8, 11,17,18,20,23,25;16:5,7, 14,15,19,22;17:5,9,12,18, 21;18:4,8,15,15,16,17,20, 21;19:3,7,12,16,20,21; 20:3,7,7,21;21:13,20,23; 22:2,9,11,13,15,19,25; 23:1,4,9,11,12,15,15,23, 25;24:15,16,18,25;25:1,4, 10,15,16,19,24;26:7,21, 24;27:4,5,6,10,12,13,20; 28:4,5,10,13,15,17,20,22; 29:5,6,18;30:1,6,9,17,21; 31:7,9,25;32:3,3,10,13, 18;33:1,3,4,5,5,8,13,13, 14;34:1,1,4,5,9,17,19,20, 21,23;35:3,5,7,10,12,13, 19,23,25;36:4,6,11,12,18, 20,22,23;37:6,11,13,18, 22,23;38:1,6,11,18;39:9, 13,13,16,16,22,23;40:5, 13,14,20,21,22,25;41:6, 12;42:11,12,13,14,20,24; 43:2,4,8,15;44:9;45:1,13, 21,22;46:1,6,7;47:2,11, 15,20;48:3,12,17,18;49:1, 3,4,8,10,13,14,14;50:2,4, 10,14,15,20,21,23,25; 51:1,2,4,7,10,13,13,17,18, 18,19,25;52:3,5,6,8,11, 15,18,19,22;53:4,12,14, 17;54:3,4,10,11,13,18,18, 19,21,22,22;55:3,8,23; 56:2,8,11,12,12,23;57:1, 6,22;58:4,7,17,18,21,21, 22,22,23,24,24;59:3,7,9, 11,13,14,19,23,25,25; 60:1,4,6,13,15;61:15,16,
\$30 (1) 64:16	accurate (2) 38:14,24	advocated (1) 5:19	allow (5) 19:2;37:23;40:14,21; 66:16	
\$32 (1) 71:13	accurately (1) 31:11	advocating (2) 5:21;6:4	allowed (1) 30:1	
\$380 (2) 6:23;71:1	acknowledged (1) 20:9	aesthetic (1) 28:5	allows (2) 47:16;48:24	
\$4.8 (1) 49:22	across (9) 20:8;49:15;50:21; 52:19;58:2;64:2;73:10; 79:18,19	aesthetics (1) 71:19	almost (3) 47:21;55:15;82:11	
\$400 (1) 63:23	Act (19) 7:18;8:13;9:2;10:20, 21;11:13,20;24:14,17; 27:17,23;35:2;36:13; 38:13,15,24;50:3,6;85:3	affect (3) 48:18;53:1,3	along (10) 18:6;19:3;20:10;28:4, 7;29:7;53:5;57:18;58:10; 62:20	
\$45,000 (1) 6:14	activity (2) 28:22;48:5	affected (2) 57:22;66:1	already (3) 2:21;12:7;27:7	
\$60 (1) 70:25	activity (2) 47:20;75:4	after (4) 30:11,11;59:25;69:13	also (18) 2:24;3:19;4:2;10:12; 11:16;12:25;25:15;32:2; 34:14;40:21;47:8;51:12; 55:9;61:10;71:25;73:12; 85:16,25	
\$61 (1) 6:8	actually (9) 5:22;9:1;10:15;50:3,7, 8;53:2;65:23;67:20	afternoon (2) 25:2;29:4	alternatives (8) 4:25;6:3;7:17,24;8:5,6, 7,10	
\$8 (1) 30:11	add (1) 22:22	against (4) 40:7;53:23;70:4,6	Alternative (16) 4:23;5:21,23;6:8,10,14; 7:2,22;18:25;19:5;22:17, 20,21;24:3;39:13;68:21	
\$950,000 (1) 6:12	added (1) 74:1	age (2) 36:7;43:8	alternatives (8) 4:25;6:3;7:17,24;8:5,6, 7,10	
\$99 (2) 84:21,22	addition (2) 4:2;32:16	agencies (1) 17:1	Although (3) 35:17;66:4;82:12	
[additional (2) 12:8;35:4	ago (7) 9:19;27:5;55:15;65:10; 74:12;78:6;83:10	altogether (1) 69:12	
[Meeting (1) 86:19	address (10) 22:3,6;32:4,10,12; 45:13;50:2;51:7;52:20; 55:4	agree (2) 45:22;77:9	am (15) 14:1;23:14,19;25:7; 32:25;45:12;49:17;50:22, 25;55:9;58:5;78:25; 79:10;81:23;83:6	
A	addressed (1) 49:5	ahead (1) 16:10	amazing (1) 12:18	
able (8) 25:8;31:10;44:9;50:24; 57:10,15;61:15,23	addressing (1) 38:7	Aiken (17) 3:22,24;12:1;25:4,8,13; 26:12,19,22;27:9,20; 28:23;29:2;37:22;58:7, 11,23	amends (1) 22:13	
about (51) 5:8,9;7:23;9:6;15:4; 16:25;23:22;24:16,17; 26:7,23;30:10;33:9,17; 41:5;44:15;45:18;52:23; 53:22;54:3,6,6;55:13,15; 56:3;57:3;61:8;62:6; 65:20,22,25;66:2,3; 68:14;71:10,11,19;72:2, 4;74:4;78:1,11,25;83:5,6, 7,15,16,18,20,21	adequate (2) 28:20;57:16	Alberclaus (1) 80:8	amenities (1) 38:2	
above (3) 44:6;68:23;80:2	adjacent (1) 46:20	Alfred (1) 47:13	AMIN (5) 38:3,4;41:15,20,23	
absent (1) 18:14	administration (1) 12:1	all (55) 2:2,13;3:1,4,24;4:9,24; 6:24;9:5;14:14;16:7,7; 17:10,11,23;21:10;23:16, 23;30:25;39:23;41:16; 44:1,7;45:2,4,10,21; 53:14,22;57:24;58:8,22; 65:21;66:20;67:3;70:19, 21;73:3;74:25;75:3,10,	amount (1) 57:5	
absolutely (1) 14:1	Administrator (1) 85:11	amphitheaters (1) 77:2		

<p>18,22,24;62:5,5,19;63:21,25;64:9,11,11,13,14,15,19,24,24,24,25;65:6,6,9,11,16,20;66:1,3,16,19,22,23;67:2,5,8,10,14,25;68:4,15,23;69:6,7,11,24;70:4,11,14,14,16,18,23,23,25;71:1,19,20,21,25;72:3,8,14,25;73:5,13,16,19;74:13;75:3,23;76:3,4,6,7,10,13,19;77:2,4,8,10,11,11,13,14,16,20,23;78:9,16,22,25;79:3,6,7,15,16,16,19,20,21;80:1,10,12,13,18,21,24;81:1,4,6,9,10,11,15,20,25;82:1,18,21,22;83:3,13,18,25;84:3,5,15,15,18;85:9;86:16</p> <p>Andrew (2) 49:6,7</p> <p>annual (3) 6:11;63:21;65:2</p> <p>another (6) 10:6;40:2,4;49:23; 55:16;64:4</p> <p>any (19) 7:13;16:4,4;20:5;24:5; 27:23;28:2,14;29:25; 35:16;38:16,25;53:2,3,5; 62:25;63:7;79:13;80:14</p> <p>anybody (6) 12:20;55:16;67:19,22; 77:13;85:4</p> <p>anymore (1) 8:17</p> <p>anyone (4) 3:7;11:23;12:2;19:25</p> <p>anything (3) 33:9;48:18;86:14</p> <p>anyway (2) 42:10;72:7</p> <p>anywhere (2) 41:12;69:21</p> <p>Apartment (1) 63:15</p> <p>apparently (1) 74:1</p> <p>appreciate (7) 2:15,17;59:13;82:12; 85:17,19;86:15</p> <p>appropriate (1) 20:1</p> <p>Appropriation (1) 52:1</p> <p>approved (2) 11:17;51:25</p> <p>approximately (1) 26:2</p> <p>April (6) 12:9;14:25;16:3;49:19; 86:6,9</p> <p>Archibald (1)</p>	<p>55:17</p> <p>architecture (1) 37:13</p> <p>archival (1) 35:6</p> <p>are (66) 2:10,13;3:5,24;4:2; 5:20;7:15;8:6,7;9:6; 12:12,22;17:9,15;20:6; 22:23;23:1,1,2,17;25:1; 28:16;36:15,17;38:18,19; 40:1,41;8;43:6,8,9,13; 45:2;46:17,23;49:4,4; 53:10,23,25;54:12,12,15, 18,20;57:20,21;59:14; 61:14,22;63:2;64:7; 68:20;70:19;73:19,21,22; 74:5;75:11,12,22;76:21; 79:13;85:20;86:4,13</p> <p>area (8) 22:4;29:14;35:18;43:2, 4,24;44:2;69:3</p> <p>area's (1) 20:25</p> <p>areas (2) 46:22;48:3</p> <p>aren't (2) 39:25;41:4</p> <p>aren't (1) 41:4</p> <p>arguments (1) 53:22</p> <p>Armed (1) 13:2</p> <p>Army (11) 13:5,16;18:21;19:6,10; 21:25;37:15;38:11;39:7, 25;53:16</p> <p>ARNOLD (2) 60:16,17</p> <p>around (10) 4:16;30:20;53:15;66:1, 12;67:22;71:3,5;76:24,25</p> <p>arrived (2) 5:2;6:5</p> <p>artistic (1) 37:5</p> <p>as (59) 3:23,23;4:7;5:2,22,22; 11:7;14:2;16:24;18:5,25; 20:7,17,17,19;21:1; 22:20,22;23:19;29:24; 30:3,3;33:5,13,20;34:10, 10;35:7,7;37:12,12,14, 14;38:23;41:11;42:24; 43:7;44:12;45:16,16; 46:1;48:3,4,5;54:2;55:23; 59:18,24;65:17;72:16; 74:1;76:5,21;77:5;86:1,1, 7,12,17</p> <p>ashamed (1) 49:14</p> <p>Ashley (2)</p>	<p>42:17,19</p> <p>ask (6) 41:9;48:23;57:25;58:3; 60:4,8</p> <p>asked (2) 13:23;63:1</p> <p>asking (1) 21:20</p> <p>Assembly (1) 28:11</p> <p>assess (1) 35:18</p> <p>assessment (1) 35:4</p> <p>assessments (3) 35:8,10;48:15</p> <p>asset (1) 9:21</p> <p>assets (3) 2:15,16;21:8</p> <p>assisting (2) 12:2;28:14</p> <p>associated (4) 2:14;36:15;37:14; 64:24</p> <p>Associates (1) 35:3</p> <p>association (3) 36:21;57:2;72:15</p> <p>assure (1) 76:25</p> <p>assured (2) 15:7;19:6</p> <p>assuring (1) 20:11</p> <p>astronomically (1) 22:23</p> <p>at (89) 2:6,19;5:2,12;6:5,5,6,8; 11:2,4,25,25;12:10;15:8; 16:18;22:10;23:10,16,18; 26:2,11,13;27:25,25; 28:6;29:23;31:6;33:4; 34:13,15;36:4;38:4,13; 39:10;42:4,24;43:16; 44:25;45:8,12,25;46:6,7; 47:14;49:9,21;50:5; 51:11,19;52:15;53:24; 54:21;55:6;59:6,17,21; 60:2;61:1,2,11;62:1,11, 22,22,23;63:12;64:15; 65:5,9,14;66:8,15;67:13, 17;68:17;69:22;70:10,18; 72:12;73:16;75:16; 76:19;78:22;79:25;80:7; 81:4;82:7;83:21;86:19</p> <p>Atlanta (1) 70:9</p> <p>Atlantic (1) 36:24</p> <p>attachments (1) 65:1</p> <p>attendance (1)</p>	<p>3:25</p> <p>attended (1) 2:23</p> <p>attention (2) 12:14;67:24</p> <p>attorney (2) 17:12;59:7</p> <p>attract (1) 64:14</p> <p>audience (2) 41:14;50:9</p> <p>Augusta (77) 3:9,22;4:7,13;5:20,20; 18:1,19;19:7,7,13,14,20; 20:14,15;21:3,6,11; 22:15;23:6,20;24:25,25; 25:15;27:6,6,13,14;29:6, 8;32:12;33:2;34:14,15; 35:25;36:1;42:21,25; 46:18;47:15;48:3,3;49:2, 7,16,21;50:16,18,18;51:4, 4,17;52:13,17;55:9;57:2; 58:8,17,18,21,21;60:18; 62:13;63:22;65:12; 68:13;69:3,4;70:5,11; 76:20;81:3,4;82:8;83:3, 24;84:4</p> <p>Augusta's (8) 6:7;21:2;22:2;28:7,9; 59:3,4;73:16</p> <p>Authority (2) 18:17;70:4</p> <p>available (1) 11:23</p> <p>avenue (1) 22:13</p> <p>average (1) 33:4</p> <p>aware (6) 18:19;21:25;49:17; 73:20;76:2;85:21</p> <p>away (2) 20:17;46:25</p>	<p>81:1</p> <p>basically (1) 13:19</p> <p>basin (1) 21:9</p> <p>basis (1) 6:19</p> <p>bass (2) 44:17;69:23</p> <p>bathing (1) 20:21</p> <p>be (83) 4:25;5:9;6:13;8:2;9:10, 22;10:14;11:4,14,17; 12:13,20;13:11,22;14:20, 23,23;15:7,18;18:4;19:8; 23:22,24;24:5;25:7;27:1; 29:9,13,25;30:7;31:8,10; 32:1;33:3,5;34:8;36:4; 38:22;41:6;43:13;44:9; 45:21;46:19;47:10,20; 48:11;49:3,5;50:5;53:7, 17;55:23;56:15;57:10,15, 16,22;59:5,11;61:7,13,15, 21,23,24,25;62:14,15,17, 25;64:20;65:7;66:6,13, 15;67:7;73:6,14;78:18; 81:2,23;82:2,17</p> <p>bear (1) 43:18</p> <p>bearer (1) 53:18</p> <p>beautiful (3) 73:14;74:16;80:11</p> <p>became (2) 26:14;49:12</p> <p>because (18) 11:13;12:5;15:4;16:25; 36:20;37:11;43:11; 46:11;61:19;66:17,21; 73:5,7;74:25;77:15; 78:25;79:9,17</p> <p>become (1) 28:8</p> <p>becoming (1) 23:15</p> <p>been (41) 2:4,14;3:2;4:21;7:9; 11:7;13:2,11,20;14:7,8, 10;18:13,24;23:2,3,8; 25:15;26:22;30:3;35:22; 38:8,9;40:11;50:24; 51:10;55:10;58:18;59:19, 22;65:16;68:7,13;69:2, 13;70:8,18;72:22,25; 76:5;80:13</p> <p>before (16) 3:3;7:17;8:4,7;24:4; 31:3,20;39:1;40:6;44:20; 46:10;55:12;57:25; 58:19;78:3;84:15</p> <p>behind (2) 15:2;55:20</p>
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<p>being (20) 2:17;4:4,9;17:16,20; 18:7;24:14;25:8;26:19; 38:13;40:2;57:1,21; 60:22;67:25;69:4;75:1; 79:5;83:15;85:19</p> <p>believe (13) 11:12,16;16:19;19:25; 47:6,19;49:22,24;50:17; 60:1,2;66:17;68:7</p> <p>below (1) 75:23</p> <p>Ben (1) 3:14</p> <p>bench (5) 5:3,8,9;18:24;41:1</p> <p>benefit (2) 43:21;45:2</p> <p>benefits (1) 30:21</p> <p>best (4) 17:9;23:10;27:23; 86:17</p> <p>better (2) 14:17;81:18</p> <p>between (5) 11:3;26:1;36:23;37:21; 77:3</p> <p>beyond (1) 81:5</p> <p>big (5) 48:12;54:14;65:22; 66:10,14</p> <p>bigger (1) 61:19</p> <p>biggest (1) 17:2</p> <p>Bill (6) 3:17;15:3;26:20;58:3, 6;62:16</p> <p>billions (1) 76:15</p> <p>bipartisan (1) 12:17</p> <p>birds (2) 82:24;83:13</p> <p>bistate (1) 12:16</p> <p>bit (3) 65:23;82:2,3</p> <p>black (1) 50:4</p> <p>blasting (1) 78:1</p> <p>bless (1) 12:23</p> <p>blowing (1) 53:23</p> <p>blue (1) 33:20</p> <p>Bluff (13) 18:20;25:23;26:24; 28:15;33:3;34:17;35:13;</p>	<p>36:6,19;37:10,17;73:13; 82:21</p> <p>blunt (1) 61:7</p> <p>board (3) 12:3;70:22;72:14</p> <p>boat (7) 24:9;44:3,24;46:5; 62:10,11,13</p> <p>boating (1) 32:18</p> <p>boats (4) 47:24;61:14,21;64:10</p> <p>Bob (1) 3:21</p> <p>Bobby (1) 3:15</p> <p>body (1) 39:1</p> <p>boom (1) 43:24</p> <p>boost (1) 53:11</p> <p>born (4) 42:20;49:7,14;83:12</p> <p>both (20) 5:19;6:3,5,17;7:9;8:20; 14:8;34:19,23;39:10,20; 48:3;49:4,4,5;51:15; 62:18;72:5;77:12;78:21</p> <p>bothered (1) 73:6</p> <p>bottles (1) 62:4</p> <p>bottom (6) 16:9;61:1;62:1;64:12, 13;66:11</p> <p>Bransford (1) 76:19</p> <p>BRAUN (2) 59:16,16</p> <p>break (1) 75:4</p> <p>bribe (1) 75:2</p> <p>bridge (2) 11:2;55:18</p> <p>brief (1) 9:7</p> <p>briefly (2) 31:1;85:12</p> <p>bring (5) 48:6;53:12,13;76:15; 83:12</p> <p>bringing (2) 54:19;83:2</p> <p>broad (1) 36:17</p> <p>Brockington (2) 35:3,17</p> <p>brought (1) 12:4</p> <p>Bucky (1)</p>	<p>67:16</p> <p>budget (1) 58:10</p> <p>budgetary (1) 28:12</p> <p>budgeted (1) 71:7</p> <p>build (7) 4:15;5:24;6:1;7:22; 42:9;48:12;71:7</p> <p>building (7) 12:1;59:18;71:2,7,9,16; 75:11</p> <p>buildings (1) 36:3</p> <p>built (2) 71:3,15</p> <p>bullet (1) 67:9</p> <p>bunch (2) 38:9;77:20</p> <p>Bunker (4) 3:23;9:12;25:2,3</p> <p>bureaucrats (2) 77:20,23</p> <p>business (2) 17:2;77:10</p> <p>businesses (1) 53:5</p> <p>but (58) 6:21;7:14;11:8,10,20; 12:21;14:15,17;15:5; 16:9;17:15;22:12,18; 23:17;24:24;26:16; 31:25;32:8;34:1;39:8,10; 40:2,5,19,25;41:8;44:14; 45:8;46:13,25;47:8; 48:15;52:17;53:18; 55:15;57:13;58:15;59:7; 60:7,12,19;61:13;64:18; 65:25;67:12,24;68:2,16; 69:25;70:1;71:23,25; 73:4,17;78:7;79:12; 80:14;82:4</p> <p>Butt (1) 55:17</p> <p>by (39) 4:11,23;5:1,15;6:16,25; 7:9,21;8:11;9:7,10;10:8; 12:4,5,7;15:20,24;18:7; 19:17;21:1,2;22:12;27:6; 34:24;35:21;38:6;39:19; 44:14;46:19;51:12;61:2; 65:9;66:22;70:17;73:6; 83:6,10;84:8;85:10</p>	<p>61:4;70:9</p> <p>calling (2) 21:5;84:5</p> <p>calls (1) 36:3</p> <p>came (4) 7:16;8:19;16:12;81:18</p> <p>CAMPBELL (10) 9:5;30:25;40:16;42:11; 50:10;51:6;69:17;78:16; 80:4;85:9</p> <p>can (42) 2:8,25;9:1;12:23; 16:24;23:24;31:24; 37:19;44:10;45:6;46:15; 47:6;48:15;50:11;51:6; 55:22,22;56:21;58:11; 60:6,6,7,7,13;63:7;64:2; 66:10;67:6,7,13;71:22; 72:4;73:3,7;75:25;76:24; 77:14;79:10,12;81:11; 83:4;86:17</p> <p>can't (10) 8:12,14,16,20;60:3; 64:12;71:20,23;77:23; 80:22</p> <p>canal (1) 69:5</p> <p>cannot (1) 79:11</p> <p>can't (1) 17:4</p> <p>Cape (1) 69:22</p> <p>capital (1) 6:9</p> <p>capture (1) 31:10</p> <p>car (1) 75:8</p> <p>care (6) 45:18;54:6,6;65:21; 66:2;83:9</p> <p>cares (1) 80:17</p> <p>Carolina (22) 3:21;4:5;9:16;19:14; 23:20;28:11,13;34:20; 39:20;45:9;50:19;51:15, 16,20;52:16,18;58:10,12; 59:6,12;62:19;65:15</p> <p>Carolina's (2) 59:2,2</p> <p>case (1) 6:21</p> <p>catastrophic (2) 11:9,11</p> <p>category (1) 39:11</p> <p>catwalk (1) 46:11</p> <p>cause (7) 13:25;40:6;67:1,8;</p>	<p>72:3;80:10;84:9</p> <p>causes (1) 69:14</p> <p>century (3) 54:20,24;65:15</p> <p>certain (1) 66:8</p> <p>chain (1) 80:1</p> <p>Chairman (3) 3:23;9:12;25:3</p> <p>chamber (1) 2:3</p> <p>chambers (2) 75:23,24</p> <p>change (2) 26:5;77:25</p> <p>changed (1) 6:18</p> <p>changing (1) 7:6</p> <p>Channel (1) 67:23</p> <p>channels (2) 47:25;53:2</p> <p>characteristics (1) 37:2</p> <p>charge (3) 16:21;17:6;77:7</p> <p>Charlie (1) 51:19</p> <p>chasms (1) 75:12</p> <p>Chattooga (1) 65:19</p> <p>Cherokee (1) 60:17</p> <p>child (1) 44:16</p> <p>choose (3) 40:23;68:20;73:4</p> <p>chase (1) 73:4</p> <p>chosen (1) 73:20</p> <p>Chuck (3) 3:24;25:13;29:5</p> <p>Circle (1) 65:15</p> <p>circumstance (1) 12:19</p> <p>cited (1) 27:2</p> <p>cities (8) 5:20;7:10;19:7;23:22; 24:15;27:6;77:3;79:9</p> <p>citizen (1) 72:8</p> <p>citizens (6) 12:15;17:25;19:12,20; 37:24;55:23</p> <p>City (15) 5:19;6:4;22:10,15;</p>
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<p>25:14;33:1;67:5,10;70:9; 73:15;75:10,13;76:24; 83:25;85:11 Clark (1) 72:3 Clarke (1) 3:12 clean (2) 20:10,13 clear (3) 19:14;72:25;82:1 clearly (3) 31:8,21;77:22 Clemson (1) 63:16 Clinton (1) 51:24 close (1) 22:25 closed (2) 27:2;78:17 closing (2) 85:10;86:13 Club (2) 45:12;55:10 clueless (1) 81:24 Coast (1) 76:3 collar (1) 33:20 colleague (1) 25:12 collect (1) 42:13 Colonel (2) 56:10;82:14 Columbia (2) 38:5;58:24 Combat (2) 74:20;76:12 come (26) 3:6;9:10,17;19:21; 25:9;29:14;30:16;32:2; 45:6;47:9;50:24,24; 57:13,14;58:4;63:19; 64:19;65:4;66:16;68:4; 69:8,9;80:19;82:14,16; 83:22 comes (6) 15:22;23:16;52:25; 57:7,25;66:10 comfortable (1) 46:12 coming (10) 18:4;44:2;51:5;52:22; 59:10;71:17;74:5;76:5; 78:24;85:13 comment (7) 7:10;12:9;31:3,14,21; 50:3;86:7 comments (25) 2:25;3:2;9:7;11:24;</p>	<p>12:2,5;18:5,10,16;22:25; 25:19;31:5,11,23,24; 32:8;41:14;42:15;50:9, 11;58:4;80:12;85:16; 86:10,11 commercial (4) 44:19;63:18,18;65:5 commission (1) 2:3 commissioned (1) 35:18 Commissioner (7) 3:11,12,13,14,15,16,17 commit (1) 15:24 Committee (2) 13:2,9 common (5) 14:3;17:19,23;25:11; 48:9 communities (6) 3:21;20:2;22:16;30:21; 50:17,23 community (16) 2:5,11;12:15,21;20:12; 23:1;24:15;29:10,20; 43:7,21;45:3;54:17; 70:12;74:14;78:13 companies (1) 43:25 Company (1) 32:22 compare (1) 4:24 compensate (1) 80:16 completed (4) 31:17;34:18;35:3; 63:17 completely (2) 31:5;81:24 complex (1) 20:20 components (1) 37:7 comprehensive (1) 21:4 comprised (1) 85:22 compromise (3) 22:8,9;67:4 concern (3) 2:16;27:8;79:2 concerned (9) 26:23;68:14,15;72:7; 78:25;79:6;83:6,7,21 conclude (1) 37:15 concluded (1) 86:19 conditions (4) 19:4,15;26:13;28:17 conducted (1)</p>	<p>19:1 conflicting (1) 59:25 Congress (7) 4:3;13:21;17:3,7; 51:25;52:2,9 congressional (1) 10:18 Congressman (10) 4:4,6;9:9,11,13;10:7,9; 12:25;18:2;77:24 connection (1) 36:22 Connector (1) 32:12 consequences (2) 29:12;30:17 consider (9) 5:22;31:19;33:23;34:9, 9;43:20;44:2,17,22 consideration (1) 20:5 considered (1) 4:22 considering (1) 33:23 considers (1) 45:4 consistently (1) 35:11 consolidated (1) 19:19 constituents (1) 56:5 construct (1) 7:19 constructed (1) 4:25 construction (3) 15:18,20;37:3 constructs (1) 5:5 consultant (1) 7:9 continually (1) 64:20 continue (4) 20:4;37:19,23;86:16 continued (1) 65:11 continues (1) 20:19 contract (2) 49:23,25 contribution (1) 36:16 control (9) 27:19;28:14;46:24; 73:8,9,11,18;81:7,8 controlling (3) 79:14,20,21 convenient (1) 60:2</p>	<p>convention's (1) 63:21 conversation (4) 2:5;18:14;54:2;66:24 conveying (1) 74:24 convince (2) 17:17;28:25 cooling (1) 32:23 copy (2) 25:20;35:8 Corps (61) 4:23;5:1;6:5;7:16;8:8, 25;11:18;12:6,14;13:20; 14:19;15:15;16:10,20; 17:7,17;18:16,21;19:1,6, 10,24;21:6,25;22:18; 23:21;24:4,17;29:24; 30:17;33:22;37:16; 38:11;39:7;46:4;47:18; 48:16;51:13;52:15; 53:16;56:9;57:23;62:17, 23;63:1,9;67:5;68:17,18; 70:6;72:16,23;73:19,25; 74:8,14;80:15;81:16; 82:20;84:8;86:8 Corps' (8) 5:11;6:9;11:6;22:21; 24:2;40:1;68:3;74:10 Corp's (1) 24:19 corrected (1) 22:14 correspondence (1) 16:5 cost (10) 6:12;16:14,15;33:24; 34:1;40:18;48:13,13; 74:2;81:4 costs (2) 6:9;33:24 could (19) 4:25;8:4;15:3;17:9; 20:4;22:8;40:25;41:11; 53:11,12;54:3;60:5; 64:20;66:6,14;68:19; 73:22;78:5;81:17 couldn't (1) 8:3 Council (7) 25:4,14;26:22;27:9,15, 21;29:2 Councilman (1) 3:24 counted (1) 21:12 counties (1) 37:22 country (1) 15:13 counts (1) 68:25</p>	<p>County (21) 3:23,24;25:4,8,14; 26:12,20,22;27:9,21; 28:23;29:2;38:5;58:7,11, 23,24,24,25;60:24;70:8 couple (5) 3:6;39:6;41:13;52:20; 85:20 course (4) 13:7,10;49:17;61:13 courses (1) 63:16 court (2) 2:24;31:9 cover (1) 48:14 cracks (1) 72:20 crashes (1) 81:12 create (1) 28:3 created (2) 19:22;35:21 credit (1) 10:7 Creek (3) 26:11;59:3,4 crest (1) 18:23 crime (3) 74:22,23;77:19 criteria (1) 36:3 criterion (3) 36:12,14,25 critical (6) 2:6;20:11;48:1,1,8; 49:4 CSRA (3) 48:4;49:3,20 Cuban (1) 70:2 current (9) 5:1;27:3,12;33:4;35:7; 48:8;51:20;74:22;81:20 Currently (1) 49:8 cut (1) 22:10 cyber (2) 54:19;78:13</p>
D				
<p>Dam (71) 2:12;4:16,19;5:4,5,6, 24;7:20;8:1,9;19:10,5; 13:11;14:5,22;16:15,17; 18:21,22;19:22,23;24:18; 25:17,24;26:24;27:1,11; 28:16;33:1,3,5;34:17,21; 35:6,13,19;36:6,11,20;</p>				

37:11,18;39:13,16,45:1; 47:11;52:3,8;56:14; 63:25;64:9;66:12,19; 68:23;69:12,22;70:16,22, 23;72:25;73:5,13,17,23; 74:2;76:6,7;79:22;81:14, 20,21;82:21;83:3	deepen (1) 82:25 deepened (2) 15:12;23:24 deepening (3) 15:14;48:24;84:1 Defense (1) 13:6 definitely (4) 66:4,5,25;67:9 delay (2) 15:14,23 delegation (1) 58:11 deliver (1) 20:16 delivered (3) 13:14,15,18 demonstrated (1) 19:10 Dennis (1) 3:13 Department (4) 4:13;13:6;28:13;34:25 depend (4) 19:21;53:6;67:2;79:9 depth (1) 5:12 design (3) 15:16;37:12;40:20 designation (1) 63:17 designed (2) 54:16;63:6 desire (2) 18:22;59:24 Despite (1) 21:10 destroyed (1) 63:8 destruction (1) 37:8 detail (1) 81:22 details (4) 14:14;16:4;23:15;41:5 determination (2) 36:18;37:9 determinations (1) 35:10 determined (3) 21:13;34:21;36:10 detract (1) 35:15 devastating (3) 23:22;29:13,18 devastation (1) 29:9 develop (3) 22:18;54:22;78:5 development (8) 21:23;27:7;28:10; 33:19;48:10;49:2;72:4;	76:23 did (12) 4:19;15:6;22:17;29:23; 39:9;42:9;66:21;67:23; 71:6,7;82:13;85:6 didn't (9) 4:18;26:15;34:2;41:12; 53:1,3;55:14;65:21;82:22 didn't (1) 81:25 die (2) 84:11,13 died (2) 52:1;83:11 difference (5) 6:11;12:23;24:6;30:10; 60:13 different (10) 6:19;10:11;12:20; 22:23;23:18;56:3;60:23; 61:5;76:22,23 dig (2) 5:8;41:5 digging (1) 62:4 dilemma (1) 7:10 diligence (1) 39:4 diminish (1) 47:5 dire (1) 30:23 direct (2) 18:10,15 director (4) 4:12;33:12;34:14; 85:23 directors (1) 72:14 disappointing (1) 11:18 disaster (1) 48:20 discharges (1) 21:22 discovering (1) 77:17 discrepancy (1) 26:7 discussed (2) 10:4;39:23 discussing (1) 46:2 distance (1) 64:6 distinctive (1) 37:1 distinguishable (1) 37:6 District (11) 3:11,12,13,14,16,17,18; 25:13;29:5;32:14;58:6	districts (1) 36:4 Dive (2) 60:24,24 Division (2) 20:24;34:24 DNR (2) 39:21,21 do (59) 2:18,21,22;9:1,6;10:10; 15:15;16:11,22;17:1,9, 25;25:12,18;29:3,15,21; 31:1,15;40:24;43:17; 44:9,12,13;45:11,25; 46:15;47:6;49:22;54:10, 10;55:12;58:13,25;60:6, 15,19;61:10;62:15;63:11; 67:2,11,14;69:6,10,11; 71:22,23;74:14;77:7; 80:17,21;81:7,7,13,25; 82:2;84:11,13 dock (5) 41:10,25;42:7;46:7,10 docks (6) 24:9;41:7;46:7;47:23; 53:6;64:13 documentation (1) 16:7 documented (1) 76:5 documents (1) 23:17 DOD (1) 20:20 DOE (1) 20:20 does (10) 46:20;47:18;50:3,7,7,8; 66:18;73:11;80:23;81:1 doesn't (9) 6:20;28:8;39:18;40:18, 24;66:13;70:5;72:3; 82:21 doing (5) 6:25;17:8;59:5,14; 72:24 dollars (7) 28:6;29:20;30:9,16; 48:6;53:13;77:16 don't (46) 7:13;14:14;15:11,14; 16:17,18,25;29:10;33:16; 39:7;40:9,9,19;41:8,25; 43:17;45:5,17,22;46:12; 53:6,17;54:5,6,10;60:18; 61:7;62:6;63:25;67:1,3, 19,22;68:7,15;70:2; 71:16;72:24;73:5,6; 74:12;82:14,16,22;83:9, 11 done (14) 15:16,16,17,18;17:12, 22;18:7;24:20;28:25;	39:4;69:11;72:20;74:15; 82:5 Donohue (2) 82:6,6 don't (2) 33:16;45:17 DOT (1) 16:21 Doug (1) 78:4 down (20) 8:18;9:4;14:7;23:12; 39:23;41:5;44:5,8;47:22; 48:17;53:7;57:12;62:7; 76:8,8;79:15;80:9,18; 81:2;83:3 downsized (1) 21:18 downtown (3) 35:25;48:2;63:15 dozens (1) 44:16 draft (2) 7:25;11:6 dramatically (1) 6:18 drastically (1) 21:17 draw (1) 48:17 drawdown (10) 25:21;26:11;28:24; 29:24;46:2;53:1;57:8; 67:20;72:21;74:11 drawings (1) 35:7 Dreamer (1) 41:17 drinking (2) 20:20;32:18 Drive (13) 45:15,25;47:14;49:9; 51:9;55:6;60:17;62:12; 67:17;72:13;78:23;80:8; 82:7 driven (1) 66:22 drop (10) 5:12,17;11:10,11; 25:25;75:21,21;80:24; 81:1,11 dropped (3) 53:7;75:5,6 dropping (1) 81:10 dry (7) 18:23;24:9;29:12,17; 30:4;41:12;46:10 Ducks (1) 39:22 due (3) 36:21;39:4;56:16 Duncan (1)
---	---	---	--	---

18:11 during (5) 14:9;19:15;22:24; 26:10;86:11	36:8,19;37:10 eligible (3) 34:21;36:11,17 eloquence (1) 23:11 else (8) 62:9;63:10;68:16; 77:13;81:6;85:3,4;86:14 elsewhere (1) 8:2 email (3) 12:5;31:24;60:7 emailed (1) 60:9 embody (1) 37:1 emotional (1) 42:14 enactment (2) 10:23;11:15 end (4) 30:23;50:14;70:12; 86:7 endangered (4) 21:19;24:13;54:4;83:8 endorsed (1) 27:21 engage (1) 43:7 engaged (1) 85:22 engagement (1) 31:3 engaging (1) 43:9 engineer (4) 23:14;74:21;76:12; 85:25 engineering (3) 7:17;14:6;37:13 Engineers (23) 11:19;12:6;14:20;17:8, 18;19:6,11;21:25;23:21; 24:17;37:16;46:4;47:19; 48:16;51:13;53:16;56:10, 11;70:6;80:15;81:16; 82:20;86:9 Engineers' (1) 18:22 enjoy (1) 60:21 ensure (1) 31:12 entire (4) 35:20,24;48:4;85:15 entity (1) 37:6 environment (2) 56:18,23 Environmental (4) 20:23;28:14;65:24; 85:3 environmentalism (1)	66:23 Envision (1) 21:5 EPD's (1) 21:7 equally (1) 6:5 equation (1) 65:10 equipment (1) 76:10 Erich (1) 59:16 Erick (1) 34:12 especially (1) 51:21 essential (1) 33:1 essentially (1) 5:8 estate (1) 63:19 estimate (1) 64:3 estimated (2) 25:25;49:22 estimates (1) 70:21 ethically (1) 20:1 evaluation (2) 6:2,7 even (9) 8:10;12:17;24:20;45:1; 62:8;66:24;67:3;69:22; 80:14 evening (9) 4:1,14;32:1,7;38:3; 52:10;55:1;72:11;80:6 event (1) 57:6 events (2) 21:23;36:15 ever (2) 59:23;77:25 every (8) 15:21;19:17;20:8; 22:13;25:5;61:18,25; 62:13 everybody (12) 18:3;30:20;42:4;47:3; 59:18;60:8;63:10;67:7; 68:16;72:12;78:14;84:3 everyone (8) 2:23;11:22;25:3;31:12; 38:3;45:4;78:19;85:13 everyone's (1) 31:10 everything (8) 13:13;34:9;46:15; 47:17;72:23;76:25; 78:12;81:6	everywhere (1) 75:20 exact (1) 38:22 Exactly (1) 46:8 example (1) 26:10 examples (1) 37:13 excavates (1) 5:7 exceptions (1) 14:21 Excuse (5) 42:11;62:20;63:9; 79:18;82:8 Executive (1) 34:14 exercise (1) 85:18 exhausted (1) 84:24 existed (1) 37:21 existing (5) 4:19;5:5;6:1;27:25; 28:16 exists (1) 41:10 Expansion (1) 20:4 expect (1) 86:5 expended (1) 24:22 expensive (1) 48:12 experience (2) 19:4;72:16 experiencing (1) 43:22 expert (1) 18:9 expired (1) 31:16 Explain (1) 42:6 explanation (1) 26:6 explicitly (1) 28:18 extend (1) 26:21 extended (1) 62:15 extensive (1) 48:21 eye-opener (1) 25:24	face (1) 42:5 faces (1) 40:6 facility (1) 62:12 fact (6) 5:16;13:14;20:9;24:4; 49:14;50:23 failed (1) 12:25 fails (1) 21:11 failure (1) 22:3 failures (1) 66:19 fair (1) 34:8 fall (5) 23:12;62:18;63:10; 75:24;79:18 fallen (1) 79:18 falling (1) 29:19 family (3) 50:20;70:19;79:2 fan (1) 65:22 far (5) 20:17;24:7,8,10;81:11 fast (1) 76:11 father (1) 42:22 favor (1) 73:15 favors (1) 28:23 Fear (1) 69:22 feasible (1) 8:10 February (1) 19:1 federal (2) 2:9;8:11 feel (3) 43:10;46:12;82:11 feet (18) 5:9,13,14,18;11:3,3,5; 26:2,3,4;38:14;41:13,24; 46:7,9;65:8;66:13;68:3 fell (4) 46:8;75:7,7,8 Fennoy (1) 3:17 FERC (1) 69:4 few (1) 53:6 fight (1)
E			F	

<p>30:22 fighting (2) 17:10;54:15 figures (1) 74:3 figuring (1) 67:6 file (3) 70:3,5;85:5 filed (1) 84:20 fill (1) 31:5 finally (1) 24:19 financed (1) 20:14 financial (1) 70:17 find (4) 24:12,13;41:5;63:9 fine (1) 77:7 finish (1) 76:15 fire (1) 75:6 firm (1) 86:1 first (17) 10:3;14:18;16:3,12; 20:10;23:4,5;32:3,5,5; 39:11;49:18;52:20;77:10, 18;79:23;85:21 fish (51) 4:16;5:24;6:1;7:19; 14:11,11;15:17;16:13; 21:19;24:19,23;27:11; 32:15;34:10;35:14;39:11, 14,17;40:13;44:13,17,23; 45:18,18;49:10;54:4,6,7, 7;56:14;61:8;64:14,18; 66:25;68:7;69:6,8,21; 70:24;71:23;73:2,3,18; 76:2,4,14;77:21;79:24, 25;80:2;83:4 fisherman (1) 65:18 fishery (1) 44:19 fishing (5) 32:17;42:21;43:25; 44:25;60:22 Fitz-Symms (1) 49:7 fix (6) 52:2,8;68:4;82:20; 84:8,10 fixed (7) 5:3,6;7:11;8:2;18:23; 19:2;76:10 flood (12) 8:13,19;27:19;66:10,</p>	<p>18;72:2;73:8,9,11,18; 81:7,8 flooding (1) 27:13 floodplain (7) 5:3,7;8:12;18:24;41:1; 42:10;79:20 floods (2) 8:21;66:14 floodwaters (1) 8:4 floor (1) 10:10 Florida (1) 59:22 flow (1) 81:23 flows (1) 66:16 foaming (1) 26:13 focus (1) 50:11 focused (1) 76:25 folks (8) 14:16;15:10;20:17; 43:12;53:4;59:10;63:23; 65:4 follow (1) 25:5 followed (1) 9:10 following (3) 40:11;56:17;65:16 follow-up (1) 13:24 food (1) 80:1 foot (3) 5:9;26:20;62:16 for (161) 2:3,5,15,16,20;4:1,9; 5:21;6:4,22,22;8:11; 10:20;12:8;13:12,23; 15:11;16:22;17:11,16,20, 21;18:3;19:24;20:5,11, 14,22;21:6,10,21;22:1; 23:8,11,23;26:3,6,24; 27:3,17,18;28:3,19; 29:14;31:10;32:9,17,18, 20,21,23,23;33:15,21,22; 34:4,4,21;36:3,7,11,25; 37:1,22,24;38:21;39:12, 13;40:9,10,14;42:2; 44:16,23;45:5,10;47:7,7, 8,15;48:2,4;51:5;52:2,18; 53:4,18,21;54:4,15,19,19, 23;55:2,10;56:2,4;59:21; 60:25;61:14,22;62:3,4, 16;63:9,22,22;65:12,16; 67:9;69:4,13;70:8,10,15, 18,22;71:8,14,21,22,23;</p>	<p>72:1,11;73:8,9,11,24; 74:6,10;75:25;76:16,24; 77:17;78:6,9,10,20,21,24; 79:2,5,6,6,7;80:1,16,16, 19;81:8;82:9,20;83:14, 19;84:20;85:2,13,15; 86:4,8,11 forecasting (1) 26:8 Forget (1) 79:24 former (1) 74:20 forms (1) 31:22 Fort (2) 20:18;52:15 forth (2) 4:17;71:19 fortunately (1) 23:14 forward (2) 16:10;55:22 found (1) 24:19 foundations (1) 75:11 four (4) 6:6;15:13;32:23;76:24 fourth (1) 57:5 Foxfire (1) 38:5 frankly (3) 14:1,16;61:6 Frantom (1) 3:11 free (1) 85:18 friend (1) 58:1 friends (2) 9:15;50:20 frightening (1) 24:12 from (55) 3:9,11,12,13,14,15,16, 18,20,22;5:13;10:25; 16:5,20;21:5;24:7,8,10; 28:14,23;33:2;35:15; 39:20;41:14;44:6;46:16; 49:11,16;50:9;51:15,16, 17,20;52:8;53:14;56:13, 16,17,20;58:2;59:10,22; 63:19;64:1;65:5;66:19; 71:17;72:20;73:23; 74:23;75:19;82:4;85:24, 25;86:16 front (3) 3:10;59:3,4 full (6) 3:1;30:2,2;44:5;49:19; 61:11</p>	<p>fund (2) 13:6;40:23 funded (2) 13:11;39:16 funding (1) 13:7 funds (4) 16:23;34:4,5;52:8 further (1) 28:10 future (8) 21:11;26:23;40:24; 43:12;77:16;78:10;79:6,7</p>	<p>16:10;17:13,22;22:13; 24:18,20,22;30:11;43:18; 52:7;55:20;59:24;60:5; 61:4,16,23;63:17;69:11, 12;77:25;81:9;85:7 gets (1) 61:19 getting (2) 54:18;64:21 give (9) 10:7;33:25;40:12;51:6; 58:4;61:7;64:7;76:9; 78:10 given (2) 46:13;68:2 gives (1) 64:6 Gloria (3) 51:10,13,18 go (14) 16:10;18:6;30:2;31:1; 39:2;41:4,12;44:5;48:19; 62:2,4;64:15;75:15;83:17 goal (3) 39:15;59:1;68:22 God (3) 8:18;12:23;79:25 goes (4) 10:8;75:17;81:2,5 going (62) 8:18,21,21;13:11; 14:22,23,23;15:22;16:13, 15;23:12;25:19;29:25; 30:15;38:8;39:2;41:6; 43:13;46:14,15,25;47:5, 24;48:17,18;54:12;56:20; 57:9,24;61:24;62:7,14, 15,16,17,18,25;63:2,10, 24;64:7;67:10,12;68:4,5; 70:20;74:5;75:9,11,12; 77:25;79:13;81:2,3,9,20, 23,24;84:19,25;85:1,4 gone (4) 50:1;70:8,21;84:22 Good (20) 4:14;12:7;15:5;25:2; 29:4;32:1,7;38:3;43:16; 45:8;47:10;52:10;55:1; 58:1;61:19;69:24;72:11; 74:6;80:6;83:19 Goodale (4) 55:7;62:22;72:15;74:9 Google (1) 81:19 Gordon (2) 20:18;52:15 got (16) 7:15;14:17,19;15:2,19, 23;16:9;17:22;46:10; 50:20;66:9;70:3;77:15; 83:1;84:8;85:6 gotta (3) 17:4;30:22;60:11</p>
--	---	--	---	---

G

game (1)
 71:14
GARDINER (2)
 52:10,11
Gary (2)
 3:23;25:3
gates (5)
 8:3,17;9:2;14:9;66:11
gave (2)
 46:4;62:24
GDOT (1)
 18:17
general (3)
 4:10;28:11;59:7
generally (1)
 18:5
generates (1)
 57:5
generation (2)
 73:23,24
generations (2)
 77:17;78:10
generous (1)
 13:3
gentleman (1)
 80:21
gentlemen (11)
 9:6,14;42:12,12,13;
 50:10;51:2;52:11;67:18;
 78:16;85:9
Geological (1)
 11:1
Georgia (29)
 5:25;9:15;16:21;18:13,
 16,19;19:13,20;20:23;
 23:2,24;32:13,15,19,22;
 34:20,25;36:9;38:6;
 39:21;42:21;49:7;50:18;
 59:13;62:19;64:5;70:4;
 83:24,25
Georgians (2)
 23:4,5
Georgias (1)
 23:3
get (32)
 3:3;13:25;14:14,19;
 15:12,16,16,17,17,20;

gotten (2) 23:9;43:1	gun (1) 84:12	3:14	hearing (2) 59:25;86:16	35:2,15;36:2,9,13;37:20
government (5) 2:10;19:19;20:9;28:4; 71:21	guys (3) 42:19;44:21;60:14	hasn't (1) 69:20	heck (1) 17:6	historical (1) 35:22
governments (2) 50:25;51:4	H	hate (2) 53:17;82:18	height (1) 66:16	history (3) 35:5;36:17,21
Governor (4) 18:11,11,18;59:8	had (18) 9:25;13:15,20;17:3; 38:25;39:3;46:8;49:13; 51:14,22;56:7;58:20; 59:24;67:21;68:17; 72:18;74:10;82:23	have (159) 2:8,14,18,20,22,24;3:1, 2,6,19,25;4:3;6:17;7:13; 8:20;9:7;10:12;11:24; 12:3,4;14:4,9,12,15,19; 15:12,19;16:9,17,19; 18:13;19:14,20;20:9; 21:14,20;22:16;23:2,3; 24:3;25:5;26:4,7;29:15, 21;30:8,19;31:8,13,16; 32:1,5;33:17;35:8,11; 36:15;38:7;39:4,6,7;40:6, 22,24;41:24,25;42:6,22; 43:3,17,24;44:13,16,18; 45:5;46:11,20,25;47:11; 48:14;49:24;50:23; 51:10;52:7;54:3,11; 55:10,10;57:6,8,11,11; 58:1,6,14,15;59:5,9,19, 24;60:18,20;62:4,15; 63:16;64:24;66:13;69:1, 6,8,19,21,25;70:5,21; 71:15,18,21;72:3,16,18, 18,19;73:22;74:9;75:4, 12,14;76:1,3,4,10,22; 77:2,3,15,19;78:4;79:7,8, 13,15,16,22;80:4,13,24; 81:4,13,17,22;83:10; 84:13;85:2,10,14,22; 86:5,9,10	heighth (1) 10:22	Hixon (3) 58:3,5,6
grader (1) 81:17	hadn't (1) 68:9	haven't (3) 44:21;60:12;72:22	held (1) 51:22	Hodge (1) 15:25
graduate (1) 63:16	half (5) 5:13,13;49:21;52:24; 77:15	haven't (1) 40:3	hell (1) 78:7	hold (1) 57:3
Graham (2) 10:14;84:6	hammering (1) 78:8	having (3) 10:14;35:22;39:17	Hello (5) 45:24;49:6;60:16; 68:11;78:19	Holmes (3) 42:18,19,20
grand (1) 74:24	hand (3) 8:17;13:14;28:2	he (9) 4:6;9:18;10:2;14:2; 17:5;46:4;56:23,24,24	help (8) 11:23;24:20,22;53:11, 12,13;55:22;61:4	home (1) 78:12
grassroots (1) 60:5	hanging (1) 68:3	he'll (1) 9:10	helping (3) 17:13;18:9;70:16	Homeowners (1) 72:15
grateful (2) 9:23;10:2	Hanner (4) 45:24,24;47:13,13	he's (4) 4:5,12;13:1;46:3	Hephzibah (1) 75:19	homes (4) 24:10;63:25;64:1; 72:19
great (4) 9:21;13:12;30:19; 60:11	happen (11) 15:11;46:14,15;47:17; 53:6;66:20;68:5;73:3; 74:12;76:13;77:6	head (2) 22:6;76:11	her (5) 31:10;40:12;79:6,6,7	honesty (1) 24:13
greater (2) 5:17;26:5	happened (5) 11:9;53:1;67:20,21; 84:17	headed (1) 67:9	here (54) 2:17,20;3:2,22;4:5,7; 11:24;12:12,23;16:18; 17:16,17,20;25:7,11; 33:7;35:8;38:8,25;39:7; 40:5;41:3;42:20;43:6,15; 50:16;52:6,14,16,17,19, 25;54:15,19;56:7;57:6; 59:22;60:8;66:1;68:13; 70:20;75:19;76:13,21; 78:9;79:5;82:10,11,14; 83:9;84:7,17,23;85:19	honored (1) 25:7
greatest (1) 58:19	happening (1) 46:16	he'd (1) 9:10	here's (3) 81:19,19;82:19	hopeful (2) 12:11;73:22
greed (1) 66:22	happens (2) 29:11;42:1	he's (4) 4:5,12;13:1;46:3	hey (4) 12:21;42:19;65:13; 83:17	hopefully (1) 3:7
GREENBAUM (3) 51:2,8,9	happy (1) 67:8	head (2) 22:6;76:11	Hi (1) 47:13	hoping (2) 13:23,24
Greene (2) 63:14;74:19	Harbor (6) 20:4;23:23;48:25;83:1; 84:1,21	heard (11) 31:8,13;40:3;52:23; 54:5;55:8,13;65:20; 71:18;85:24,25	Hibner (2) 56:11;82:14	Horse (1) 26:11
Greenville (1) 65:15	harbors (1) 34:5	health (5) 20:2,11;22:9;28:13; 46:23	high (3) 5:22;37:4;45:16	hour (1) 77:14
Grew (1) 42:21	hard (1) 25:20	healthy (1) 20:14	higher (3) 5:10;40:13;64:16	hours (1) 43:3
Griff (1) 74:18	Hardie (1) 3:10	hear (2) 40:12;55:2	highest (2) 68:21;69:16	House (2) 10:9;58:6
GRIFFIN (2) 74:18,18	Hardy (1) 58:22	heard (11) 31:8,13;40:3;52:23; 54:5;55:8,13;65:20; 71:18;85:24,25	high-powered (1) 59:10	how (20) 7:15;9:20,22;12:16; 13:10;16:5;29:15,21; 47:18;48:15;54:12;63:2; 65:25;66:1;69:10;70:2; 71:8;82:19,19;84:11
ground (2) 47:24;75:23	Harley (1) 75:7	hearing (2) 59:25;86:16	Hill (1) 72:3	however (2) 3:3;46:9
group (1) 18:9	has (38) 2:4,23;5:19;7:2;8:8,25; 11:7,19;12:6,21;13:2,11; 14:8;16:1,6,7;17:12; 18:24;19:22;20:13;21:3; 25:15;26:22;28:24; 30:18;31:16,21;34:19; 36:10;38:12,22;49:3; 60:8;68:8,16;73:25; 77:22;79:18	he's (4) 4:5,12;13:1;46:3	Hills (2) 49:8,15	Hudson (1) 70:10
groups (1) 39:22	hasn't (1) 69:20	head (2) 22:6;76:11	him (1) 58:4	huge (1) 73:12
grow (1) 20:19	have (159) 2:8,14,18,20,22,24;3:1, 2,6,19,25;4:3;6:17;7:13; 8:20;9:7;10:12;11:24; 12:3,4;14:4,9,12,15,19; 15:12,19;16:9,17,19; 18:13;19:14,20;20:9; 21:14,20;22:16;23:2,3; 24:3;25:5;26:4,7;29:15, 21;30:8,19;31:8,13,16; 32:1,5;33:17;35:8,11; 36:15;38:7;39:4,6,7;40:6, 22,24;41:24,25;42:6,22; 43:3,17,24;44:13,16,18; 45:5;46:11,20,25;47:11; 48:14;49:24;50:23; 51:10;52:7;54:3,11; 55:10,10;57:6,8,11,11; 58:1,6,14,15;59:5,9,19, 24;60:18,20;62:4,15; 63:16;64:24;66:13;69:1, 6,8,19,21,25;70:5,21; 71:15,18,21;72:3,16,18, 18,19;73:22;74:9;75:4, 12,14;76:1,3,4,10,22; 77:2,3,15,19;78:4;79:7,8, 13,15,16,22;80:4,13,24; 81:4,13,17,22;83:10; 84:13;85:2,10,14,22; 86:5,9,10	his (2) 13:3;56:11	human (2) 56:16,23	hundreds (5) 20:15;30:8,15;33:18; 77:16
growing (5) 22:10;43:23,23;50:15; 54:17	hasn't (1) 68:9	heard (11) 31:8,13;40:3;52:23; 54:5;55:8,13;65:20; 71:18;85:24,25	Historic (11) 34:15,18,19,23,24;	hundred-year (3) 33:25;34:7;42:10
growth (2) 20:14;22:10	Hasan (1)			
Guard (4) 74:20;76:3,9,12				
guess (4) 5:17;46:3;54:7;83:7				
guests (1) 9:7				
guide (1) 65:18				

<p>husband (1) 79:4</p> <p>hydraulic (1) 75:22</p> <p>hydroelectric (1) 66:9</p> <p>hydrology (1) 65:24</p>	<p>24:3;49:18,20;56:16; 63:24</p> <p>impacted (2) 19:9;46:19</p> <p>impacts (1) 57:17</p> <p>impassable (1) 62:8</p> <p>implementation (1) 25:22</p> <p>importance (3) 10:4;23:25;27:2</p> <p>important (9) 2:4,7;9:20;45:17; 46:18,23;52:4;56:4;65:6</p> <p>impoundment (1) 35:20</p> <p>impressed (1) 51:21</p> <p>improved (1) 73:14</p> <p>Improvement (2) 10:20;44:25</p> <p>Improvements (1) 27:17</p> <p>in (178) 2:5,11,21;3:21,25;4:2, 5,17;5:16;6:2,7,9,20; 7:18;8:15;9:18,24;10:3; 12:1,15,21;13:3,14; 14:22,25;15:3,13;16:3, 11,12,21;17:6,6,13;18:14, 19;19:1;20:14,15,24; 21:7;22:17;23:6,6,23; 24:3,20,25;25:9,16,20,25; 26:12,18,25;27:9,13; 28:10;29:16;30:4,7,9; 31:12,22;32:13,16,25; 33:18;34:10,13,18,19,22, 23,23;35:4,14,16,22; 37:18;38:15;40:23; 41:11;42:10,20,25;43:1, 2,2,4,19,22,24;44:2,7, 46:18;47:3,9,14;48:6,14; 49:8,10,15,19;50:4,14,15, 15,16,24;51:10;52:18; 55:11,21,24;56:1,8,19; 58:1,6,9,23;59:6,12;60:8, 10,20;61:18;62:5,18,21; 63:15,17;64:10,10;65:10, 14;67:2;68:12;69:1,3,3,4, 5;70:9,9,11,16,20;71:3, 13;72:17;73:15,25;74:2, 7;75:8,17,22,24;76:8,20; 78:5;79:13,23;81:3; 82:17,20;83:25;84:3,3,9, 10,21;86:2,3,4</p> <p>inaudible (1) 42:8</p> <p>include (2) 3:9;35:24</p> <p>included (2) 27:18;35:6</p>	<p>includes (2) 6:24;23:5</p> <p>including (1) 27:11</p> <p>income (1) 63:22</p> <p>inconsistent (1) 28:16</p> <p>incorporated (1) 21:3</p> <p>increase (1) 21:2</p> <p>incredible (1) 12:16</p> <p>indicated (1) 11:8</p> <p>individual (2) 37:7;57:25</p> <p>industrial (3) 27:3;32:19;37:25</p> <p>industry (3) 28:4;32:20;33:16</p> <p>information (4) 6:15;10:25;41:3;46:5</p> <p>Infrastructure (4) 10:19;13:9;27:16;33:6</p> <p>inhibit (1) 26:15</p> <p>initially (1) 65:20</p> <p>initials (1) 69:7</p> <p>input (2) 2:8;82:4</p> <p>inside (1) 29:19</p> <p>inspiring (2) 9:14,17</p> <p>installations (1) 20:18</p> <p>instead (1) 47:4</p> <p>in-stream (1) 69:6</p> <p>intakes (1) 21:12</p> <p>intend (1) 25:18</p> <p>intended (1) 11:21</p> <p>intent (2) 10:18;11:19</p> <p>interactions (1) 42:24</p> <p>interest (7) 25:11;43:22;55:11; 60:20;66:23;70:16;81:10</p> <p>interested (1) 70:19</p> <p>interesting (1) 4:21</p> <p>interests (2) 43:6;86:17</p>	<p>interpret (1) 10:21</p> <p>interpretation (1) 38:24</p> <p>interpreted (1) 38:13</p> <p>interrupt (1) 31:15</p> <p>into (22) 3:6;14:14;18:6;19:23; 21:4,11;25:18;31:7;41:5; 43:12;44:10;46:9;48:6; 50:6;53:13;74:25;75:7,7, 8;78:13;81:3;84:14</p> <p>introducing (1) 35:13</p> <p>invested (3) 30:8;42:1,2</p> <p>investment (1) 28:6</p> <p>investments (1) 30:7</p> <p>involved (5) 51:10;55:24;57:1; 59:24;77:8</p> <p>Ironman (8) 49:12,21,23;52:24,24; 61:5,13,18</p> <p>Ironmen (1) 48:6</p> <p>irresponsible (1) 74:11</p> <p>is (194) 3:22;4:6,7,21,22,24; 5:2,3,14,16,21,23;6:3,4,4, 23;7:8;8:10,11,11,24;9:2, 6,21;10:7,17,21;11:5,5, 17,21,23,25;12:7,16,18; 13:5,7,11,21;14:3,5,22; 15:5,11,15,19,25;16:9; 17:2,6,17,18,23;19:16,24; 20:10;21:25;22:4,11; 23:10,21,23,24;14:25;25; 26:6,16;29:1;30:14,19; 31:1,12;32:11,12;33:13, 14;34:12,15,18;35:21; 36:11,25,25;38:4,13,14, 16,23;39:5,14;40:1,4; 41:18,21;42:5,14,17,17, 25;43:11,23;44:3,15; 45:17,17,19;46:18,23; 48:1,8,13,19,23,23,25; 49:18,21;52:4,4,11,21; 53:8,8,24;54:16,17,18; 55:5,7,18,25;56:15; 57:12;58:19;59:1,8,16, 18;60:16;61:16,17;62:1, 14;63:6,7,12,22;64:18; 65:6,10;67:1,9,10;68:11, 24;69:7,10,12,25;71:17; 72:1,1,17,23;73:13,19; 74:15;75:1;76:16,18,21; 77:10,19,25;78:13,17,22,</p>	<p>24;79:2,5,21;80:1;81:15, 15,23;82:19;83:24;84:10, 13,14,19,23;85:1;86:9</p> <p>Isakson (2) 18:15;84:5</p> <p>isn't (3) 8:18;24:16;55:7</p> <p>issue (3) 9:25;25:17,20</p> <p>issues (5) 28:3,5;46:23;54:20,20</p> <p>it (146) 2:14;4:18,19;5:4,6,25; 8:20;9:17,20,22;11:5,10; 12:16;13:22;14:10;15:5, 18;16:7,8,22;17:10,22, 23;19:14,24;23:16,24; 24:4,12,20;26:16,25; 27:2;29:3,11,18,22,23; 30:1,3,4;37:19,19;38:17, 23;39:5,12;40:3,19,21,21, 24;41:1,1,12;43:17,19; 44:20;45:16,16;46:7,16; 47:5,10;48:20;50:7,7,7, 51:25,25;52:1;53:1,8,12; 54:14,18;55:8,25;56:8,8, 12;57:12,12,13,14,16; 59:8,12,19;60:20;61:19; 62:7,22;63:4,6,10,12; 64:6;65:4,5,7,9,22;66:1,2, 6,11,14;67:21;68:2,4,8; 69:12,15,23;70:24;71:22, 23;73:1,6,7,7,9,11;74:12, 19;76:13;77:19;78:1,7; 79:9,15;80:24;81:5,22; 82:5,18,22,23;83:1,5,7, 15;84:2,14,16,20</p> <p>it's (41) 2:7;4:21;9:14;11:8,12, 17;13:8;14:22,23;15:22; 19:25;24:17;33:1,11; 39:15;40:19;41:8,16; 44:14;47:15;54:21;56:4; 57:5,8;58:18;61:3,19; 62:17;63:10;67:12;68:3; 73:17,23;74:6;77:14; 80:10;81:8,18;83:8,16; 84:18</p> <p>item (1) 65:10</p> <p>It'll (1) 61:24</p> <p>its (6) 28:1;36:20;37:11; 61:11;64:25;65:1</p> <p>It's (12) 15:13;41:16;46:14,14; 47:4;48:9,17;61:2;62:7; 65:8,8;78:3</p> <p>itself (1) 8:13</p> <p>I've (3) 42:1,2;43:1</p>
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<p style="text-align: center;">J</p> <p>JACKSON (3) 2:2;85:11,12</p> <p>Janice (1) 85:10</p> <p>January (1) 27:20</p> <p>jetty (1) 63:2</p> <p>JIMENEZ (3) 68:11,12;69:18</p> <p>job (1) 77:7</p> <p>jobs (2) 33:17,21</p> <p>Joe (6) 4:4;12:25;13:11,12,15; 84:7</p> <p>John (1) 3:12</p> <p>Jorge (1) 68:12</p> <p>Josh (1) 65:13</p> <p>Joyce (1) 45:14</p> <p>jump (1) 20:24</p> <p>junction (1) 2:7</p> <p>juries (1) 74:24</p> <p>just (49) 2:21;6:15;7:14;9:3; 11:10;12:6,11;14:3; 16:25;17:19,21,22,22,23; 23:6,14;30:3;31:1;38:6; 23;40:10;41:2,4,13;43:4; 44:14;45:3;47:7;48:9; 53:23;55:12;57:1;60:3; 14,21;61:16;65:4;67:20; 71:21;72:3,7,8;77:17; 80:9,17,22;81:5;85:12,12</p> <p>justify (3) 64:20,21;83:1</p>	<p>52:22</p> <p>Keith (1) 72:12</p> <p>Kemp (2) 18:11,18</p> <p>kept (1) 33:5</p> <p>kids (1) 78:11</p> <p>kill (1) 82:24</p> <p>kind (7) 7:5;33:11;43:18;44:1; 74:7;81:8;82:4</p> <p>kinds (1) 44:1</p> <p>knees (1) 22:11</p> <p>knew (1) 15:4</p> <p>knock (1) 78:14</p> <p>knocking (1) 77:21</p> <p>know (55) 2:19;4:5;11:8,20,22; 12:6;13:6;14:3,10,12,13; 15:19,21,21;16:4;18:1; 23:19;24:1,6,19;29:10; 33:9,11,16,21;34:2,4,6; 40:5,19;42:14;44:6; 45:20;55:13,15;57:3; 58:15;62:6,17;64:9; 66:18;67:3,19;68:18; 69:7,23;70:1,1;71:16; 77:6;80:14;82:18;83:15; 84:10,11</p> <p>knowing (1) 60:1</p>	<p>larger (1) 21:24</p> <p>largest (3) 49:20;61:17;83:25</p> <p>LASHER (3) 55:1,5,6</p> <p>last (10) 21:5;31:25;32:3;49:12, 21;63:4;72:20;74:1;75:5; 81:15</p> <p>late (1) 71:3</p> <p>later (2) 48:14;58:15</p> <p>Lauren (4) 15:25,25;16:6;55:25</p> <p>law (7) 11:13;44:14;50:6;84:8, 10,14,16</p> <p>Lawrence (1) 55:5</p> <p>laws (1) 20:7</p> <p>lawsuit (4) 39:19;84:19;85:1,5</p> <p>lead (1) 60:14</p> <p>leadership (1) 19:12</p> <p>leading (1) 77:6</p> <p>learn (2) 29:15,22</p> <p>learned (3) 25:4;26:7;65:25</p> <p>least (3) 32:1;36:5;67:13</p> <p>leave (1) 64:12</p> <p>left (3) 31:7;42:3;63:8</p> <p>legislation (5) 5:1;7:25;15:3,5;52:5</p> <p>legislators (2) 52:5;55:21</p> <p>legitimate (1) 21:16</p> <p>legitimately (1) 22:3</p> <p>length (1) 44:5</p> <p>less (4) 81:2,3;82:3;83:22</p> <p>lesson (1) 29:16</p> <p>let (9) 8:3;29:16;30:4;58:14; 64:11,15,18;66:11;68:17</p> <p>let's (5) 14:17;15:17;42:13; 76:7;80:17</p> <p>Let's (1) 83:1</p>	<p>letter (3) 13:15,18,19</p> <p>letters (2) 6:16;10:10</p> <p>letting (1) 29:12</p> <p>level (34) 10:22;11:1,14,16,21; 14:8;15:6;20:8;23:18; 26:14,19;27:3,12;33:2,4; 37:20;38:16,22;44:24; 47:19;48:1;50:3,5;56:22; 63:12;64:8,11,12,13,15, 16;65:7;66:6;79:14</p> <p>levels (1) 79:21</p> <p>levy (1) 78:5</p> <p>liaison (1) 69:4</p> <p>liberty (1) 59:6</p> <p>license (1) 69:5</p> <p>Lieutenant (1) 18:11</p> <p>life (10) 16:1;20:2;24:11;33:13, 14;38:2;42:1,3;48:14; 82:17</p> <p>lifecycle (1) 7:1</p> <p>lifespan (1) 77:15</p> <p>lift (1) 73:2</p> <p>like (46) 3:4;6:23;7:8,14;8:4; 9:3,9;15:21,24;17:1; 23:14;29:1,18;31:1,2,4,9, 23;33:11,22;43:10;44:4; 50:14;52:19;53:17;60:4; 61:22;63:23;66:8;67:21; 70:15,25;73:1,1,2,5,7; 74:14,15;75:2;81:8,19, 23;82:11;85:5;86:15</p> <p>likes (1) 29:10</p> <p>likewise (1) 21:7</p> <p>limit (1) 42:15</p> <p>Lindsay (1) 84:6</p> <p>Lindsey (1) 10:14</p> <p>line (2) 16:9;75:18</p> <p>list (1) 78:17</p> <p>listed (3) 56:23,24,25</p> <p>listen (6)</p>	<p>77:24;82:15;84:19; 85:1,4,15</p> <p>listened (1) 56:2</p> <p>listing (1) 34:22</p> <p>little (7) 16:24;56:7;60:23; 61:17;65:9;82:2,3</p> <p>live (24) 34:13;38:4;45:11,12, 25;46:1;47:8,14;49:10; 50:21;54:8;59:17;60:17; 65:14,14;67:17;70:10; 72:12;74:19;76:19; 78:22;80:7,18;82:7</p> <p>lived (3) 16:1;52:17;59:20</p> <p>livelihood (1) 45:19</p> <p>livelihoods (1) 30:6</p> <p>lives (2) 45:20,21</p> <p>lobbyist (1) 82:18</p> <p>local (4) 28:4;33:8;77:12;85:25</p> <p>located (2) 31:6;34:15</p> <p>Lock (47) 2:12;4:16,19;5:5;6:1; 7:20;9:19;10:5,15;13:10; 14:21;18:20;24:18;25:16, 23;26:24;28:15;32:25; 33:3,4;34:17,21;35:5,13, 19;36:6,11,19;37:10,18; 39:12,16;45:1;52:3,8; 63:25;64:9;68:23;70:16, 23;72:24;73:2,5,13,16; 76:5,7</p> <p>locks (9) 36:22;44:8;47:7,11; 64:10;75:25;76:1,14;78:4</p> <p>long (4) 46:11;48:13;82:21; 84:22</p> <p>longer (2) 53:20,21</p> <p>look (11) 15:8;29:17,23;42:4; 53:24;54:21;62:3;66:8; 74:25;75:16;81:4</p> <p>looked (3) 39:10;65:9;70:18</p> <p>looking (4) 16:18;23:16;60:2; 83:14</p> <p>looks (4) 29:1;67:21;75:1;81:22</p> <p>lose (5) 30:6,11,15;67:10,12</p> <p>lost (6)</p>
<p style="text-align: center;">K</p> <p>kayaker (1) 65:18</p> <p>kayakers (1) 44:4</p> <p>kayaking (2) 43:25;57:18</p> <p>keep (10) 40:25;41:7;45:16; 46:16;48:9;59:1,3;63:25; 78:11;81:10</p> <p>keeping (3) 7:20;32:25;39:12</p> <p>keeps (1)</p>	<p style="text-align: center;">L</p> <p>lack (2) 37:7;66:23</p> <p>ladder (4) 14:11;15:17;70:24; 73:3</p> <p>ladies (10) 9:5,13;42:11,12,12; 50:10;51:2;52:10;78:16; 85:9</p> <p>lady (1) 75:8</p> <p>land (2) 24:9;46:10</p> <p>Landing (4) 55:7;62:23;72:15;74:9</p> <p>Landon (1) 79:4</p> <p>language (1) 10:19</p> <p>largely (1) 11:5</p>	<p>legitimately (1) 22:3</p> <p>length (1) 44:5</p> <p>less (4) 81:2,3;82:3;83:22</p> <p>lesson (1) 29:16</p> <p>let (9) 8:3;29:16;30:4;58:14; 64:11,15,18;66:11;68:17</p> <p>let's (5) 14:17;15:17;42:13; 76:7;80:17</p> <p>Let's (1) 83:1</p>	<p>likes (1) 29:10</p> <p>likewise (1) 21:7</p> <p>limit (1) 42:15</p> <p>Lindsay (1) 84:6</p> <p>Lindsey (1) 10:14</p> <p>line (2) 16:9;75:18</p> <p>list (1) 78:17</p> <p>listed (3) 56:23,24,25</p> <p>listen (6)</p>	<p>longer (2) 53:20,21</p> <p>look (11) 15:8;29:17,23;42:4; 53:24;54:21;62:3;66:8; 74:25;75:16;81:4</p> <p>looked (3) 39:10;65:9;70:18</p> <p>looking (4) 16:18;23:16;60:2; 83:14</p> <p>looks (4) 29:1;67:21;75:1;81:22</p> <p>lose (5) 30:6,11,15;67:10,12</p> <p>lost (6)</p>

29:20;43:19;61:25; 62:4;77:22;80:16 lot (17) 7:5,21;40:3,5;41:3,3; 43:8,24;61:5,8;62:5;64:4, 6;68:14;69:14;71:18; 78:7 lots (1) 73:19 love (1) 23:15 Lowell (1) 51:9 lower (9) 8:14,22;11:7;26:21; 46:7;61:12;62:7;64:11; 66:14 lowered (4) 18:23;26:19;62:21; 63:4 lowering (3) 23:10;28:3;74:23	74:19 many (17) 2:6,6;3:25;29:14,14,14, 15,21;39:22;50:20,20; 53:17,18;60:21;73:21; 76:15,21 map (1) 81:19 Marcie (1) 76:18 Marina (1) 62:11 Marine (2) 49:11;52:15 market (1) 65:5 marketing (1) 63:18 Martha (2) 11:24,25 Martinez (1) 38:5 marvel (1) 14:6 master (1) 37:4 matrix (3) 22:21,24;39:9 matter (1) 74:25 maximize (1) 74:15 maximizing (1) 73:15 may (3) 2:21;37:7;48:11 maybe (7) 44:5,6;45:1;47:9;64:4, 23;82:3 Mayor (27) 3:10,21;6:20;9:11,11, 23;10:1;17:25;21:1;23:8, 8,14,19;25:5;32:8;45:9; 57:24;58:22,22;70:14,14; 71:2,5,11;72:10;82:8,13 mayordavis@augustagov (1) 31:25 mayors (4) 6:17,17;9:8;77:13 me (27) 9:17,19,20;10:2;11:18; 14:2;16:13;17:5;35:8; 42:6,11;43:13,18;47:15; 55:2;56:2,12;57:1;60:12; 61:3;62:20;63:17;66:17; 76:9;79:19;82:8;83:19 mean (12) 8:17;14:4,7;40:24; 56:5;68:2,20;70:22;72:4; 74:4;81:1,7 means (2) 30:22;36:5 meant (1)	68:19 measured (1) 46:6 measurements (1) 46:13 meet (2) 27:23;39:18 meeting (9) 4:11;13:16,24;16:3,12; 56:9;59:9;68:17,22 meetings (2) 9:25;38:10 meets (3) 36:6,20;37:11 Melanie (2) 79:3,5 Melinda (1) 78:22 member (3) 13:1;55:9;70:12 members (6) 4:3;13:21;19:2;33:7; 50:21;70:19 mention (2) 34:1,2 mentioned (5) 10:2;52:22,23;57:3,19 mentions (1) 38:16 messages (1) 12:13 met (3) 9:24;14:16,25 meteorologist (1) 79:10 method (1) 37:3 mic (2) 31:8;32:2 microphone (1) 25:6 microphones (1) 23:10 middle (2) 8:16;47:22 might (2) 12:20;22:22 migration (1) 73:18 migratory (2) 76:2,4 mile (1) 7:23 miles (7) 20:16;83:2,12,17,18, 22,22 million (19) 6:9,23;7:3;16:14,15; 30:12;49:22;63:23;64:3, 5,16,23;65:3;70:25;71:1, 14;84:21,22;85:7 millions (10) 27:5;28:6;29:20;30:9,	16;33:18,18;48:6;61:25; 77:16 mind (1) 77:23 mine (1) 61:22 Mine's (1) 60:23 minimal (1) 24:3 minor (1) 11:10 minute (3) 40:16,17;69:16 minutes (3) 31:14;42:16;56:3 misinterpreted (1) 11:19 miss (1) 3:7 missing (1) 82:10 mitigate (1) 27:12 mitigation (1) 27:24 modeling (2) 5:11,15 models (1) 26:9 modification (1) 40:20 money (9) 16:17;24:22,24;65:6; 67:11,12;71:8;75:1;84:23 MONTGOMERY (2) 34:12,13 morally (1) 19:25 more (21) 3:6;31:13;44:16,17; 48:11;49:24;53:8,9; 56:17;59:5;61:25;62:8; 65:25;66:2,16;73:21; 79:17;80:4;82:1,1,3 Moses (2) 32:6,11 mosquitos (1) 47:1 most (3) 46:17;57:5;83:10 motivates (1) 60:12 mouth (1) 15:1 move (8) 16:10;41:9;42:7;57:12; 62:25;63:2;67:8;69:24 moved (4) 41:13;52:13,19;80:9 MR (49) 4:14;7:12;9:5;25:2; 29:4;30:25;32:6,7,11;	33:11;34:12;38:3;40:16, 17;41:15,20,23;42:11; 47:13;49:6;50:10,14; 51:2,6,8;52:10;55:1,5; 58:5;59:16;60:16;63:14; 65:13;67:16;68:11;69:17, 18;70:7;71:6,12;72:10; 74:18;77:6,7;78:16;80:4, 6;82:6;85:9 MS (9) 2:2;42:19;45:7,14,24; 76:18;78:19;85:10,12 much (24) 5:16,16;10:7;17:24; 29:3;38:2;40:18;47:4,4; 49:17;51:1;53:8,9;59:14; 60:14;65:22;66:1,20; 71:8;74:17;75:2;78:21; 80:3;85:8 muddy (1) 43:1 mudflat (1) 28:9 mullet (1) 44:18 must (4) 10:21;27:24;51:3;52:6 mutual (1) 25:10 my (53) 15:1,2;18:1,5;22:25; 24:25;25:12,24;31:6,7; 32:11,11;34:12;38:4,10; 41:18,21,24;42:1,2,4,5,7, 22,24,25;43:4,6,8;52:11; 55:5;58:9;59:1,16,19; 60:16;67:16;68:11; 70:10;72:8;76:9,10,18, 20;78:22,24;79:2,2,3,4,5; 80:6;82:17
M				
made (4) 3:2;19:14;36:16;82:19 Magnolia (1) 49:9 mail (1) 12:4 main (2) 59:1;65:10 maintain (7) 6:13;10:11,22;15:6; 27:24;37:20;48:8 maintained (9) 9:22;11:4,15;14:5,24; 15:8;47:21;50:5;64:20 maintaining (3) 10:4,5;49:1 maintenance (2) 27:18;44:24 make (17) 7:4,10;12:5,23;22:13; 41:1;45:3;60:13;62:7; 66:6;67:6;73:3;76:13; 79:11;83:4,8;85:21 makers (1) 2:9 making (2) 70:24;83:25 male (1) 83:16 man (1) 69:18 management (2) 21:8;86:2 managers (1) 56:11 manner (1) 35:14 Manor (1)	85:21 may (3) 2:21;37:7;48:11 maybe (7) 44:5,6;45:1;47:9;64:4, 23;82:3 Mayor (27) 3:10,21;6:20;9:11,11, 23;10:1;17:25;21:1;23:8, 8,14,19;25:5;32:8;45:9; 57:24;58:22,22;70:14,14; 71:2,5,11;72:10;82:8,13 mayordavis@augustagov (1) 31:25 mayors (4) 6:17,17;9:8;77:13 me (27) 9:17,19,20;10:2;11:18; 14:2;16:13;17:5;35:8; 42:6,11;43:13,18;47:15; 55:2;56:2,12;57:1;60:12; 61:3;62:20;63:17;66:17; 76:9;79:19;82:8;83:19 mean (12) 8:17;14:4,7;40:24; 56:5;68:2,20;70:22;72:4; 74:4;81:1,7 means (2) 30:22;36:5 meant (1)	27:5;28:6;29:20;30:9,	style="text-align: center;"> N	
name (16) 32:3,10,11;34:12;38:4; 45:13;51:7;52:11;55:3,3, 5;59:16;60:16;68:11; 76:18;78:22 name's (1) 67:16 names (1) 80:4 name's (2) 70:10;80:7 narrow (2) 57:9;61:24 Nation (2) 10:20;27:17 National (13) 34:22;35:2;36:2,7,11, 13;49:8,15,16;74:20; 76:9,12;85:2 native (1)				

<p>52:17 Natural (1) 34:25 navigability (1) 28:17 navigable (1) 47:25 navigation (5) 21:23;28:21;38:19; 47:7;56:24 near (1) 76:20 nearly (4) 22:1;23:9;26:24;27:5 necessarily (1) 69:19 need (24) 16:4;43:20;44:2,22; 49:1,5;53:24;54:8,8,10; 55:20,23,23;60:15;61:10; 63:11;67:24;73:18,18; 78:13;79:1,7,8,19 needed (1) 6:13 needs (10) 9:22;21:2,11,21;22:2; 38:1;61:11;63:12;73:14; 80:3 negatively (1) 63:24 neighboring (2) 3:20;22:16 neighbors (1) 85:16 neither (1) 8:9 nervous (1) 74:4 never (1) 59:23 new (17) 6:15;18:20;21:4;25:23; 26:23;28:15;34:17; 35:12;36:5,19;37:10,17; 68:23;73:12;80:23;81:14, 21 news (2) 15:5;53:18 next (5) 20:25;42:17;78:17; 85:20;86:5 nice (1) 32:1 NIXON (4) 70:7,10;71:6,12 no (12) 4:19;14:21;30:18; 31:13;47:21,24;49:13; 53:20,21;71:11;80:1; 81:22 NOAA (2) 14:15;15:23 no-action (1)</p>	<p>4:23 Nobody (1) 40:11 no-brainer (1) 76:16 Noland (1) 32:12 Nominee (1) 74:21 none (1) 14:21 non-motorist (1) 44:3 noose (1) 84:12 North (26) 3:22;5:20;19:7,13; 23:20;24:25;25:15;27:6, 13;28:7,9;29:6,7;35:25; 48:3;50:18;51:4;58:8,17, 20;60:17;62:13;78:23; 81:3;82:7;84:3 Norwood (1) 51:19 not (67) 2:20;3:7;4:25;10:8,10; 11:9,12;15:4;16:11;19:8, 16,16;21:14,20;22:12,18; 23:2,6;24:21;26:16;27:1; 29:24;31:15,25;33:18; 35:15;38:14,23;41:1; 43:8,16;44:14;45:7,11; 46:20;47:7;48:17;49:22; 50:12;52:1,16;54:24; 57:16;59:2,4,6;60:1;61:2, 16;62:17;63:3,5,9;64:7; 65:22;68:4;73:4,11;74:6; 77:5,20;79:13;80:13,19, 22;82:10;85:4 nothing (9) 15:4;28:25;29:2;38:15; 42:3;46:25;48:19;66:22; 81:13 notice (2) 3:6;6:2 noticeable (1) 24:6 noticeably (1) 18:13 novel (1) 77:4 November (1) 6:7 now (37) 2:6;4:10;6:15,23;8:6; 9:6;24:11,24;35:23;39:6, 14,25;40:25;43:10;52:13; 53:16;54:2;55:18;60:25; 62:9,20;65:9;68:3;69:1, 15;71:1,3;73:9,24;74:5; 75:14,25;77:2;78:17; 84:9,15,24 nowhere (1)</p>	<p>76:20 nuclear (1) 32:24 number (8) 15:13;39:14;47:23; 49:18;52:18;59:17;71:1,1 numbers (7) 6:17;7:6;16:12,18; 21:7;22:22;60:2 numerous (2) 38:12;39:19 <p style="text-align: center;">O</p> O&M (3) 6:11,24;48:13 object (1) 72:23 objective (1) 4:11 objectives (1) 27:16 objects (1) 36:4 obliged (1) 68:20 observe (1) 57:15 observed (1) 26:4 obviously (2) 24:7;85:17 occasion (1) 2:4 occasions (1) 38:12 occurred (1) 26:11 Ocean (1) 36:24 October (1) 70:13 of (360) 2:2,5,13,16,22;3:1,1,4, 25;4:3,4,9,10,11,12;7:3,5, 5,13,15,18,20,23;8:5,6,9, 9,15,16,17,19;9:15,15; 10:3,4,18,19,22,23;11:1, 15,17,18,19;12:6,15,20; 13:6,7,9,16,21,25;14:4, 19,25;15:1,6,10,14;16:1, 3,21,22;17:1,2,7,17;18:1, 19,21;19:3,6,7,10,13,15, 17,19,21;20:5,7,8,11,15, 16,18,19;21:1,8,10,17,18, 24,25;22:2,9,15,17;23:6, 13,19,21,21,25;24:17,18; 25:3,9,10,14,21,22;26:8, 10,15,23;27:2,6,10,18,25; 28:6,6,13,20;29:6,7,11, 12,20,20;30:5,8,9,10,15, 16,18,21;31:2;32:4,15,21, 25;33:1,5,8,11,12,15,17,</p>	<p>18,24;34:15,20,22,25,25; 35:1,5,8,9,12,21;36:2,12, 17,18,20;37:2,3,4,9,11, 13,16,24,25;38:1,7,9,10, 18,21,24,25;39:6,15,18; 40:3,5,19,20;41:3,3,13; 42:23;43:3,3,8,14,15,18, 25;44:1,1,4,5,17,21;46:4, 6,10;47:2,4,15,19,19,22, 23;48:2,6,12,15,16,18,24; 49:2,14,16,17;50:22; 51:4,13;52:2,18,20;53:2, 3,5,16,17,18,18,22,25; 54:14,23;55:8,9;56:9,17; 57:14,20;58:8,11,12,17, 18,19,21,22;59:23;60:21; 61:1,5,8;62:2,5;64:4,6,21, 25;65:2,11,22,25;66:18, 20,21,23,24;68:14,21,22; 69:5,12,14;70:1,6,12,12, 21,24,24;71:18,22;72:5,5, 5,14,14,19,21;73:12,15, 16,19,20;74:2,7,11,21,22, 25;75:10;76:1,2;77:10, 12,14,15,16,16,20,21; 78:2,7,7,9;79:14,17,20, 22,25;80:10,14,15,23,24; 81:8,16,24;82:4,16,20; 83:10,13;84:1,2;85:14, 16,19,20,21,22;86:4,7,8 off (2) 3:8;22:10 office (7) 11:23,25;16:5;36:10; 40:8;55:21;56:1 official (1) 18:6 officially (1) 27:21 officials (6) 3:5,9;51:3;60:5,10; 86:3 often (2) 14:2;43:18 Oh (4) 51:8;69:18;72:5;84:13 Okay (17) 4:6,14;15:22;40:17; 41:16;42:1,16;45:6,18; 50:12;62:14;71:12; 76:13;80:20;81:5;84:19, 23 old (3) 36:5;62:4;81:20 on (115) 5:24;6:25;7:10;8:5,12, 25;9:24;10:9,23;11:15, 23;12:3;13:1,10;14:8,14; 15:4;16:8;17:11;18:12; 19:21;21:7,15;22:4,6,21; 23:13;24:9;25:6,10,23; 27:7;28:2,15;29:7,19; 30:12;32:17,20,22,33;19,</p>	<p>20;38:8,11,23;39:2,17, 19;40:2,4;41:24;42:21; 43:9;44:12,19;45:11,12; 46:1;47:8,23;48:14; 49:24;51:23;52:6,7;53:6, 10,19,19,25;55:7;56:3,18, 22;58:16;59:8,12;60:9, 18,22,23,24;62:18;63:10; 64:1,5,5,7,16,17;65:18; 67:2,8,23;70:20;71:9,14; 72:19;74:5,19;75:3; 76:22;77:5;78:8;79:9; 80:8,18,24;81:10,12; 82:9;83:2;84:2,5;86:6 once (1) 57:7 on-demand (1) 20:21 one (38) 2:19;4:3;7:18;8:5,9; 10:3;12:7;17:2,5;18:3; 20:18;23:1,1,2;39:13,15, 17;40:16,17;41:23;44:14; 45:19;46:6;49:18;55:13; 56:17;57:20;58:19; 59:17;61:1;67:11;69:16; 71:20;73:20;79:22; 80:10;82:24;84:20 ongoing (1) 64:19 only (17) 8:24;20:18;30:14; 35:18;40:1;46:10;56:13, 19;68:18,24;69:11,24; 73:20;77:24;81:11;84:18, 25 open (5) 8:3,16;14:10;64:13; 75:12 operational (1) 28:3 operations (1) 26:16 opinion (1) 24:25 opportunity (7) 10:12;31:20;62:24; 72:11;73:16;82:23;85:17 optimal (1) 26:16 option (27) 5:2;8:25;15:9;25:23; 26:3,18;27:21,22,22; 28:23;29:1;30:12,14,14; 37:16;39:8,8;40:1,2,5,12, 18;44:11;47:18;48:11; 53:20,21 options (8) 15:10;39:6,24;43:20; 45:4;53:10,25;54:22 or (43) 4:19;6:22;7:19,22;8:1, 21,24;11:10;12:5;13:14;</p>
---	--	--	---	---

<p>16:4;17:7;19:24,25;20:1; 22:10;23:13;27:17;31:16; 24;33:9;37:2,3,4,5;41:5; 44:7,16;52:16;55:19; 56:17;57:10;60:9;63:8; 64:21;65:1;66:11,22; 67:12;73:1,2;80:16;85:3</p> <p>order (2) 25:10;77:10</p> <p>organized (1) 51:14</p> <p>original (2) 4:15;8:9</p> <p>originally (1) 19:23</p> <p>other (23) 20:22;28:2;29:19; 30:12;39:22;46:22,22; 50:12;53:10,13,14,14,25; 54:20,21;56:19;57:17; 58:14,15;69:25;73:21; 76:3;83:14</p> <p>others (4) 61:9;76:21,22;77:8</p> <p>otherwise (2) 28:25;30:15</p> <p>our (99) 2:5,11,12,12;3:8,20; 4:11,12;9:7,8;11:22,25; 16:2,5;18:7,12;19:8;20:2, 2,2,2,24;21:4,11,12,13, 15,17;22:4,9,15;23:22; 24:14;29:9,19;33:12; 36:17;43:2,4,21,24;44:2, 19;45:2,10;46:7,10;48:7, 10;49:1,17;50:24;51:14; 52:5,21;53:4,5,7,11;54:9, 11;55:14,19,19,20,21; 56:4,8,21;57:11;58:1; 59:7,7;60:4,10;67:22; 72:17;74:16;75:5,6,21; 76:24;77:1;78:14,25; 79:1,9,14,20,21;80:2; 82:11;85:11,18,23;86:3, 4,9,10</p> <p>ours (4) 55:18;57:4;63:3;85:7</p> <p>ourselves (2) 42:13;54:13</p> <p>out (38) 4:22;5:8,25;7:14;8:8, 19;9:3;12:19;13:25;15:1, 10;18:4;31:5;41:2,3; 42:7;53:24;61:4,4,9,14, 16,22,23;62:2,10;64:11; 66:11;67:6;68:3;70:1,24; 75:4,17;77:21;78:1; 85:13;86:14</p> <p>outfall (2) 26:14,21</p> <p>outside (1) 33:24</p> <p>over (21)</p>	<p>2:19;7:20;8:1;20:15, 25;25:9;27:22;30:16; 31:2;34:6;35:23;37:22; 41:13;51:15;57:14; 58:13;60:25;64:3;70:21; 75:12;79:3</p> <p>overall (1) 38:1</p> <p>Overland (1) 34:13</p> <p>overview (1) 4:11</p> <p>own (5) 42:5;45:21;54:9;60:19; 68:12</p> <p>owners (3) 72:14,18;74:9</p> <p>oxygenate (1) 84:21</p>	<p>P</p>	<p>passionate (2) 16:25;42:14</p> <p>past (4) 27:20;44:8;50:15; 66:20</p> <p>path (1) 20:11</p> <p>patterns (1) 36:17</p> <p>Pavilion (1) 44:7</p> <p>pay (5) 12:14;63:9;67:24; 71:21;74:10</p> <p>paying (1) 25:1</p> <p>peace (1) 72:8</p> <p>Penix (2) 63:14,14</p> <p>people (38) 2:11;12:22;29:6;30:5; 34:9;39:3;40:3;41:4,7; 43:8;45:19;47:7,8,9; 51:15,16,22;54:5,15,19; 55:21;56:5;57:13,14; 58:23;62:3,24;64:7;66:1, 21;67:24;71:18,24;72:1; 76:3;77:25;78:8;84:3</p> <p>percent (4) 20:24;21:3,24;22:2</p> <p>Perdue (2) 18:15;84:6</p> <p>period (7) 14:24;31:3;34:7;37:2; 64:17;86:7,12</p> <p>permanent (1) 42:7</p> <p>permits (1) 21:13</p> <p>permitted (1) 31:19</p> <p>person (6) 9:18;10:6;31:13;40:11; 42:17;70:17</p> <p>personal (1) 72:16</p> <p>personally (2) 57:1;74:10</p> <p>persons (1) 12:12</p> <p>perspective (2) 63:20;76:21</p> <p>pest (1) 46:24</p> <p>petition (1) 51:23</p> <p>Pettit (9) 3:22;6:20;9:12;10:1; 21:1;23:8;25:5;58:22; 70:15</p> <p>photos (1) 35:7</p>	<p>physical (3) 10:22;11:14,20</p> <p>picture (3) 41:18,21;42:5</p> <p>pictures (3) 7:13;41:11,15</p> <p>pieces (1) 78:5</p> <p>pile (3) 7:23;8:15;73:10</p> <p>pink (1) 59:18</p> <p>pipefitters (2) 33:10,13</p> <p>pipeline (1) 20:16</p> <p>place (6) 7:18;14:22;35:23;38:5; 69:8;79:23</p> <p>Places (3) 34:23;36:3;53:14</p> <p>plan (15) 4:15;10:10;11:6;21:4, 6,10,14;22:7;30:12;46:9; 67:11,12;71:14;81:17,18</p> <p>plans (1) 73:25</p> <p>Plant (2) 26:12,16</p> <p>please (9) 31:5,7,15,19,22;32:3; 42:15;51:7;55:4</p> <p>pleased (2) 4:2;51:1</p> <p>Plumbers (3) 33:8,9,14</p> <p>pm (1) 12:10</p> <p>pm] (1) 86:19</p> <p>pocketbooks (1) 72:17</p> <p>podium (2) 2:19;31:6</p> <p>point (8) 4:21;7:4,14;9:3;10:17; 12:19;41:2;62:23</p> <p>pointed (1) 4:22</p> <p>poison (1) 84:12</p> <p>Policy (1) 85:3</p> <p>pool (38) 8:14,22;10:5,11,21; 11:4,7;14:4;15:6,7;19:2, 21;21:18,21;26:15,18; 27:3,12,18,24;32:18; 33:2;35:24;37:20,23; 38:18;39:3;40:13;44:24; 48:1,8;50:4;56:22;61:11, 24;74:13;79:2,8</p> <p>poping (1)</p>	<p>43:25</p> <p>population (2) 20:25;21:24</p> <p>port (3) 15:12,13,15</p> <p>portion (2) 16:22;48:12</p> <p>Ports (2) 18:17;70:4</p> <p>positive (1) 12:22</p> <p>possess (1) 37:4</p> <p>possibilities (1) 86:4</p> <p>possibility (1) 22:7</p> <p>possibly (1) 70:23</p> <p>post (1) 53:19</p> <p>postal (1) 12:4</p> <p>posted (1) 53:19</p> <p>poster (1) 44:15</p> <p>pound (1) 52:6</p> <p>pour (1) 79:15</p> <p>pouring (1) 78:13</p> <p>Power (5) 32:22;64:4,6;73:22,24</p> <p>powerboat (1) 57:19</p> <p>Practically (1) 62:13</p> <p>praise (1) 51:3</p> <p>predict (1) 79:10</p> <p>predicted (3) 5:11;6:12;26:5</p> <p>predicting (1) 5:15</p> <p>preferred (4) 5:2;6:8,10;7:2</p> <p>premise (2) 84:13,14</p> <p>prepared (1) 86:11</p> <p>present (5) 6:20,22;7:2;31:9;64:9</p> <p>presents (1) 7:11</p> <p>preservation (6) 28:20;34:24;35:2,11; 36:10,13</p> <p>preserve (3) 27:11;37:17;78:14</p> <p>President (2)</p>
--	---	-----------------	--	---	--

<p>14:2;51:24 pretty (4) 43:1;66:20;69:24; 83:19 previous (2) 24:21;56:9 prey (1) 83:13 price (2) 6:22;25:1 priced (1) 6:8 primary (1) 27:15 Prior (2) 59:20;82:17 privileged (1) 3:19 probability (2) 68:21;69:16 probably (6) 4:17;24:11;55:8;56:2; 57:11;84:23 problem (4) 4:17;16:16;63:3;74:7 problems (1) 17:3 proceed (2) 4:10;68:19 process (2) 16:11;17:14 production (1) 32:21 products (1) 32:21 program (3) 64:14,18,19 prohibiting (1) 28:12 project (6) 15:23;16:20;20:4; 25:10;27:24;39:15 projected (1) 6:14 projection (1) 33:25 projections (1) 21:4 projects (2) 20:24;76:23 project's (1) 22:4 promise (1) 63:7 properly (1) 63:5 properties (2) 36:14;37:1 property (15) 29:21;41:19,22;42:4,6; 45:22;48:21;60:18,19; 62:25;63:7;68:6;80:16, 25,25</p>	<p>property's (1) 67:25 proposal (1) 81:14 protect (1) 54:11 protected (2) 38:17,18 protection (2) 2:16;20:23 proud (6) 50:22;58:12,17,18,21; 70:11 prove (1) 24:2 provide (5) 24:24;31:4,14,23;73:11 provided (3) 22:19,24;23:17 provides (2) 11:14;22:1 providing (3) 12:8,13;20:20 provisions (1) 35:1 proviso (3) 28:12,18;58:9 public (8) 2:8;19:3;31:4,14; 43:16;45:8;50:12;82:4 pull (1) 8:18 purchased (1) 24:11 purpose (2) 68:24,24 purposes (4) 37:25;54:17,24,24 pursue (1) 22:12 pursuit (1) 69:5 push (2) 44:23;55:22 put (18) 4:17;7:18;8:15;16:21; 23:4;47:3;58:9;64:10; 67:23;71:13;73:10;79:12, 25;80:2;81:21;83:21; 84:8,14 putting (4) 23:5;28:5;82:9;84:2</p>	<p>68:9 quo (1) 26:2 quote (1) 28:19</p> <p style="text-align: center;">R</p> <p>race (3) 61:6,17,18 races (1) 57:19 rain (1) 79:16 rainfall (1) 79:17 rainy (1) 14:9 raise (6) 8:12,21;25:6;55:19; 56:21;80:22 raised (6) 34:6;42:20;49:8,15; 66:7;74:13 rally (1) 30:20 Ralston (1) 18:12 rambling (1) 56:3 ramifications (1) 43:14 ramp (4) 7:19;8:1;62:11,13 ramps (1) 62:10 ranking (1) 13:1 Rapids (1) 44:7 rates (1) 81:11 rather (1) 22:18 rationale (1) 71:17 reach (1) 8:18 reactors (1) 32:24 read (3) 25:18;32:9;81:17 reading (2) 59:25;66:2 real (5) 17:4;22:7;25:24;63:18; 69:11 reality (2) 21:17;24:8 really (14) 2:10;8:24;9:14,17; 10:1,6;24:6,16;45:18; 46:3;53:23;60:4,13;68:25</p>	<p>reason (7) 8:11;17:16;67:1;78:24; 79:5;80:1,2 reasons (2) 79:22;80:10 rebuilt (2) 73:1,17 recall (1) 70:25 received (1) 6:16 recent (3) 24:1;25:21;28:24 recently (2) 71:10;80:9 recognize (3) 3:4;25:12;55:17 recommend (1) 74:24 recommended (3) 5:23;11:6;35:11 record (6) 2:22,25;18:6;25:18; 32:9;74:22 recorder (1) 31:9 recreation (15) 21:22;27:4,19;32:19; 38:1,20;40:14;43:23; 47:2,20;56:25;57:17,21; 64:23;71:19 recreational (3) 28:5,22;48:21 recreationally (1) 62:3 redoing (1) 71:9 referenced (1) 86:8 references (1) 28:18 referred (2) 18:5,24 refers (1) 59:19 reflect (1) 21:16 regarding (1) 18:20 regardless (3) 6:21;46:14;47:2 regards (2) 25:16,20 regatta (4) 57:6,11;61:6,20 Regattas (1) 48:5 region (4) 48:10;49:2;75:20; 79:19 regions (1) 53:14 Register (4)</p>	<p>34:22;36:2,8,12 regular (1) 40:10 regulations (2) 8:12;20:8 rehab (1) 5:24 rehabilitated (2) 37:18;47:12 rehabilitation (2) 27:10;35:12 related (2) 56:11,12 relationship (1) 65:1 relatively (1) 66:15 relevant (1) 35:9 reliability (1) 26:8 relies (1) 21:7 rely (5) 19:21;32:17,20,22; 33:20 remained (1) 33:3 remaining (1) 80:5 remarkable (1) 12:18 remarks (2) 4:1;85:10 remember (2) 78:3;83:11 remove (1) 16:20 removes (1) 5:4 repair (6) 16:14,17;27:10;47:6; 71:21;82:23 repaired (5) 14:23;33:5;47:11; 72:21,22 repairing (2) 39:16;70:22 repairs (1) 4:19 repeat (2) 68:16;80:14 replace (2) 18:22;74:6 replaced (2) 73:1,17 replacement (1) 71:22 replacing (1) 74:2 report (2) 35:9;86:5 reporter (1)</p>
---	--	--	---	---

2:24 represent (8) 29:5;33:7;37:3,5;56:6; 58:7;72:13;86:17 Representative (4) 32:13;46:4;58:2,3 representatives (6) 3:20;10:15;38:11; 45:10;77:12;78:20 representing (1) 25:8 represents (2) 4:7;25:14 requesting (1) 27:1 required (1) 35:14 requirement (2) 27:23;36:7 requirements (1) 39:18 requires (2) 84:10,16 research (1) 43:2 reside (1) 49:9 residence (1) 32:4 resident (1) 32:15 resistance (1) 82:3 resolution (2) 27:1;39:1 resources (4) 20:22;35:1;54:12;86:2 respond (1) 7:7 rest (1) 58:10 result (2) 20:7;21:1 results (2) 13:25;26:18 retained (1) 7:9 returnee (1) 70:7 revealed (1) 6:6 revealing (1) 35:6 revenue (2) 34:2,6 review (1) 15:24 reviewed (1) 21:13 Richmond (4) 37:22;58:24;60:24; 70:8 Rick (3)	4:6;10:8;45:9 rid (3) 24:18;64:21;69:12 right (28) 9:5;13:17;17:18;20:1; 30:25;31:7;40:25;41:16; 43:10;47:16;49:15; 52:25;53:7;54:13;55:25; 57:24;67:8,15;71:3; 73:24;75:14,18,25;79:3; 80:8,21;84:17;85:18 rip (1) 83:3 rise (1) 79:17 risk (2) 28:6;83:22 risks (1) 27:13 river (101) 2:13;5:4;8:16;9:15; 11:2;19:4,15;22:1;23:1; 24:12;25:9,22;29:7,12, 16;30:7,9,22;32:16,17,20, 23;33:6,15,19;34:10; 36:23;41:10,12;42:22; 44:5,19;45:11,12,12,16; 46:1,21;47:8;48:4,17,19; 49:11;50:21;53:5;54:23; 55:8,11,19;57:12,18; 58:2;60:19,21,25;61:1, 11,12;62:2,6,8,21;63:11; 64:1,3,8,25;65:7,17,18; 66:18;68:8;69:3;72:6; 73:10;74:11;75:3,5,6,16, 16;76:8,8,20;77:1,13,17; 78:14,23,25;79:1,1,8,8, 14,16,21;80:8,9,18;83:18 riverfront (12) 19:8;24:10;27:7;28:7, 8;55:6;59:2,4;62:11; 67:17;72:13;74:16 Riverkeeper (5) 39:21;40:4;70:3;84:20; 85:6 Riverkeeper's (1) 40:8 riverkeepers (1) 45:23 River's (1) 20:13 riverwalk (2) 46:20;78:6 Riverwood (1) 74:19 Road (3) 34:13;52:12;76:19 Robertson (5) 7:8,12;18:8;77:6;85:24 rock (16) 5:4,6;7:19,22,25;40:20; 56:14;64:2,17,22;66:4, 13;67:7;69:22;73:9;	79:12 rocks (2) 7:23;8:15 room (4) 3:7;47:24;58:1;84:3 rope (1) 83:14 rostrum (1) 52:7 Rowing (5) 48:5;55:9;57:2;61:6,20 Roy (4) 9:18;17:5,8,11 rules (1) 31:2 run (3) 29:12,16;30:4 running (1) 47:21 Ruthven (1) 11:24 <p style="text-align: center;">S</p> sacrifice (1) 20:1 saddle (1) 77:21 Safe (2) 44:3,24 safely (1) 57:10 safety (3) 20:3;61:15,22 said (24) 9:20;13:19;14:3;16:13, 16,16;17:5,8;24:4;29:24; 33:12;39:2,11;46:8;56:4; 58:18;62:23;63:1,3,5; 68:16;74:1;77:10;80:13 salvage (1) 67:13 salvageable (1) 67:14 same (13) 14:8;21:21;22:20; 38:22;39:10;47:19;61:13, 20;64:5;66:15,15;68:14; 81:13 Sammie (1) 3:16 SANCKEN (3) 45:7,14,14 sat (3) 39:23;79:15,16 sausage (1) 82:19 Savannah (46) 9:15;11:2;18:20;19:4; 20:3,13;23:7,24;25:21, 23;26:24;28:15;32:16,17, 20,23;33:3,6;34:17; 35:12;36:6,19,23;37:10,	17;39:21;40:4,7;42:22; 44:6,19;46:3;47:9,22; 48:25;49:11;51:14;55:14, 19;57:18;68:23;69:3; 73:13;82:25;84:1,22 Savannah's (1) 20:17 save (9) 9:2;39:3;40:22;51:14; 55:13,19;64:16;70:16; 79:1 savings (3) 24:11;42:2,3 saw (9) 5:16;9:21;24:7,9; 26:10;39:8;48:19;52:5; 67:19 say (13) 7:4;15:22;47:3;48:16; 54:5;55:12;59:7;69:25; 72:8;80:17;84:9,15;86:15 saying (1) 55:16 says (7) 8:13;9:2;14:2;36:14; 38:17;56:8,8 SCHAEFER (2) 72:10,12 Schroeder (3) 78:18;80:6,7 science (1) 65:24 score (1) 39:10 scored (3) 5:22;6:5;22:20 Scott (2) 10:13;84:7 SCUBA (1) 60:24 Sean (1) 3:11 sear (1) 48:7 season (1) 14:9 seawall (2) 67:22;68:2 second (4) 7:21;49:20;61:17; 83:24 Secretary (1) 13:16 section (1) 73:12 security (1) 61:15 see (15) 9:14;12:16;19:17; 22:22;29:17;41:11;57:13, 14;67:1;71:1;74:12,15; 75:15;78:12;80:19 seem (1)	69:15 seen (7) 21:20;28:24;39:5;40:6; 41:15;42:22;75:4 seismic (1) 75:4 select (1) 37:16 Senator (5) 10:13,13;51:20;84:5,6 senators (3) 18:12,14;77:11 sense (4) 14:3;17:19,23;48:9 sensitive (1) 35:14 sent (1) 51:25 separate (3) 8:1;13:8;50:17 serious (3) 68:1,6;78:1 serve (2) 37:24;54:16 serves (1) 25:13 service (1) 19:23 Services (1) 13:2 set (3) 64:13;73:23;74:22 settle (1) 45:5 settled (2) 39:19;84:20 several (4) 54:5;62:10;66:13; 80:12 shad (1) 44:18 share (1) 2:8 sharing (1) 17:21 she (4) 16:1,7;56:2,4 She's (1) 56:1 sheets (2) 2:18;31:6 SHEP (4) 4:15;13:7;24:24;76:14 Shoreline (2) 45:15;82:7 should (13) 11:4,17;13:22;22:6,8; 26:4;40:23;42:6;44:9; 65:7;69:19;80:2;85:7 Sias (1) 3:16 side (7) 5:25;18:13;23:13;25:9;
--	--	---	---	--

29:7;39:17;64:5 sides (4) 14:8;66:12;72:5;77:12 sign (1) 49:23 signed (3) 2:20;50:6;51:22 significance (2) 34:19;35:22 significant (7) 28:2;35:16;36:16;37:6, 12,12;56:15 significantly (2) 19:9;46:19 sign-in (2) 2:18;31:6 sign-up (1) 78:17 silently (2) 22:12,16 Simkins (1) 9:18 simply (2) 11:12;39:17 simulate (1) 25:22 simulated (1) 26:3 simulation (4) 19:2,9,16;24:1 since (10) 14:5;16:2,2,2;19:22; 51:11;68:8,9;69:2;70:12 sinkhole (3) 75:7,8,9 sinkholes (1) 75:9 Sir (3) 40:16;51:6;69:17 sit (1) 75:3 sites (1) 36:3 sitting (5) 3:10;24:9;47:23;78:9; 79:2 situation (2) 18:19;51:11 situations (1) 66:21 slightly (1) 48:11 sluiceways (1) 66:10 small (1) 26:10 smaller (1) 61:21 Smith (4) 3:24;25:13;29:4,5 So (94) 2:20,21,22,22,25;3:7; 4:15;5:11,19;6:2;7:1,4,	17;8:2,6,8,15,19,23;9:3; 10:7;12:11,18;13:11,23; 14:10;16:3,24;20:3; 22:25;23:15,24;30:19,25; 32:15;33:22;34:8;38:21; 39:16;41:2;43:15,18,20; 44:4;45:3,17;46:12; 48:13,19,23;50:22;52:4, 25;53:8,9,22;54:15; 55:10;56:6,7,19;57:16; 59:4,11;60:20;61:21; 63:11;66:6,12,25;67:4,7; 69:24;71:16,19;74:6,9; 76:11,21;77:2;78:5,9,14, 21;79:24;80:9;81:11,13; 82:19,23;83:3;84:13; 85:18;86:9 socks (1) 78:2 solution (8) 26:17;47:16;48:7,24; 49:3;69:15,19,20 some (27) 6:15;13:25;14:17;15:8; 17:1;31:2;38:7,10;41:7; 53:25;54:6,15;55:10; 56:22;58:4,14,15;59:5, 10;66:17;68:1,6;69:1,13; 72:21;75:10;79:19 somebody (2) 41:9;60:10 somehow (1) 15:2 someone (2) 31:20;63:1 something (12) 6:23;40:7;44:10,22; 52:21,23;56:7;62:9; 63:23;70:25;72:1;85:3 somewhere (2) 4:5;69:20 sorry (1) 51:8 sort (2) 7:14;70:21 SOS (2) 51:14,23 South (23) 3:21;4:4;9:16;19:14; 23:20;28:11,12;34:20; 39:20;45:9;50:19;51:15, 16,20;52:16,18;58:10,12; 59:1,2,6,12;65:15 Southern (1) 32:22 spanning (1) 5:4 spawn (3) 69:9;76:14;83:16 speak (3) 2:24;31:7,20 Speaker (12) 18:12;31:15;32:10;	41:17,18,21,24;42:9; 45:13;55:3;74:1;77:9 speaking (2) 43:17;45:8 special (2) 9:7;21:23 specialists (1) 56:12 specializes (1) 86:1 species (7) 21:18;24:14;42:23; 44:14,17;54:4;68:23 specific (3) 38:16,22;66:3 specifically (1) 38:17 specifics (1) 40:19 speech (1) 85:18 spend (1) 72:18 spent (3) 27:5;38:25;71:9 spinning (1) 82:11 split (1) 75:11 spoke (1) 51:19 spoken (1) 14:15 stakeholders (2) 19:3,13 stand (2) 22:12;84:15 standing (2) 70:3,5 standpoint (1) 65:5 start (5) 3:8;38:6;54:3;55:12; 78:1 started (6) 3:3;24:4;29:19;44:20; 54:2;66:2 state (5) 32:3;36:9;50:4;53:13; 77:11 stated (1) 31:21 statement (1) 31:17 States (9) 13:5;17:3,7;18:21; 34:20;37:24;39:20; 52:14;77:3 stationed (1) 52:14 status (1) 26:2 stay (3)	14:22;61:11;63:12 stayed (3) 52:15,17;85:14 Steamfitters (2) 33:8,10 step (3) 9:4;12:7;20:10 Stephen (1) 78:18 STEPHENS (2) 67:16,17 steps (2) 85:20;86:5 Steve (3) 60:16;80:7;82:6 still (8) 2:21;21:20;40:13,14; 41:10;61:13;66:15;72:21 stocking (1) 21:17 stone (1) 82:24 stood (1) 22:16 stopper (1) 74:22 straight (1) 75:18 strategize (1) 10:10 stream (1) 80:20 Street (12) 5:12;11:2;34:16;49:16; 55:18;59:17;62:11; 63:15;64:1;68:12;70:11; 74:19 striped (1) 69:23 strong (2) 25:16;43:22 structure (6) 8:1;26:21;34:18;35:16, 21;66:3 structures (3) 36:4;37:14;66:9 stuck (1) 39:25 studied (5) 14:12,12,13;65:23;76:4 study (2) 35:17;66:19 stuff (5) 44:1;59:5;62:3;65:25; 69:2 stupid (1) 61:8 Sturgeon (6) 44:15;68:22;83:2,6,16, 21 subject (1) 60:9 submission (1)	86:11 submit (4) 23:4;25:19;35:20; 57:22 submitted (3) 32:8;52:2;57:23 subordination (1) 13:22 substantial (1) 47:23 succeeded (2) 69:20,21 success (1) 65:11 such (4) 12:22;37:18;48:5; 59:24 sue (1) 85:2 suffer (1) 75:9 sufficient (1) 28:20 sufficiently (1) 57:10 suit (2) 70:3,6 summarily (1) 8:8 summarizing (1) 35:5 superior (1) 8:24 supply (7) 21:15;27:19;28:21; 37:25;38:19;40:15;56:24 support (9) 21:21;22:17;32:25; 33:15;61:14;66:4,25; 67:4,4 supported (1) 27:10 supports (1) 75:22 supposedly (1) 72:2 sure (6) 2:20;18:18;30:3;45:3; 60:7;78:7 surface (4) 5:10;26:1,15;60:22 surgeon (1) 69:9 surrounding (1) 35:19 Survey (1) 11:1 survive (1) 54:13 survived (1) 68:9 Susan (1) 45:24
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<p>sustain (2) 54:9,13</p> <p>swim (2) 76:11;83:8</p> <p>swimming (1) 60:22</p> <p>switch (2) 56:13,20</p> <p>sworn (1) 10:3</p> <p>Syms (3) 49:6,6;50:14</p>	<p>terms (1) 86:3</p> <p>test (1) 30:2</p> <p>text (1) 3:1</p> <p>than (13) 5:10,17;22:23;26:5; 31:13;43:13;46:8;53:8,9, 11;73:21;76:22;81:18</p> <p>thank (50) 4:9;7:12;9:4;12:24; 13:12;17:15,20,20,23; 18:3;23:11;25:1;29:3; 30:23;32:4;34:10;38:2; 45:6,7,8,9,10,23;47:12; 49:5;50:12;51:1;52:9; 54:25;55:1;57:23;58:5; 59:14;60:14;63:12;67:15, 18;68:10;70:15;72:9,10; 74:16;76:16;78:19,21; 80:3;82:5,8;85:7,13</p> <p>thanks (2) 17:11;59:15</p> <p>that (314) 2:7,13,25;3:2,4;4:18, 20,22;5:9,11,21;6:3,6,19, 21,23;7:4,4,7,11,14,15; 8:6,8,11,11,18,23,25;9:1, 2,3,21,23;10:2,3,6,8,9,17, 18,21;11:8,12,14,16,18, 20,22;12:3,4,6,11,13,13; 13:19,21,24,25;14:12,12, 13,15,20,21;15:1,3,7,7, 12,15;17:18;18:1,5,18, 24;19:5,8,10,15,22,25; 20:3,7,9,19;21:1,5,13,19, 20;22:1,7,10,11,17,19; 23:3,5,17,25;24:2,4,7,8, 13,22;25:25;27:1,23; 28:16;29:7,12;30:5,7,9, 19,21;33:2,12,14,19,19, 23,24,25;34:3,3,10;35:9, 15,20,21;36:10,14,14,15; 37:1,3,4,5,17,19,19,20,21, 21,23;38:7,12,15,16,17, 21,21,23;39:1,2,5,19,23; 40:23,24;41:3,7,10,18,21, 23;42:4,5,17,23;43:20, 23;44:3,4,9,9,10,21;45:2, 4;46:5,13,17,17,18,20,22; 47:6,19;48:24;49:23; 50:4,5,21,23;51:12;52:7, 22,24,25;53:2,6,8,9,11, 20,24,25;54:16,20,21,22; 55:14,15,17,21,22;56:5, 13;57:6,13,16,21,22,25; 58:9,9,14,16;59:5,20; 60:2,13;61:14,19,21; 62:6,6,6,16,20,23,25; 63:7,11,19,24;64:6,18; 65:2,6,10,24;66:5,6,22, 24;67:6,7,23;68:17,18,18,</p>	<p>19,24,25;69:7,11,13,14, 15,22;70:9,19,20;71:2; 72:1,18,20;73:10,21,22, 23;74:6;75:1,1,17,22; 76:2;77:9;78:5;79:12,16, 18,21;80:12,25;81:1,4,12, 17,18;82:21;83:20;84:16, 23;85:20;86:1,2,12,13</p> <p>that's (29) 6:21;8:23;13:10;17:15, 22;18:1,7;39:5,15;42:4; 43:4,10,15;44:1,10,21; 54:14;61:1;62:18;64:4; 69:18;72:25;74:3,5; 77:24;78:6;83:23;84:9,16</p> <p>that's (12) 7:9;34:5,6;40:2;43:10; 54:14;61:24;63:3;65:4; 68:1;75:16;81:13</p> <p>the (862) 2:3,9,9,10,13,16;3:1,4, 6,10;4:12,15,16,18,23,23, 24;5:1,1,4,5,7,10,11,12, 19,24,24,25;6:3,4,6,9,11, 11,16,17,21,22,25;7:10, 15,20,20,21,21,21,25;8:1, 3,3,6,8,9,10,11,13,13,14, 15,16,16,17,19,19,21,22, 23,24,24,25,25;9:1,2,14, 15,18,19;10:3,4,5,5,9,11, 12,15,17,18,18,19,20,20, 21,22,22,23,24,25;11:1,2, 2,4,6,7,13,13,14,15,16,18, 19,20,20,25;12:3,6,9,11, 12,14,14,21,22;13:1,5,6, 7,8,10,10,15,16,16,17,19, 20;14:2,5,7,8,9,11,11,14, 19;15:1,5,5,6,6,13,13,14, 15,16,17,19,23,24;16:1,2, 7,9,10,12,13,14,14,16,17, 17,20,21;17:1,2,3,6,6,7,8, 10,16,17,25;18:6,7,8,12, 16,16,19,20,21,22;19:1,3, 3,4,6,7,9,10,12,12,12,15, 15,15,17,19,21,22,23,24; 20:3,9,10,10,11,13,16,18, 19,23,25;21:6,8,9,10,17, 21,25;22:1,7,9,10,15,18, 20,21,22,24;23:9,11,11, 13,16,19,20,21,25;24:1,2, 4,10,13,16,17,18,19,20, 22,24;25:1,3,6,9,14,16, 18,19,21,21,22,23,25; 26:1,1,3,4,8,11,11,13,14, 15,18,20,22,23,23,25; 27:1,2,2,5,6,9,10,12,15, 16,17,18,18,20,23,24,25, 25;28:2,7,10,12,15,16,18, 18,19,24;29:2,7,10,11,16, 17,18,23,24,25;30:2,2,5, 11,12,14,16,17,17,20,23, 23;31:3,5,8,15,18,22,22; 32:2,4,9,16,17,20,21,22,</p>	<p>25;33:1,2,3,4,4,5,12,15, 15,22,24;34:2,4,9,10,14, 17,19,20,22,24,25;35:1,5, 5,9,12,13,15,17,18,19,20, 21,24;36:2,5,7,7,9,10,11, 12,15,16,18,19,22,22,23, 23;37:1,4,9,10,15,16,17, 20,24,24,25;38:7,11,12, 13,15,17,18,22,22,24,25; 39:3,3,5,7,8,9,10,11,12, 13,14,14,16,18,18,22,25; 40:3,7,13,19,20,22,23,25; 41:5,8,11,11,14,15;42:21; 43:12,14;44:5,5,7,8,13, 15,25;45:4,11,12,12,22; 46:1,2,2,3,5,5,12,17,18, 22,22,23,24,47:6,8,11,11, 18,19,22,22,23,25;48:1,2, 4,5,5,7,8,9,13,13,15,15, 17,19,23,23,24,24;49:2,3, 10,15,16,18,20,20,24; 50:3,4,5,5,9,11,21,22,23; 51:3,12,19,20,22,23;52:2, 2,3,4,7,7,8,8,14,24,24,24; 53:2,5,6,10,13,14,16,18, 23,25;54:23;55:2,7,9,11; 56:5,9,13,14,14,16,17,18, 19,20,23,23,24;57:2,3,4, 5,8,9,13,18,18,19,23; 58:1,2,9,10,11,19,23; 59:18;60:18,21,22,23,25, 25;61:1,1,5,6,8,11,12,12, 12,13,14,17,18,20,20,21; 62:1,7,12,17,21,22,23; 63:1,2,5,8,12,15,21,22, 25;64:1,2,2,5,5,8,9,10,10, 11,11,12,14,14,15,18,21, 21,25,25;65:1,18,21,25; 66:4,6,11,11,12,12,12,15, 15,18,20;67:1,5,5,10,13, 14,20;68:2,3,7,14,17,17, 18,18,20,21,22,22,24,24; 69:3,3,4,5,6,7,7,9,10,11, 12,16,22,24;70:2,4,6,12, 12,16,18,19,20,21,22,23, 23;71:8,14,16,20,21,23, 23;72:1,4,5,6,14,14,16, 20,20,23,24;73:1,5,10,12, 15,16,19,25;74:1,2,2,8, 10,11,13,14,21,25;75:3,3, 5,16,16,18,19,20,22,22, 23;76:1,1,3,5,7,14,14,20, 77:5,6,8,9,13,13,18,21,23, 24;78:4,4,5,17;79:11,11, 17,18,19,22,23,24,25,25; 80:2,8,9,10,15,18,19,21, 23,24;81:5,9,10,10,13,15, 15,16,19,20,23;82:4,12, 19,19,20,25;83:2,3,7,10, 13,14,18,21,24;84:1,1,2, 8,8,9,10,12,13,14,16,18, 19,21,25;85:2,5,15,15,17; 86:4,7,7,8</p>	<p>their (40) 5:2,15,23;6:2,6,13;7:1; 16:11;19:20;21:8,14; 22:2,3,6,7;23:23;30:6,6; 31:16,17;32:21;39:4,13; 41:7,10;45:19,20,21; 46:9;53:19;69:4,20; 72:19;73:9,25;74:3; 77:22;78:2;85:6;86:5</p> <p>them (28) 14:25;18:9;32:9;34:8; 40:9,10;53:3,21;58:12; 64:11,15;65:23;66:20; 67:1,3;72:21;73:20;78:1, 8,11,15;80:14;81:11; 83:8,10,12,21;85:2</p> <p>themselves (2) 22:19;82:5</p> <p>then (19) 5:6;7:21;8:17;9:11,12, 23;10:1;12:3;21:20; 26:19;29:1;54:12;57:13; 68:9;69:8,24;81:8,12,15</p> <p>there (43) 4:6;14:7,17,20;17:6; 22:23;24:5,21;26:6;39:9; 40:1,1;41:25;43:8;44:7; 49:3;53:10;55:16;56:15; 57:16;58:13;59:20;61:4, 9,14,16,22,23;62:2,10; 68:1;73:19,21;79:3,22; 80:1,8,19,21;81:2,21; 82:2;85:20</p> <p>there's (15) 2:19;10:8;29:24;33:24; 34:5;41:2,6;57:17;61:8; 62:5,9,10;76:7;83:18; 86:14</p> <p>there's (7) 34:1,3;38:15;66:5; 68:6,7;80:12</p> <p>these (19) 17:1;18:4,10,16;21:3; 25:6;26:8;30:21;35:10; 38:9;39:23;40:6;45:2,18; 46:6;53:22,25;57:20;76:4</p> <p>they (87) 4:24;5:14,21;6:6,12,14; 7:16;10:14;15:1,22; 16:12,13,16;21:12;30:1, 4;31:16;33:25;34:1,2; 39:2,4,9,41;8:44;8:45;20; 46:5,6,8;48:16;49:25; 51:21,24;52:7;53:2,5,19; 54:5;56:13;57:3,15,15; 60:5;61:15;62:21;63:3,4, 5;67:6;68:8,10,17,19,20; 69:23;71:6,6,7;72:24; 73:3,4,4,5,6,7,8,10;74:5; 76:4;80:17,22;81:22,25, 25;82:1,22,22,23,25;83:9, 11,11;84:9,14,15,20;85:6</p> <p>they'll (1)</p>
T				
<p>table (8) 8:25;53:10;54:1;75:14, 15,17,17,21</p> <p>take (7) 21:11;39:7;46:24; 53:24;54:21,23;64:14</p> <p>taken (1) 12:7</p> <p>takes (1) 73:12</p> <p>taking (1) 55:2</p> <p>talk (2) 23:18;71:18</p> <p>talked (1) 56:10</p> <p>talking (4) 23:21;30:10;33:17; 44:15</p> <p>taller (2) 66:6;67:7</p> <p>tax (2) 75:1;81:1</p> <p>taxes (2) 81:2,3</p> <p>taxpayer (1) 60:20</p> <p>taxpayers (2) 26:20;62:18</p> <p>team (5) 18:7;60:24;85:22;86:2, 10</p> <p>tear (1) 5:25</p> <p>technical (2) 85:22;86:10</p> <p>technology (2) 54:16,22</p> <p>Telfair (1) 68:12</p> <p>tell (10) 13:1;16:24;17:4;49:13; 58:11;60:6,11,15;65:21; 79:12</p> <p>tens (1) 33:17</p> <p>term (1) 48:13</p>				

69:8 they're (10) 6:18,25;48:16;49:25; 67:2;81:24;82:10;83:25; 84:18,25 They've (6) 21:12;46:13;66:9; 69:13;73:8;82:4 they're (5) 33:23;56:20;62:14; 84:2;85:4 they've (2) 45:20;73:20 thing (18) 14:6;15:16;16:2,6,22; 23:9;30:23;45:19;55:13; 62:1;67:8,15;69:25; 71:20;81:14,15;84:18,25 things (14) 2:13;38:7;45:2;46:17; 52:20;54:9;56:3;57:21; 61:5;62:5,5;68:15;71:22; 83:14 think (30) 2:18;6:21;8:23;13:21; 14:16;23:12;29:10; 30:19;38:21;41:8;44:9; 46:17;23;47:10;57:4; 58:19;60:12;66:5,17; 67:22;68:8;71:8;77:9,14, 19;82:2;83:5,15,20;86:13 think's (1) 62:16 third (1) 81:17 this (130) 2:3,4;4:1,10,16,18,22, 24;5:3,15;6:16,19,25; 7:13,17;9:24;11:9;12:15, 18,21;13:5;14:3,5,6,9,18; 15:2,16,20,25;16:1,1,2,6, 11,19,20,21,25;17:12,14, 18,21;18:14;21:10,19, 22;13,25;23:23;24:15,16; 25:9,20;26:6,15,19,21; 27:20,22;29:1,9,13,16; 30:12,19,22;34:6;35:6, 24,24;36:20;37:11;39:1, 15;40:11,18;41:6,25; 42:5,14,25;43:9;44:16; 45:16,22;47:3,4,10; 48:19;49:13,14,50:15; 51:11;53:19;54:2,17; 55:18,22,24;57:8;58:19; 60:9,12;61:16,17;62:2; 63:4;65:16,21;66:3;67:8; 69:2,25;71:2,7,9,15; 72:11,24;73:3;74:14,25; 76:16;77:17;78:12; 79:12;80:23;81:14;82:9; 84:3 Thomas (1) 52:11	those (25) 2:16,25;3:9;7:18,24; 8:2,5,7,9;14:16;16:23; 20:5;23:6;38:18,21; 43:14;45:5;48:14,18; 54:8;57:20;64:7;75:23; 79:24;85:14 though (3) 24:20;62:1;69:10 thought (4) 6:19;27:15;44:21; 55:14 thousand (1) 20:16 thousands (4) 29:6;30:5;43:3;57:14 threatened (1) 51:12 three (3) 31:14;42:15;57:20 threshold (2) 36:20;37:11 thriving (1) 44:18 through (12) 5:7;8:4;12:9;17:13; 35:25;47:25;66:11,12,17; 75:10,20;76:5 throughout (2) 21:8;42:23 Thurmond (1) 74:4 Thus (1) 48:7 Tim (2) 10:13;84:6 time (23) 6:6;13:3;15:21;25:5; 31:16,18;38:25;51:12,19; 54:21;55:2;63:4;70:1; 75:3,5,6;76:17;77:18; 78:20,21;82:21;83:16; 85:15 times (3) 29:15,21;58:20 tired (1) 14:1 to (446) 2:3,22,23;3:4,19;4:2, 15,20,25;5:13,14,23;6:13, 16;7:4,6,7,10,14,15,19, 22,25;8:18,21,22;9:2,3,6, 10,14,17,17,19,22;10:2,7, 7,11,12,21,25;11:18,22, 23;12:5,8,14,19;13:1,11, 15,17;14:2,14,19,20,22, 23,23;15:11,12,12,14,15, 19,22,23,24;16:4,10,10, 13,14,14,15,17,19;17:17, 22;18:1,3,5,10,10,12,15, 16,22,24;19:2,4,17,21,25; 20:1,17,19;21:11,19,21; 22:3,13;23:4,12,16,17,18,	22;24:2,2,13,14,18,20,22, 22;25:5,7,8,9,10,12,16, 18,19,20,22;26:2,19,20; 27:11,12,12;28:8,25; 29:2,9,13,14,15,17,22,23, 25;30:2,12,15,16,20,22, 23,23;31:1,2,4,6,7,8,10, 10,12,14,18,20,23,24; 32:2,8,16;33:1,13,22; 34:8,8;35:18;36:4,16,18, 22;37:9,15,16,19,23,23; 38:6,9,22;39:2,7;40:12, 22,23,24;41:2,4,6,7,9,9, 10;42:6,7,15;43:6,6,7,13, 17,20;44:2,4,8,9,12,13, 17,18,22,23;45:3,5,11,16, 21,21;46:10,14,15,16,25; 47:3,5,9,11,17,24;48:7,9, 12,14,17,18;49:3,5,12,20; 50:2,11,12,14,24;51:18, 24,25;52:2,7,8,13,19; 53:7,17,24;54:8,9,10,11, 12,16;55:2,12,20,23,23; 56:2,4,12,14,16,20,20,21; 57:9,9,10,12,13,14,15,22, 22,23,25;58:3,4,13,20,25; 59:1,3,6,19,20,24;60:1,1, 4,9,12,15;61:4,10,11,15, 23,25;62:7,14,15,15,16, 17,18,24,25;63:2,9,10,11, 12,17,19,24;64:1,7,10,14, 18,20,21;65:1,6;66:5,13, 14,16;67:10,12,24,25; 68:2,4,5,16,20;69:6,8,11, 12,25;70:3,5,7,15;71:7; 72:8,18,19,23;73:4,4,6, 10,14;74:3,6,10,12,14,15, 23,24;75:9,11,12,15,15, 19;76:13;77:19,24,25; 78:4,11,12,13;79:1,7,8, 13;80:9,13,15,18,19,24; 81:4,13,20,23,25;82:2,5, 15,15,17,18,22,23,25; 83:3,5,16,17;84:11,13,19, 19,21,25;85:1,1,2,4,4,13, 15,15,17,18,21;86:5,15, 16,17 Tobacco (1) 52:12 today (14) 2:3,17;3:2,5;9:1;11:5; 17:16,17;23:18;33:7; 45:11;52:6;70:20;78:20 Todd (5) 32:6,6,7,11,11 together (9) 9:16;30:20;45:6;50:24; 51:5,16;52:6;58:20;77:4 told (5) 9:20;23:2,3;38:12; 70:18 Tom (7) 4:12;7:8,12;18:8;	75:18;85:23,24 tomorrow (2) 10:16;59:9 tonight (3) 12:12;18:4;78:24 too (5) 47:14;51:3;59:14; 61:10;62:9 took (3) 9:19;46:5;78:7 top (4) 7:20;13:17;79:25; 80:24 topic (3) 2:5;42:15;43:9 topics (1) 10:3 total (1) 59:23 totaled (1) 26:4 touch (2) 4:18;44:12 tourism (4) 27:4;44:1;46:18;53:12 town (1) 67:10 train (2) 49:10;67:9 transplants (1) 59:22 Transportation (2) 13:8;36:21 travesty (1) 43:11 Treatment (1) 26:12 tremendous (3) 2:14;30:1,8 triathlon (2) 57:4,20 truck (1) 75:6 true (1) 74:3 trust (4) 16:11;34:3;48:15;60:3 truth (1) 65:21 try (4) 43:6,7;47:3;86:16 trying (4) 7:6;58:13,25;80:13 Tuesday (1) 12:9 TV (1) 67:23 two (23) 4:3;7:16,24;8:7,7; 13:20;18:12;21:18;23:3; 45:5;49:24;50:17,22,25; 59:20;67:12;77:2,3,3,11, 13;80:4;82:24	type (2) 37:2;65:24 <hr/> U <hr/> unacceptable (3) 19:24;22:5,11 under (8) 13:5,8;15:18,20;27:16; 35:1;36:12,25 undergraduate (1) 42:24 understand (9) 10:17;12:17;14:20; 23:25;34:3;41:6;70:2; 71:20;80:22 understanding (1) 25:25 unfeasible (1) 41:9 unforeseen (1) 77:20 unfortunately (3) 23:13;50:16;69:14 unify (1) 43:6 unintended (2) 29:11;30:17 Unit (2) 59:17;76:9 united (7) 12:21;13:5;17:3,7; 18:21;37:24;52:14 University (1) 42:25 UNKNOWN (8) 32:10;41:17,18,21,24; 42:9;45:13;55:3 unless (2) 82:15;85:5 Unlimited (1) 39:22 unmitigated (1) 48:20 unquote (1) 28:22 until (2) 29:11;31:15 untruthful (1) 13:20 unusable (2) 62:14;63:8 up (39) 3:10;7:16;9:10;15:22; 17:6;35:25;39:9;41:12; 42:17,21;43:25;44:2,6, 12,20;47:9;50:15;51:22; 52:22;56:8;64:1,7,13,15; 65:7,18;68:7;69:8,9; 73:23;74:5;75:19;76:11; 77:5;81:18;83:2,18,22; 84:23 upfront (1)
--	--	--	---	---

<p>82:1 upgrades (1) 4:20 upper (1) 36:23 up-river (1) 76:2 upstream (5) 7:23;20:6;33:2;34:4; 64:19 upwards (1) 72:19 urge (1) 37:15 us (44) 2:15,25;3:5;4:1,3;8:7; 11:1;15:11;17:13,21; 20:5;22:19;23:6,17;24:2; 28:25;30:22;33:13,25; 37:15;38:12,21,25;40:5, 13,21;43:7;46:5,13; 48:18;56:4,6,9;60:6,6,14, 15;65:6;68:2,18;77:21; 79:25;82:16;86:4</p>	<p>48:2;52:21;53:4,8,12; 54:9;65:11 viable (5) 48:10,25;49:4;53:20,21 view (1) 80:19 views (1) 2:10 Village (2) 28:8,9 violating (1) 85:2 visit (1) 10:15 visitation (1) 65:2 visitor's (1) 63:21 volunteer (3) 40:10;43:2,3 vote (1) 15:4</p>	<p>53:20,21;55:14,16;56:12, 22;58:9;62:25;63:5,6; 66:22;68:2;71:2,9;76:25; 84:7;86:7 Washington (4) 9:24;51:18;59:11; 77:22 washout (1) 76:8 wasn't (1) 66:24 Wastewater (1) 26:12 watched (2) 79:15,16 water (54) 5:10,12;10:19;11:1,16; 14:4,8;15:3;19:22;20:10, 13,17,21,21;21:2,9,15; 22:2;24:10;26:1;27:4,16, 19;28:17,21,21;32:18,18, 21,23;33:10,13,14,15; 35:20;36:22;37:25; 38:19;40:14;41:25; 46:24;47:4,4,21;56:22, 24;62:22;64:15;75:14,17, 17,21;80:24;86:2</p>	<p>10,11;47:3,6;48:15; 49:24;50:15,16,17,18,23; 51:12,14,21;52:5,22,23; 53:24;54:3,7,7,8,10,10, 11,12,18,21,22;55:13,20, 23;56:21,21;57:2,6,8,10, 11,19;58:13,15,20;59:5,9, 11,20;60:6,6,7,7,13,14, 15;61:10,12,23;62:4,7, 24;63:11;64:10,12;67:2, 3,21,24;69:6,7;72:3,15, 18,23;73:17,18,21,22; 74:12,13;75:4,5,6,21,21, 25;77:2,3,15,19;78:5,12, 13;79:1,7,8,11,12,13,19, 22;80:2,4,18,18;81:4,7; 83:3;85:7,12,16,18,21,21; 86:5,13,15,17 We'd (5) 72:25;73:1,2,7;74:13 we'll (3) 3:1;83:3;86:9 We're (14) 2:6;3:19;7:5;15:10; 17:8,9;21:5;30:15;33:17; 43:21;46:25;59:21; 73:15;74:7 we've (4) 9:25;13:23;28:24; 59:22 weather (2) 79:11,11 website (2) 53:19;81:16 week (3) 6:16;49:19;53:20 weir (15) 5:3,6;7:11,22;18:23; 19:2;40:20;56:14,16,20; 64:22;66:4,13;67:7;79:13 welcome (1) 2:2 welfare (1) 20:3 well (23) 3:23;4:8;8:2;15:10; 16:16;34:10;35:7,23; 37:14;46:3;48:4;54:7; 55:18;57:4;62:24;65:17; 68:9;70:7,23;72:2;74:3; 86:1,12 We'll (6) 4:10;32:5;48:14;59:5; 85:10;86:16 well-being (1) 22:9 went (7) 13:17;15:2;51:18,24; 65:9;78:4;82:20 were (17) 5:15;7:24;22:24;27:7; 39:2;46:1,9;50:17,18; 51:12,21;68:19;72:20;</p>	<p>81:25;83:6,9,11 we're (14) 7:6;13:23,24;16:6; 17:18;30:10;44:14;58:13, 16,25;59:11;71:3;81:20; 82:11 we've (3) 14:4,15;17:22 what (69) 2:10;4:24;5:1,14,16,19; 6:3,4;7:16,24;9:1,6,21; 11:5,9,17,21;15:11,15; 19:16;22:24;23:21;24:7; 26:7,10;28:24;29:1,17; 30:21;31:1,2;39:3;46:8,8; 47:2,16;48:23;49:17; 52:4;54:7,10,11,11; 56:21;58:13,25;59:13; 60:1,6,15;64:24;67:19, 25;68:16;71:14;72:2,4; 74:14;77:4;81:1,7,22,23, 24;82:1,12;84:9,16;86:4</p>
W				
<p>use (11) 31:18,22;32:19;53:2; 64:24,25;73:7,9;75:25; 76:7,13 used (7) 7:24;24:14;44:18; 45:11;64:10;75:1;82:17 user (1) 65:17 users (1) 27:3 uses (3) 20:22;38:18,19 using (1) 6:18 Utilities (4) 4:13;27:4;33:12;85:23</p>	<p>walk (1) 64:2 wall (4) 62:22;63:2,5;76:8 walls (1) 29:18 want (48) 10:6;11:22;12:19; 14:14;15:11,14,15;16:4; 17:25;18:3,10;19:16; 23:18;25:12;28:8;34:8; 38:6;41:7;44:8,12,23; 45:3;47:9;55:12;56:21; 58:3;59:3;68:15;72:24; 73:6,10;74:12,13;75:15; 78:11,12;80:18;82:1,21, 22,22,25;83:5,17;84:11, 12;85:13,21 wanted (7) 2:22,23;18:15;39:3; 41:2;57:22;72:8 wanting (1) 24:18 wants (2) 29:2;40:12 warehouse (1) 62:12 was (70) 4:15,17,18;6:8,10,11, 15,19;7:18,18,22,24;9:17, 18,20;10:2,4,23;11:9,10, 21;15:1,7;16:13,15; 19:11,16;22:19;24:1,7,8, 21;25:24;26:5;29:18,25; 30:4;34:21;35:17,21; 37:21,21;38:23;39:12,19; 42:20;46:7;48:20;49:11; 50:6;51:25;52:1,14;</p>	<p>waterfront (1) 72:5 Waters (5) 45:25;47:14;51:9; 59:21;62:12 waving (1) 61:2 way (30) 6:25;7:21;8:19;12:22; 15:25;17:1,10;35:16; 37:18;38:12;39:5;41:8; 44:7;47:10;51:11;53:15; 56:13,19;67:6,11;68:18; 69:11;75:19,19;77:24; 79:13,19;83:7,10;84:23 ways (4) 8:20;12:4;66:5;73:19 We (233) 2:2,7,8,15,17,18,21,22, 24,25;3:3;4:2,9;5:8,16; 7:15,15;8:23;9:6;10:3,12, 17;11:8,20,24;12:3,4; 13:6,14,17,17,21,24;14:4, 10,15,16,17,19;15:8,12, 14,15,19,23;16:9,17,19, 19,20,22;17:9,9,15; 19:16;22:11,12,17,24; 23:1,1,2,2,3,3;24:5,7,9; 26:7,10,13;29:10,15,16, 21,23;30:8,11,11,19,22; 31:8,9;32:17;33:16,16, 20;34:3,8;35:20;37:15; 39:6,7,25;40:23,24,25; 41:11;42:14;43:11,20,24; 44:2,10,11,13,16,18,20, 22,23;45:5,5,17;46:1,9,</p>	<p>we're (14) 2:6;3:19;7:5;15:10; 17:8,9;21:5;30:15;33:17; 43:21;46:25;59:21; 73:15;74:7 we've (4) 9:25;13:23;28:24; 59:22 weather (2) 79:11,11 website (2) 53:19;81:16 week (3) 6:16;49:19;53:20 weir (15) 5:3,6;7:11,22;18:23; 19:2;40:20;56:14,16,20; 64:22;66:4,13;67:7;79:13 welcome (1) 2:2 welfare (1) 20:3 well (23) 3:23;4:8;8:2;15:10; 16:16;34:10;35:7,23; 37:14;46:3;48:4;54:7; 55:18;57:4;62:24;65:17; 68:9;70:7,23;72:2;74:3; 86:1,12 We'll (6) 4:10;32:5;48:14;59:5; 85:10;86:16 well-being (1) 22:9 went (7) 13:17;15:2;51:18,24; 65:9;78:4;82:20 were (17) 5:15;7:24;22:24;27:7; 39:2;46:1,9;50:17,18; 51:12,21;68:19;72:20;</p>	<p>what's (4) 16:16;47:16;68:4; 70:20 whatever (4) 43:11;44:11;61:10; 63:11 what's (2) 67:14,14 whatsoever (1) 14:21 wheels (1) 82:12 when (22) 8:19;10:2;19:23,23; 23:16;30:4;32:2;33:23; 39:8;48:16;51:21;61:2; 62:21;63:4;65:20;67:20; 71:2,6;75:21;77:23;78:3; 81:9 whenever (2) 52:13,25 where (12) 7:15;17:15;52:1;56:21; 57:9,12;64:2;65:7;66:10, 21;71:16;83:11 whether (3) 54:3;67:11;73:17 which (23) 4:22;5:8,23;6:24; 10:23;11:5;12:7;17:2; 22:20,22;26:14;34:15; 36:5,25;39:11;40:12; 48:25;55:6,7;59:18;63:6; 73:13;74:15 while (4) 35:13;65:10,17;77:5 white (1) 50:4 whitewater (2) 40:22;45:1 who (34)</p>
V				
<p>value (7) 6:20,22;7:2,16;80:17, 25,25 values (1) 37:5 varies (1) 11:3 various (1) 37:14 very (37) 2:4,7;9:23;13:2,20; 17:24;21:19;22:7;25:7, 15;29:3;38:2;39:11;41:9; 43:17;45:8;49:17;50:22, 22,25,25;51:1,1;52:4; 58:1;59:14;60:14;61:7; 65:6;67:13;72:25;74:4, 16;75:2;80:3,10;85:8 viability (7)</p>				

<p>2:23,23;3:5;4:7;7:8; 9:18;12:12,20,22;17:6, 12;18:13;20:6;25:13; 32:15;43:9;44:4;47:8; 48:19;51:22,24;52:5,6; 53:16;60:1,8;62:15;74:9, 22;80:17;84:7;85:14,23, 25 who's (3) 18:9;40:11;82:10 whole (1) 43:21 whom (1) 3:25 whose (1) 37:7 why (13) 8:23;39:15;42:6,9; 43:15;63:6;64:12;67:1,3; 79:22;80:2,22,23 wide (1) 14:10 wider (1) 57:12 Wiedmeier (6) 4:12,14;18:8;33:11; 77:7;85:23 wife (1) 59:19 WIIN (13) 7:18;9:1;10:20;11:13, 20;24:16;27:17,23;38:13, 15,24;50:3,5 wildlife (1) 54:8 WILHELMI (2) 76:18,19 will (47) 3:7,8,25;10:14;12:13, 14;14:20;16:19,21,22; 18:4,6;21:2,14;22:11,12; 23:4,22;24:24;26:20; 28:3;29:13;31:13;37:17, 19;40:21;46:19;47:5,20; 49:23;50:4;58:14;59:11; 61:13,21;63:9;75:24; 76:11,14,14;77:7,25; 78:17;80:25;81:2;86:3,10 Williams (3) 3:13,15;70:11 WILLIFORD (2) 65:13,14 willing (2) 41:4;82:15 Wilson (4) 4:4;9:9,13;84:7 wind (1) 53:23 with (88) 2:8,14,24;3:3,5,8;4:3, 10,18;5:3,6;7:5,16;9:18; 10:13;12:2,11,12;13:3, 16,20,22;14:15,16,18,25;</p>	<p>15:18;16:6;17:21;18:6,8, 22,23;21:18;22:25;24:11; 26:14;28:4,16;29:3;35:8; 36:15,21;39:2,25;42:3,7, 22;43:7,14,18;45:22; 46:2,12,24;47:18,21,22, 24;48:20;51:19;52:14; 56:9,10,14;57:2;58:10, 20;59:9;60:5;61:5,20; 62:20;64:25,25;67:5; 68:21;69:16;72:16,24; 74:7;76:10;77:9;81:14, 16,18;82:24;86:13 withdrawal (1) 21:22 within (3) 11:13;48:10;49:2 without (5) 20:5;24:12;33:10,14,15 witnessed (1) 26:13 won't (4) 57:10;61:15,23;69:23 wonderful (2) 9:25;17:13 wonk (1) 23:16 words (2) 15:1;56:19 work (15) 10:13;13:10;17:11,13; 18:7;25:10;37:4;40:9,21; 43:2,3;44:10;58:20; 75:15;83:19 worked (4) 40:2;45:21;76:22;78:3 workers (1) 33:20 working (9) 13:4;40:4;58:16;59:12; 67:5;69:2,5;73:2;77:4 works (2) 14:6,10 world (1) 61:18 worth (1) 77:14 would (45) 3:4;5:9,12,17,25;6:12; 8:2;9:9;11:7;15:7,8;19:8; 21:16;24:3,5;27:22;29:9, 17;30:5,7;31:1,9,23; 33:22;35:15,24;39:4; 40:12,21;44:4;45:2; 47:10;52:19;56:13,15; 57:11,16;60:8;69:15; 74:15;82:2;83:8,12,19; 86:15 would've (3) 30:1,3;84:22 wouldn't (3) 24:5;57:15;71:15 wouldn't (1)</p>	<p>12:19 write (1) 60:7 written (3) 31:23;56:8;60:9 wrong (3) 19:11;84:14,18 X X'd (1) 8:8 Y y'all (14) 14:7;32:1;41:16;51:1; 58:5;59:13;60:21;61:2; 62:6;63:13;65:13;66:2; 70:15;84:8 y'all (1) 66:18 yeah (5) 13:17;14:4;41:20;58:5; 61:12 year (13) 6:12,14;19:18;21:5; 26:25;49:12,21;57:7; 61:18,25;63:22;64:23; 74:21 years (36) 2:6;9:19;20:15,25; 23:9;24:21;26:25;27:5; 29:14;30:16;35:23,23; 36:5;37:23;42:2;43:12; 49:24;50:15;52:18;55:10, 15;59:20,21,23;60:25; 68:13;69:13;70:9;71:15; 74:2,7,12;76:1,15;78:6; 83:10 Yes (1) 69:17 yet (1) 60:12 yielding (1) 31:19 you (171) 2:2,17,20,21;4:9;7:12; 8:3,4,12,14,15,16,19;9:4, 9;12:13,23,24;13:1,6,12; 14:3,11,13;15:19,21,21; 16:3,24;17:4,15,20,20,23; 22:22;23:5,11,19;24:1,6, 19;25:1,1;29:3;30:24; 31:20,23,24;32:2,4;33:9, 11,16,20;34:2,4,6,11; 38:2;39:8,10;42:9;44:6,8, 20;45:6,7,10,20,23; 46:24;47:3,12;49:5,13; 50:11,13;51:6;52:9; 53:17,18;54:6,25;55:1, 13;57:3,23;58:12,14,21; 59:14;60:11,14;61:2;</p>	<p>62:15,16;63:2,7,19,24; 64:2,9,24;65:21;66:8,10, 19;67:1,11,13,15,18; 68:10;69:10,23;70:1; 71:8,15,20,22,23,25,25; 72:4,9,10;74:16,24; 75:12,14,15;76:9,10,16, 25;77:14;78:9,10,11,20, 21;79:12;80:3,14;81:9,9, 11,12,12;82:5,8;83:5,5,8, 12,15,17;84:10,11,11,12, 15;85:5,7,14,19,21,24,25; 86:14,16 you'd (1) 71:13 you'll (1) 6:2 You're (8) 8:20;17:16;18:18; 63:23;68:15;75:9;82:15; 83:20 you'd (1) 31:4 younger (3) 43:9,13;54:18 your (32) 2:15;6:24;17:11,12; 31:19,21,24;32:3,4; 42:15;50:2,2,11;51:6; 63:3;67:10;70:15;74:20, 21;75:10,10,13,15,16; 76:11,16;77:12,15;78:20, 21;85:16;86:17 you're (2) 8:21;85:1 You've (1) 55:8 Z zero (2) 39:12;69:21 1 1 (1) 3:18 1- (2) 5:14;11:10 1,000 (1) 33:7 1.1 (5) 30:14;48:11;53:11,20, 22 1.9 (1) 26:4 10 (4) 3:12;5:8;83:18,22 100-year (2) 7:1;8:13 10th (1) 86:6 11 (1)</p>	<p>5:13 1-1 (9) 6:3,13,22;8:23;15:21; 22:20;27:22;28:23;39:8 112.4 (1) 26:3 1128 (1) 49:9 113.5 (1) 11:3 114.3 (1) 26:2 114.5 (4) 11:3,4,17;38:13 114-foot (1) 28:19 12 (3) 59:21;63:16;67:23 1203 (1) 59:17 130-day (1) 15:24 1315 (2) 45:25;47:14 1343 (1) 51:9 14 (1) 24:21 1415 (1) 63:15 15 (4) 42:2;59:23;74:11; 83:22 150 (1) 33:8 15th (1) 55:17 16 (1) 65:8 165 (1) 78:22 16th (4) 10:24;12:9;50:6;86:9 180 (4) 83:2,9,12,17 1930's (3) 54:16,17,24 1937 (2) 19:22;34:18 1960 (1) 71:13 1978 (1) 69:2 1990 (1) 49:11 1996 (1) 34:23 2 2 (3) 3:14;23:9;46:7 2.6 (1)</p>
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30:13 20 (7) 16:15;20:24;21:24; 26:24;27:5;60:25;69:13 2000 (6) 26:25;29:16;30:4; 49:25;51:11;62:21 2001 (1) 34:24 2010 (1) 74:23 2012 (1) 4:17 2013 (1) 35:4 2015 (3) 14:25;16:3;74:23 2016 (2) 10:24;50:7 2017 (1) 27:9 2020 (1) 49:25 2021 (1) 15:20 2035 (1) 21:6 2050 (2) 21:1,7 2115 (1) 32:12 21st (2) 54:20,23 2349 (1) 70:11 24 (1) 19:17 25- (1) 64:16 2-6 (1) 47:18 2-6d (9) 6:4;18:25;19:5;22:21; 25:23;26:3,18;27:22;29:1 2837 (1) 52:12 2928 (1) 76:19 2-foot (3) 5:14,17;11:10	71:11,12 34 (1) 21:2 35 (1) 78:6 3641 (1) 38:4 365 (1) 19:17 37 (1) 68:8 373 (1) 45:14	68.9 (1) 6:10		
		7		
		7 (2) 3:11;19:17 7:00 (1) 86:19 70 (1) 71:10 712 (1) 72:13 724 (1) 63:14 746 (1) 55:6 75 (1) 80:7 7th (2) 34:16;59:17		
	4	8		
	4 (3) 3:17;25:13;29:5 4:00 (1) 12:10 40 (2) 43:12;78:6 400 (1) 65:2 415 (1) 34:16 435 (1) 68:12 46 (1) 70:10 48 (1) 72:13 4-plus (1) 5:18	80 (2) 75:25;83:9 82 (2) 35:23;37:22 820 (1) 67:17 83 (1) 58:6		
	5	9		
	5 (2) 3:16;41:24 50 (8) 35:23;36:5;43:12;64:4; 70:8;74:2,5,7 50s (1) 71:3 55 (1) 68:13 5th (4) 5:12;11:2;62:11;64:1	9 (1) 5:13 90 (1) 22:1 98 (1) 49:12 99 (1) 85:6		
	6			
3	6 (2) 3:14;46:9 60 (1) 71:14 606 (1) 34:13 60s (1) 71:4 65 (1) 65:14 68 (1) 71:5			
3 (1) 68:3 30 (6) 12:8;16:14;20:25; 43:12;55:15;56:2 30s (1) 14:5 316 (2) 60:17;82:7 32 (2)				

Appendix J
Aiken Standard News Article, February 19, 2019

TOP STORY

CSRA officials react to Savannah River drawdown

Aiken County, North Augusta and Augusta differ from Army Corps' suggestion

By Lindsey Hodges lhodges@aikenstandard.com Feb 19, 2019



This photo taken Feb. 13, shows the river levels near River North in North Augusta during the Savannah River drawdown. Submitted photo



U.S. Army Corps of Engineers extends comment period for the Lock and Dam project

Those wishing to send comments to the U.S. Army Corps of Engineers about the future of the New Savannah Bluff Lock and Dam will now have an ex...



North Augusta City Council to again discuss new public safety facilities

The future of the North Augusta Department of Public Safety will again be the topic of discussion during City Council's study session Monday.

f t e b i

The Savannah District of the U.S. Army Corps of Engineers held a drawdown simulation of the Savannah River last week demonstrating their preferred alternative for the Savannah Harbor Expansion Project fish passage project and received a lot of backlash for the effects it had on the river level.

Under the Water Infrastructure Improvements for the Nation (WIIN) Act, the Corps is required to provide fish passage for endangered species, specifically the shortnose sturgeon. The WIIN Act also deauthorized the New Savannah Bluff Lock and Dam.

The simulation showed the level the river pool would be under the Corps' preferred alternative, Alternative 2-6d, or a fixed rock weir with a dry floodplain bench on the Georgia side of the river.

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APPENDIX K
Augusta Chronicle News Article, February 16, 2019

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By Tom Corwin

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Posted Feb 16, 2019 at 9:57 PM
Updated Feb 16, 2019 at 10:06 PM



A draft report from the Savannah District of the U.S. Army Corps of Engineers shows a significantly higher price for its preferred alternative for New Savannah Bluff Lock and Dam and the plan favored by local communities to save it and maintain a higher pool of water in the Savannah River. Local leaders are discussing ways they could pay for it if needed.

A draft report was posted Friday but was removed after questions were raised by The Augusta Chronicle about some of the significant differences in costs attached to analyses of the options studied, as well as some apparently missing information. Corps district spokesman Russell Wicke said the report was accidentally posted incomplete and would be reposted once the missing information was added. It was back up by Friday night.

Also on Friday night, the Corps decided to bring an early end to its simulation of conditions that would exist under its preferred option – with a much lower pool of water in the river – after finding a bank potentially crumbling in the Goodale Landing area of east Augusta. It said water levels should return to normal by Sunday.

The Corps' preferred plan is to remove the lock and dam and build a 500-foot rock weir at the site of the current dam to allow endangered shortnose and Atlantic surgeon to pass through on their way to historic spawning grounds in the Augusta shoals. It would also mean a significant flood plain that would pass through the current Lock and Dam Park, allowing high flows to pass around the structure.

The river level would drop about three feet at the lock and dam and just under two feet at the Fifth Street Bridge but would be maintained for water supply and recreation, as required by federal law. The cost in that draft report would initially be more than \$87 million and, with an annual operation and maintenance cost of \$45,000 over the 100-year life of the plan, would exceed \$91 million.



April 16, 2019

Comments on the draft EA
Savannah harbor Expansion Project
Fish Passage at New Savannah Bluff Lock and Dam

I am writing in regards to the proposed rock weir Alternative 2-6D, and the USACE draw down of Savannah River. The selection of this alternative will be devastating to the aesthetics, recreation, water quality, residents of the Central Savannah River Area and significantly impact the economics of North Augusta SC and Augusta GA region. The Alternative selected by the USACE does not meet the intent of the WIIN Act, Section 1319, where it states that: "The Savannah Harbor expansion Project in Georgia is modified to maintain the pool levels " at the water level of the Savannah River at the time the Act was approved into Law. Also this option is not supported by the City of North Augusta, SC, the City of Augusta GA and all the local representatives, The simple reason is that this alternative devastates the Savannah River as an asset to the cities and the residents and businesses that live and work in this region.

Background

The New Savannah Bluff Lock and Dam was put inactive around 1985 for commercial navigation between the Augusta Area and Savannah Ga. However this structure has been critical in maintaining the water level in the Augusta Region. This has allowed significant growth because of the beauty the Savannah River offered to the Business and Residents of the Greater Savannah River Area. Over the last 30 years this Riverfront has grown significantly and a few of the improvements are listed below;

- Augusta Downtown Riverwalk
- Marriott Downtown Riverfront Hotels
- New Cyber security Center Business Office Complexes
- Goodale Landing mixed use development
- The Riverclub Golf Course
- Hammonds Ferry Subdivision
- The River Club Subdivision
- The River North Subdivision

- The Rapids Subdivision
- Project Jackson Mixed use development, Hotel and SRP Park
- Numerous Festivities that bring income to the local business that are performed across from the Augusta Parks and recreation Boat House including;
 - The Regatta
 - The Iron Man Event
 - The Augusta Southern National Boat Races
 - A day in the County and other Musical events along the River

In addition, several new projects have been announced including a 95 million dollar mixed use development on 5th street and Reynolds St., and the River North Subdivision future expansion of 250-350 residential homes. These projects and other future projects along the riverfront are in jeopardy if the rock weir is constructed.

These new features, businesses and residential mixed use developments have been completed because of the importance and potential of the Savannah River and the beautiful scenery that it provides.

The following are the reasons that we need your help and assistance to ensure the right choice is made to protect this beautiful area from devastation

- 1) The Savannah River is a vital part of our community in the Augusta GA and North Augusta SC Area
- 2) Over the past 20 years significant growth both residential and commercial have resulted in tremendous success along the riverfront
- 3) The Savannah River Area around the Augusta Parks and Recreation the Boathouse Community Center has served to host significant events that have brought spectators and participates from around the world. If the Savannah River rock weir is put in place these events will be eliminated and any future event that could occur will represent our area as a mud hole, tremendous mosquito haven and a devastated appearance of our shoreline. What a great memory to leave Augusta with.

- 4) Local residents and businesses are trying to bring back significant sporting events to this area which include,
 - a. The Southern National Drag Boat race (this race has occurred for over 30 years and just recently stopped because of financial problems with the sponsor)
 - b. The American Power Boat Association boat race event

- 5) During the lowering of the Savannah River to allow the residents and business owners and the public to view what the Savannah River would look like once the rock weir was installed, the USACE was suppose to keep it down for a week to allow this viewing. The Savannah River was quickly raised because of the instability of the retaining wall at Goodale Landing. This destabilization is an indication that the USACE option is not well thought out and is the wrong choice for our region.

Comments on the Draft Environmental Analysis

Executive Summary, 2.2.1.1 Recreation, 2.2.12 Aesthetics, 3.6.11 Recreation, 3.6.12 Aesthetics

The recommended Plan alt 2-6d is in compliance with the 2016 WIIN Act. This alternative does not meet the intent of the 2016 WINN Act for the following significant factors;

- a) The recommended alternative 2-6d does not meet the intent of the 2016 WINN Act as it does not maintain the pool level at the level the day the Act was put into law. Does alternative 2-6d maintain the water level at the same level the pool was at the day the law was enacted?
- b) The recommended alternative 2-6d does not meet the intent of the 2016 WINN act as it does not maintain even close to the same ability for the recreation activities that are currently conducted on the Savannah River waterfronts. Does alternative 2-6d allow the same access to docks and fishing along the banks, skiing and wake boarding that is currently conducted?
- c) The recommended alternative does not meet the intent of the 2016 WINN act because it eliminates all of the current economic activities that have been coming to this area over the past decade.

- Does alternative 2-6d guarantee that this option supports the future regatta events? Does this alternative guarantee that it will support the future Iron Man events? If this event pulls out due to this option being implemented does the USACE reimburse the local residents and City on lost revenue?
- d) The recommended alternative does not meet the intent of the 2016 WINN act because it does not support the potential of bringing back the Southern National Drag Boat Race or other Boating events that local area is trying to get back like the American Power Boat Association Race. Does Alternative 2-6d allow for the Southern National Drag Boat Race to occur?
- e) The recommended alternative 2-6d does not meet the intent of the 2016 WINN act because the aesthetics are greatly impacted. The area along the savannah River that is used for the majority of the economic events are held at the Augusta Parks and Recreation Boathouse Community Center. This is the only area in the downtown that can support very large crowds. Alternative 2-6d destroys the habitat and visitor viewing from this area. The lowering of the Savannah River makes this area a mosquito haven and large areas of land that was under water will be showing therefore eliminating the potential use of this area for future events. The aesthetics are ruined by this alternative. Have you analyzed in your cost analysis the impact of lost economic revenue by the cities that this alternative will cause.
- f) Has the USACE talked with the Regatta and the Iron Man events to ensure these events will remain in Augusta once alternative 2-6d is implemented
- g) How does the USACE explain that the total elimination of the Savannah River economic events in the Augusta area as discussed above and listed below meets the intent of the 2016 WINN Act,
- The Regatta,
 - The Iron man,
 - The potential return of the Southern National Drag Boat and the American Power Boat Association race.
- h) Does the Boat dock analysis take into account the docks that still have water but cannot get to them because the River Level is so low there is no path to get to the docks that are impacted?

- i) Has the USACE done a complete analysis on the potential destabilization effects that alternative 2-6d will have on the existing retaining walls, docks and structures?
- j) Does alternative 2-6d have the support of the following entities;
 - a. The City of Augusta?
 - b. The City of North Augusta?
 - c. Senator Graham and Scott of South Carolina?
 - d. Senator Isakson and Perdue of Georgia?
 - e. Congressman Wilson of South Carolina and Allen of Georgia?



AIKEN COUNTY LEGISLATIVE DELEGATION

1930 University Parkway, Suite 3600-A
Aiken, South Carolina 29801
Phone: (803) 642-1694

April 16, 2019

Via Email (CESAS-PD@usace.army.mil) and U.S. Mail

U.S. Army Corps of Engineers
Savannah District Planning Division
Attention: Ms. Robin Armetta (PM-P)
100 West Oglethorpe Avenue
Savannah, Georgia 31401-3604

Re: New Savannah Bluff Lock and Dam – Savannah River

Dear Ms. Armetta:

We submit this letter to express our collective opposition to the Army Corps' proposed Alternative 2-6d as to the New Savannah Bluff Lock and Dam which was simulated in February 2019. During that time, portions of the river bottom between North Augusta and Augusta were visible as large sections of the river were drained to the mud limiting recreational activities, impairing river navigation, and threatening industrial production along the river north of the Lock and Dam.

We urge the Corps to develop a solution that maintains the river pool at the level as it existed at the time of the 2016 WIIN Act. Our understanding is that the Georgia and South Carolina federal legislative delegations have also submitted a letter explaining that the Corps' proposed Alternative 2-6d fails to comply with congressional intent in the 2016 WIIN Act.

We further understand that proven and effective methods exist that the Corps could utilize to maintain the existing Lock and Dam and to allow for passage of the sturgeon and other fish. In addition, hydroelectric capabilities exist which the Corps could use to assist in maintaining the Lock and Dam. Finally, substantial questions exist as to whether the Corps' proposed Alternative 2-6d will actually work as a proposed solution to the fish migration issue.

In short, the Corps' proposed Alternative 2-6d is not acceptable to the communities that we represent as reflected in the widespread opposition and discontent expressed during the public comment period. We urge the Corps to reevaluate and to find a solution that maintains the river pool elevation and preserves South Carolina's river front in Aiken County as we know it.

Sincerely yours,

Tom Young, Jr., Senate District 24

Nikki G. Setzler, Senate District 26

William Clyburn, House District 82

Ronnie Young, House District 84

A. Shane Massey, Senate District 25

Bart Blackwell, House District 81

Bill Hixon, House District 83

Bill Taylor, House District 86



GEORGIA

DEPARTMENT OF NATURAL RESOURCES

WILDLIFE RESOURCES DIVISION

MARK WILLIAMS
COMMISSIONER

RUSTY GARRISON
DIRECTOR

April 15, 2019

U.S. Army Corps of Engineers
Savannah District, Planning Division
ATTN: Ms. Robin Armetta (PM-P)
100 West Oglethorpe Avenue
Savannah, Georgia 31401-3640

RE: Savannah Harbor Expansion Project, Georgia and South Carolina: Fish Passage at New Savannah Bluff Lock and Dam Integrated Post Authorization Analysis Report and Supplemental Environmental Assessment

Dear Ms. Armetta,

Georgia Department of Natural Resources, Wildlife Resources Division (WRD) personnel have reviewed the February 2019 Savannah Harbor Expansion Project (SHEP), Georgia and South Carolina: Fish Passage at New Savannah Bluff Lock and Dam (NSBLD) Integrated Post Authorization Analysis Report and Supplemental Environmental Assessment (PAAR SEA) prepared by the U.S Army Corps of Engineers (USACE), Savannah District. Our comments are as follows.

The report describes and evaluates USACE's "final array" of alternatives for fish passage at the existing NSBLD under the SHEP plan. The No Action Alternative provides for a fish passage bypass on the South Carolina side of Savannah River as described in the 2012 SHEP Plan. Alternative 1-1 proposed to repair the existing lock wall, dam gates, piers and provided fish passage through the lock. The USACE has since eliminated Alternative 1-1 from consideration for reasons described in its March 19, 2019 Balancing the Basin post "Comparing the two Fish Passage alternatives" (<https://balancingthebasin.armylive.dodlive.mil/2019/03/18/how-two-fish-passage-alternatives-compare/>). The remaining three alternatives each include a fixed 500' weir, in-channel rock ramp fish passage sloping <2% upstream from the existing dam foundation to the weir crest with 10% back side (up-river) slopes, removal of the existing lock and dam structures, and retention of a portion of the dam foundation. Alternative 2-3 has an average weir crest elevation of 106.2 feet (NAVD88) and would utilize existing road networks and boat ramp facility. Alternative 2-6 further proposes a Georgia side floodplain bench, new boat ramp facility

and includes four design refinements with differing average weir crest elevations as follows: 2-6 (a) - 109.2 feet (NAVD88), 2-6 (b) - 106.2 feet (NAVD88), 2-6 (c) - 107.2 feet (NAVD88) and 2-6 (d) - 108.2 feet (NAVD88). Lastly, Alternative 2-8 calls for a gated flood bypass channel and new boat ramp facility on the Georgia side of the Savannah River with an average weir crest elevation of 109.2 feet (NAVD88).

The WRD continues to support fish passage and fishing/boating access at the NSBLD. Final fish passage design should carefully and fully consider recommendations from the 2016 joint publication by the National Oceanic and Atmospheric Administration (NOAA), US Geologic Survey (USGS), and US Fish and Wildlife Service (USFWS) “Technical Memorandum Federal Interagency Nature-like Fishway Passage Design Guidelines for Atlantic Coast Diadromous Fishes”, lesson’s learned from similar fish passage efforts, and other recommendations provided by fish passage experts. It is understood that the primary objective of this fishway is to pass Atlantic Sturgeon (*Acipenser oxyrinchus*) and Shortnose Sturgeon (*Acipenser brevirostrum*), however WRD prefers a design that will pass targeted sturgeons and where possible other migratory fishes including; American Shad (*Alosa sapidissima*), Hickory Shad (*Alosa mediocris*), Blueback Herring (*Alosa aestivalis*), Striped Bass (*Morone saxatilis*), American Eel (*Anguilla rostrata*) and the Georgia protected Robust Redhorse (*Moxostoma robustum*).

The WRD also supports the 2017 second amendment to the 2011 Biological Opinion developed the National Marine Fisheries Service as outlined in the PAAR SEA to minimize impacts to sturgeon during construction of the fish passage. It should be noted, however, that the allowed in-water construction window from April 15 – August 14 coincides with Robust Redhorse spawning known to occur on the gravel bar directly downriver of the NSBLD scour pool. As such, WRD requests that coffer dams and other required water diversion structures be installed in a manner that inundates the gravel spawning bar at all times. The PAAR SEA also states that construction debris may be processed to appropriate size and used to fill the scour hole below the existing NSBLD. USACE should evaluate impacts to existing gravel spawning bar under scenarios whereby the existing scour hole is filled and left unfilled. Evaluation results should be made available to stakeholders for review and comment. Lastly, WRD supports initiating construction of fish passage prior to January 2021 with construction completed within three years. However, should an alternative modeled to result in higher pool elevation levels above the fish passage structure but require additional time for non-Federal sponsors to acquire potentially flooded agricultural and forested lands, ultimately be selected as the desired fish passage plan WRD could consider supporting a reasonable alternative construction schedule.

We appreciate the opportunity to review and comment on USACE’s final array of potential fish passage alternatives at NSBLD and look forward reviewing final design for the

Georgia Wildlife Resources Division

Comments: Fish Passage at New Savannah Bluff Lock and Dam Integrated Post Authorization
Analysis Report and Supplemental Environmental Assessment

selected alternative and its implementation. Should you need additional information please
contact Thom Litts at thom.litts@dnr.ga.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "Rusty Garrison". The signature is fluid and cursive, with a long horizontal stroke at the end.

Rusty Garrison

cc. John Amborse (WRD Wildlife Conservation)
Matt Thomas (WRD Fisheries)
Doug Haymans (Coastal Resources Division)
Donald Imm (US Fish and Wildlife Service)

Dayton L. Sherrouse, FAICP
3010 Walton Way Ext.
Augusta, GA 30909
706-738-5047
dsherrouse@yahoo.com

April 15, 2019

Savannah District, US Army Corps of Engineers Planning Division
Attn: Ms. Robin Armetta (PM-P)
100 West Oglethorpe Avenue
Savannah, Georgia 31401-3640
CESAS-PD@auace.army.mil

Subject: Comments on New Savannah Bluff Lock and Dam Draft Integrated Post Authorization Report and related findings.

Dear Ms. Armetta:

I do not support any proposal to alter or demolish the New Savannah Bluff Lock and Dam (NSBL&D) that would lower downtown Augusta's Savannah River reach below normal historic levels of 114-115 feet above mean sea level. I base this opposition on many years of professional and personal experience dealing with river-related projects and events in Augusta.

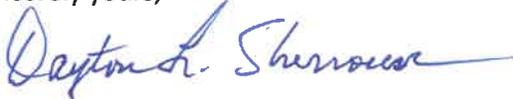
I have been a citizen of Augusta, Georgia for more than 50 years and held leadership positions in several government and non-profit organizations that have undertaken projects on and along Augusta's reach of the Savannah River. My former roles have included County Administrator of Richmond County, Executive Vice President of Augusta Tomorrow, Chairman of the Augusta Convention and Visitors Bureau. I have chaired or served on the host committee of the Augusta Southern National drag boat races, The Invitational Rowing Regatta, River Race Augusta and have served as Executive Director of the Augusta Canal Authority since 1998. I am a Fellow of the American Institute of Certified Planners (FAICP) and a graduate of Leadership Georgia.

In my professional and personal opinion, the conclusions of the Draft Report and associated Finding of No Significant Impact (FONSI) are flawed on several levels. 1). Finalization of a FONSI in the midst of the Public Comment period is inappropriate; 2). The adverse negative impacts of the current proposal to the historical, cultural, environmental, recreational and economic resources are indeed so significant they would not warrant the issuance of a FONSI; 3). The "No Build Alternative" should be reflect the current existing conditions at the NSBL&D and not something that was proposed in 2012. I also concur with all the comments set forth in the April 2019 memo submitted as part of the Public Comment process by the Save the Middle Savannah River group. Furthermore, I raise the question of fairness and equity for the citizens of our region.

As a citizen of Georgia, I recognize the enormous value of the Savannah Harbor Expansion Project to our entire state. Never-the-less, is it fair to ask that the Augusta area to shoulder the entire burden of mitigation, and not the rest of the State? The negative consequences of implementing the Corps currently favored alternative will impact greater Augusta for decades if not centuries. Future generations will rightly ask why we let this happen.

My proposed solution to the dilemma that we are currently in is to: 1). Have the joint Congressional delegations of Georgia and South Carolina immediately introduce legislation that would repeal the portions of Section 1319 of the WIIN Act that relate to the de-authorization of the NSBL&D; 2). repair the Lock and Dam and build a fish lift or bypass. This common-sense solution offers many benefits: maintaining the pool, addressing the concerns related to fish migration and eliminating negative economic impacts to the riverside communities and restoring navigation and cheaper than the proposed alternative.

Sincerely yours,

A handwritten signature in blue ink that reads "Dayton L. Sherrouse". The signature is fluid and cursive, with a long horizontal stroke at the end.

Dayton L. Sherrouse, FAICP

CC: Honorable Johnny Isakson, U. S. Senate
Honorable David Perdue, U. S. Senate
Honorable Lindsey Graham, U. S. Senate
Honorable Tim Scott, U. S. Senate
Honorable Rick Allen, U. S. Representative, GA
Honorable Joe Wilson, U. S. Representative. SC
Honorable Hardie Davis, Mayor of Augusta. GA
Honorable Bob Pettit, Mayor of North Augusta, SC



The Nature Conservancy in Georgia
100 Peachtree St
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Atlanta, GA 30303

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Nature.org/Georgia

BY ELECTRONIC FILING

April 15, 2019

Savannah District, U.S. Army Corps of Engineers
Planning Division, ATTN: Ms. Robin Armetta (PM-P)
100 West Oglethorpe Avenue
Savannah, Ga. 31401-36046

Re: The Nature Conservancy's comments on the U.S. Army Corps of Engineers, Savannah District, Draft Integrated Post Authorization Analysis Report and Supplemental Environmental Assessment (SEA), Fish Passage at New Savannah Bluff Lock and Dam (NSBLD), and Draft Finding of No Significant Impact (FONSI) to evaluate proposed changes to the Fish Passage feature of the Savannah Harbor Expansion Project (SHEP)

Dear Ms. Armetta:

We appreciate the opportunity to review and comment as the Corps evaluates designs to enable fish passage via modification of the New Savannah Bluff Lock and Dam as authorized by Congress via the Water Infrastructure Improvements for the Nation (WIIN) Act of 2016. Despite its long history of human impacts and alterations, the Savannah River remains one of the nation's great rivers, capable of supporting populations of these rare and ancient fish as well as a diverse suite of species dependent on a healthy aquatic system.

The Nature Conservancy (Conservancy) is a science-based conservation organization working in all 50 states and over 70 countries to 'conserve the lands and waters on which all life depends.' We have worked in partnership with the Corps over several decades to restore the Savannah River by mitigating human impacts such as the effects of hydrologic alteration imposed by dam operations on riverine, floodplain and estuarine ecosystems. Specific to the Proposed Action, the Conservancy is also an active partner in the Southeastern Aquatic Connectivity Program¹, working to prioritize opportunities to restore river connectivity and dependent species in the Southeastern U.S. In that prioritization, the NSBLD was ranked as one of the highest priority barriers (Tier 1) in the region for anadromous fish including Atlantic and shortnose sturgeon.

We appreciate that Fish Passage project at the NSBLD (Project) was identified as one appropriate mitigation measure to mitigate for impacts to nursery habitat for juvenile Atlantic and shortnose sturgeon from the Savannah Harbor Expansion Project (SHEP). The Project presents a unique opportunity to connect sturgeon and other migratory fish to spawning grounds and nursery habitats that have been inaccessible since the dam's construction in 1937.

Based on more than three decades of scientific study, we believe that complete removal of all structures associated with NSBLD and restoration of the channel to its natural configuration would be the best performing and most cost-effective fish passage alternative to enable fish communities, including threatened and endangered species, to repopulate pre-dam spawning and nursery habitats. However, while NSBLD is not authorized for water supply purposes, we recognize that the presence of the pool upstream of NSBLD for over 80 years resulted in many infrastructure decisions by the Augusta community that would be negatively impacted by complete loss of the pool. We therefore focus the rest of this letter on (1) sharing our general support for the Preferred Alternative 2-6d, (2) highlighting critical design features for successful nature-like fishway passage structures, and (3) supplementing the monitoring and adaptive management plan (2012 EIS, Appendix D) to demonstrate whether the loss of Atlantic and

¹ <https://southeastaquatics.net/groups/seacap>

shortnose sturgeon spawning and nursery habitat from the SHEP has been mitigated by implementation of the Corps' Preferred Alternative.

1. Within the constraints of the Purpose, Need & Proposed Action (defined in WIIN 2016), the Conservancy generally supports the Preferred Alternative.

The Conservancy supports the selection of Alternative 2-6d for its superior ability to pass fish, relative to the other alternatives considered by the Corps, which is the primary objective of the project. Offering migrating fish the entire width of the Savannah River maximizes the opportunity to design a structure that will provide sturgeon and other fish with a variety of conditions to accommodate their physiological needs. If appropriately designed and constructed, the in-channel fish passage structure should successfully pass fish over a wide range of flows throughout the anticipated seasonal run period. We do not agree that all alternatives discussed in the SEA provide the same output (mitigation lift), as referenced in page in Section 1.4.6, p. 11.

2. We request the Corps consider the following critical design features for successful nature-like fishways.

Based on the scientific literature on the response of migratory fish to nature-like fish passage structures² and published guidelines³, several key design elements should be given careful consideration in consultation with engineers and biologists knowledgeable about the physiology and behavior of sturgeon and other migratory fish native to the Savannah River. The following design elements are crucial to the success of this fish passage project:

- **Pool dimensions:** To maximize energy dissipation, pool volume, and available resting areas, pool widths should be made as wide as practicable. Pools should be sufficiently deep to serve as resting areas, allow for maneuverability, accommodate deep-bodied and schooling species, and offer protection from terrestrial predators. For downstream passage, a minimum pool depth is needed to provide safe passage of fish and prevent injury or stranding of fish passing over the weir or through weir openings, especially during low-flow outmigration conditions. Height of the fall as well as body mass of each species needs to be taken into account to minimize the potential for injury to out-migrating fish. For all species, a formula for minimum pool depth includes a minimum depth of 1 ft, plus 3 body depths, plus one additional body depth as a bottom buffer (to accommodate bottom unconformities and roughness). Pool length dimensions are important for similar reasons as the others above and additionally, determines overall slope of the fishway for a given drop per pool, so slope must be taken into account when determining minimum pool length (as well as the number of pools for a given design and overall drop).
- **Maximum Fishway Channel Slope:** The channel slope influences energy loss and water velocity over the weir, through weir notches, in pools, and around other in-stream features. In turn, velocity and energy dissipation influence fish behavior and passage efficiency. Because other design considerations can result in an unacceptably steep fishway, a maximum fishway channel slope is a key constraining factor on the overall design. Refer to the table below for the recommended maximum fishway channel slope for sturgeon.
- **Weir opening dimensions:** For the fixed-height weir at the upstream end of Alternative 2-6d, whose function is to maintain the pool above the structure for water intake, recreation, and other purposes of importance to the Augusta community, several considerations will determine the ability of sturgeon to pass:
 - Minimum opening width: For sturgeons, which possess a relatively wide body with broad pectoral fins, this dimension should be 2 times the body width of the largest-sized individual, including

² Bunt, C.M., Castro, T., and A. Haro. 2012. Performance of fish passage structures at upstream barriers to migration. *River Research and Applications* 28: 457-478.

³ Turek, J., Haro, A., and B. Towler. 2016. [Technical Memorandum: Federal Interagency Nature-like Fishway Passage Design Guidelines for Atlantic Coast Diadromous Fishes](#). Interagency Technical Memorandum. 46 pp.

maximum pectoral fin spread during passage. The opening width should also be designed for downstream migrating fish that may be oriented obliquely to the flow in a worst-case condition, to minimize potential body contact with (and subsequent injury) the weir-opening sidewall boulders. Wide weir openings also facilitate location of and attraction to the weir opening by fish in broader river reaches and passage sites by providing a flow jet that spans a larger proportion of the total pool width. The weir will optimally have multiple passage openings, with varying invert elevations to function over a range of river flows during the passage season and to benefit multiple species with varying swimming capabilities. The weir opening may need to be limited in width to maintain a minimum depth for passage during low flows that may occur during the fish run period. The weir should be properly designed such that modeled flows through a passage reach should result in a submerged weir, even during the lowest fish run flows. Such a design will result in streaming flow into a pool with water surface elevation at or above the upstream weir opening invert elevation, and preferably backwatering to the weir crest elevation.

- Minimum opening depth: Weir opening depths need to at least accommodate the full depth of the body of the largest-sized target species, including extended dorsal and ventral fins to minimize potential for injury. Sufficient water depths are also needed to create a low-velocity bottom zone to facilitate ascent by bottom-dwelling species, such as sturgeon.
- Maximum opening water velocity: The probability of fish passing upstream through velocity barriers at prolonged or sprint speeds can be calculated for some species based on known high-speed swimming performance or empirical high-speed swimming model data, particularly the critical swim speed for a species. Sprint swimming data, if available, are usually the best data to use to infer maximum weir opening water velocity.

Table - Summary of design guidelines for nature-like fishways for safe, timely and efficient passage for Shortnose and Atlantic sturgeon and American Shad².

Species	Minimum TL (cm)	Maximum TL (cm)	Body Depth/TL Ratio	Maximum Body Depth (cm)	Minimum Pool/Channel Width (ft)	Minimum Pool/Channel Depth (ft)	Minimum Pool/Channel Length (ft)	Minimum Weir Opening Width (ft)	Minimum Weir Opening Depth (ft)	Maximum Weir Opening Water Velocity (ft/sec)	Maximum Fishway Channel Slope
	TL _{min}	TL _{max}	BD/TL	BD _{max}	W _p	d _p	L _p	W _N	d _N	V _{max}	S ₀
Shortnose Sturgeon	52	143	0.148	21.2	30	4	30	2.75	2.25	5	1:50
Atlantic Sturgeon	88	300	0.15	45	50	7	75	5.5	4.5	8.5	1:50
American Shad	36	76	0.292	22.2	20	4	30	5	2.25	8.25	1:30

Note: units are expressed in both metric (cm) and English units (feet or feet/sec)

The Interagency Nature-like Fishway Passage Design Guidelines for Atlantic Coast Diadromous Fishes, paraphrased heavily above, provides detailed species-specific rationales for each of these parameters that we urge the Corps to consider carefully in consultation with experts from the US Fish and Wildlife Service Fish Passage Team, NOAA Fisheries Hydropower Program, NOAA National Marine Fisheries Service, NOAA Restoration Center, as well as the many academics who have studied sturgeon populations, migratory fish behavior, and reproductive needs.

3. Since the Purpose and Need for the proposed action is to mitigate for unavoidable loss of critical habitat from the SHEP, by restoring access to historic habitat, we recommend that the Corps incorporate more explicit performance measures, including a monitoring and adaptive management to demonstrate completeness and acceptability, into the Preferred Alternative.

We appreciate the monitoring and adaptive management plan included in Appendix D. of the Savannah Harbor Expansion Project Environmental Impact Statement (2012), including activities for pre- and post-construction monitoring. However, we remain concerned that the rigor of the study plan is not sufficient to meet the purpose and need for the Fish Passage Project. We do not agree with the assumption outlined in the SEA (Section 1.4.6, p. 11)

that, 'no additional Adaptive Management and monitoring is needed as a result of the project modifications.' In order to account for the Preferred Alternative's completeness and acceptability in mitigating for unavoidable loss caused by the SHEP, we make the following recommendations;

- The Conservancy recommends explicitly incorporating fish passage effectiveness goals into the proposed action. Since the objective of the project is to "increase access to historic spawning grounds for shortnose and Atlantic sturgeon upstream of the NSBLD to meet the completeness and acceptability of SHEP mitigation," it is important to define what amount of increase in access will meet the Corps' objective of completeness and acceptability. Borrowing language from the 2012 EIS, Appendix D, we recommend explicitly stating in the SEA, that the fish passage effectiveness goals of the Project are 75% upstream sturgeon passage, 85% downstream sturgeon passage, and causing no harm to passing sturgeon. Since the project purpose is to mitigate for impacts to two endangered sturgeon, this definition should be incorporated into the Objectives, Section 1.4.3 of the SEA.
- Please add Atlantic sturgeon to the survey species for pre-construction monitoring. We also support the proposal to include other representative species like Striped bass, Robust redhorse and American shad to pre-construction monitoring.
- We recommend that the Corps and partners address the failure of a similar Fish Passage project at the Cape Fear Lock and Dam #1 in North Carolina. A rock-arch fishway was constructed at this site in 2011-13 with the intention of passing American shad, striped bass Atlantic and shortnose sturgeon. Studies completed by researchers at North Carolina State University⁴ indicate that the design of this project failed to meet passage goals for anadromous fish. Passage data for sturgeon at the site is limited, but anecdotal information suggests that only a small number (single digits) of sturgeon may have passed over the structure since construction. The NSBLD Fish Passage project must take into consideration the lessons learned from the Cape Fear Lock and Dam #1 project, and in turn should be thoroughly evaluated to enable the knowledge base to expand for these critically important fish passage projects to continually improve.
- Post-construction monitoring should include an assessment of as-built project hydraulic habitat conditions, in addition to monitoring migration of the two endangered sturgeon species. Additionally, we would recommend a more rapid-response decision framework in the adaptive management plan to course correct for unexpected results related to hydraulic conditions or species movement. As described, biological data would be collected in years 1-5, post construction, and then again in year 9, with a summary study produced in year 10. We would recommend that a decision process be outlined that provides a clear path for structural modifications, within a pre-defined scope, to correct for know deficiencies in meeting the passage efficiency targets, and no-harm goal, within 3 to 5 years of construction.

The Nature Conservancy is grateful for this opportunity to provide input on the NSBLD Fish Passage project, and we look forward to continued partnership opportunities with the Savannah District of the U.S. Army Corps of Engineers to mitigate the impacts of infrastructure operations in the Savannah River and other river systems in Georgia.

Sincerely,



Sara J. Gottlieb
Director of Freshwater Science & Strategy, Georgia Chapter

⁴ Raabe, J. Ellis, T. and J. Hightower. 2014. [Effectiveness of a rock arch rapids for fish passage at a lock and dam on a large coastal river](#). Presented at: American Fisheries Society 144th Annual Meeting, August 17-24, 2014. Quebec, Canada.



April 11, 2019

Savannah District, U.S. Army Corps of Engineers Planning Division
ATTN: Ms. Robin Armetta (PM-P)
100 West Oglethorpe Avenue, Savannah, Georgia 31401-3640
Email: CESAS-PD@usace.army.mil.

Re: New Savannah Bluff Lock and Dam PUBLIC COMMENT PERIOD

Dear U.S. Army Corps of Engineers:

With this written notification, the Board of Directors of the Augusta Convention and Visitors Bureau goes on record regarding the New Savannah Bluff Lock and Dam. We join with the city of Augusta and other regional partners **in opposition to any plan** that does not maintain the Savannah River at the 5th Street Bridge to the historic level between 114.5 and 115.5 feet.

The future of our region depends on a river that continues to provide economic, recreational and navigational opportunities and ensures an adequate water supply for the health, safety and welfare of our citizens, now and for generations to come.

Specific to our industry, tourism attracts approximately 9 million visitors to our destination annually. These travelers contribute more than \$550 million annually to our regional economy as they travel to Augusta for conferences and conventions, sporting events, and leisure travel. As an industry, tourism also puts nearly 5,000 people to work. Augusta is poised to grow its tourism industry, and unique assets such as the Savannah River are vital to this effort.

Access to the Savannah River is a major emphasis of our Destination Blueprint strategic plan, which is focused on enhancing the regional economic health of Augusta and the region. The plan points out that past investment has been made to enhance the River experience in Augusta, including establishing a pedestrian Riverwalk along much of the levy, creating several pedestrian access points and developing an amphitheater opposite James Brown Boulevard on the River side of the levy.

At the same time, there are several challenges to leveraging the Savannah River from a visitor generation standpoint. One key standpoint is that available land on the River side of the levy is very limited, preventing substantial development. The large vacant parcels on the downtown side of the levy have a significant and negative impact on the visitor experience. But, initiatives such as expansion of the Augusta Common across Reynolds to the levy would address this impact. The vitality created by Common expansion and commercial development could result in a new and vibrant focal point for the entire downtown area, providing for the first time significant view corridors and access to the Savannah River.



Lowering the pool to the levels recently witnessed in the river draw down would be extremely detrimental to the region's economic vitality through tourism, to our Destination Blueprint strategic plan, and the overall quality of life for residents.

Some of the specific sporting events that would be adversely impacted by any plan that doesn't maintain the highest water level possible include these types of events that require access to the Savannah River:

- Ironman 70.3
- Drag boat race series
- Rowing regattas, championships and marathons

The combined economic impact of Ironman, Augusta Southern Nationals Drag Boat Races, H.O.T.S (Head of the South) Rowing Regatta and the SE Masters Rowing regionals is approximately \$11.5 million.

A lower water level will adversely affect existing development in the downtown area and will certainly impede and perhaps prohibit the opportunity to construct more hotels and other businesses on the waterfront. A vibrant waterfront, and the current higher water level are the catalysts for recent development such as the \$100 million Nathan Deal Cyber and Innovation Training Center, the new \$25 million Hyatt House-Augusta, and the Riverfront at the Depot - a \$94 million residential, office and retail development that will rely heavily on its connection to the river to attract residential and business occupants.

In summary, 2-6d is not the preferred plan, and we join in the appeal that advocates for the Corps of Engineers to adopt plan 1-1.

Sincerely,

A handwritten signature in black ink, appearing to read "Philip R. Wahl II".

Philip R. Wahl II
Chair, Board of Directors

A handwritten signature in black ink, appearing to read "Bennish D. Brown".

Bennish D. Brown
President/CEO

c: Congressman Rick Allen
Senator David Purdue
Senator Johnny Isakson
Governor Brian Kemp

Congressman Joe Wilson
Senator Lindsay Graham
Senator Tim Scott
Governor Henry McMaster





Congress of the United States
Washington, DC 20515

April 12, 2019

U.S. Army Corps of Engineers
Savannah District
100 W. Oglethorpe Avenue
Savannah, GA 31401
ATTN: Ms. Robin Armetta
Via e-mail: CESAS-PD@usace.army.mil

RE: Joint Comment to the US Army Corps of Engineers, Savannah District re: New Savannah Bluff Lock and Dam

Dear Ms. Armetta,

Our offices have been in constant contact with the U.S. Army Corps of Engineers (Corps) and resource agencies relative to the New Savannah Bluff Lock and Dam. We are grateful to submit formal comments summarizing the concerns we have with Alternative 2-6d, the Corps' chosen plan to replace the New Savannah Bluff Lock and Dam.

Maintaining the pool level is critical for water supply of both industries and municipalities, as well as the significant economic investments that the cities of Augusta and North Augusta have developed on the riverfront. In the letters we wrote to you on January 28, 2019 and March 4, 2019, respectively, we note that the language of the Water Infrastructure Improvements for the Nation Act (WIIN) requires the fish passage structure to “maintain the pool for navigation, water supply, and recreational activities, **as in existence on the date of enactment of this Act.**” We believe in a strict interpretation of this language—maintaining the pool level between 113.5 and 114.5 feet, which was the recorded water level in December of 2016 when the WIIN Act was signed into law. Additionally, the Cities of Augusta and North Augusta, as well as Aiken County, have come together supporting resolutions that maintain the pool at or around its current level—approximately 114.5 feet.

Sadly, the chosen alternative lowers the pool significantly, as recently shown by the Corps' own simulation. On April 9, 2019, we sent a letter with all four of our Senate counterparts to underscore Congressional intent of the WIIN Act, highlight the need to maintain the pool level and point out the negative effects of the aborted simulation. As the letter notes, the simulation was halted due to instability in a riverbank in Goodale Landing. As we have also heard from industry partners in the area, the results of the simulation did not match the models that the Corps projected. Water levels at certain industries were lower than originally projected and would likely cause modifications to the facility. Using the Corps' evaluation criteria, we believe that especially in the water supply criteria, the Corps was incorrect in their assumptions- with the city of North Augusta and other water users indicating that they were, in fact, impacted. Additionally, many individuals had their docks for recreational activities impacted, rendering many unusable.

We would also urge you to consider other options that would maintain the dam and allow for fish mitigation through proven and effective methods. In conversations had with NOAA, there has not yet been a sturgeon tracked utilizing the Cape Fear rock weir, the mitigation solution after which Alternative 2-6d is modeled.

Some options that you may consider are maintaining the lock and dam and installing a weir to overcome where the bottom gates meet the bottom of the dam and allowing the fish to utilize the gates of the dam to swim through, allowing the fish to go through the lock, or installing a fish ladder or fish tube. We would also encourage you to work with NOAA to help develop an alternative that maintains the dam while still maintaining successful migration of the fish. Many of these could be accomplished at a fraction of the cost of Alternative 2-6d and have been proven to help fish bypass dams throughout the country.

Finally, we are concerned about the Corps' numbers regarding the cost of Alternative 1-1. When the local community asked for a cost certification for Alternative 1-1, the numbers came back astronomically higher than what was originally estimated for this alternative. Additionally, the local community has asked for the cost to repair the dam time and again, to no avail. Should the community wish to pursue an option that includes the rehabilitation of the lock and dam, they have not yet been able to ascertain a clear number on that cost. On a recent tour of the dam, we learned that the dam could be fitted with hydropower capabilities, and we ask you look into utilizing the dam for hydropower to offset the cost of maintaining the lock and dam.

Thank you for your considerations of these comments. The community is united that the Corps' chosen alternative, 2-6d, is unworkable and unacceptable, with devastating effects. We urge you to choose another alternative that maintains the dam and the pool level for the Augusta and North Augusta communities. We look forward to continuing to work with you on a solution that is positive for our constituents and the beautiful riverfront community we represent.

Sincerely,



Rick W. Allen
Member of Congress



Joe Wilson
Member of Congress

From: Dale Reddick
To: CESAS-PD, SAS
Subject: [Non-DoD Source] Comment to the Corps of Engineers Regarding Replacement of the NSB L&D
Date: Tuesday, April 16, 2019 1:03:04 PM

Good Day,

As my principal component of a comment on the proposed replacement of the New Savannah Bluff Lock & Dam, I simply wish to state that I support the stance of the Savannah Riverkeeper (SRK) in this matter.

Here is the link to the readable and downloadable PDF comment document filed by SRK as their comment:

[Blockedhttps://www.savannahriverkeeper.org/uploads/1/0/7/7/10770018/savrk_comments_on_nsblld_fish_passage_project-2.pdf](https://www.savannahriverkeeper.org/uploads/1/0/7/7/10770018/savrk_comments_on_nsblld_fish_passage_project-2.pdf)

Attached are seven compressed JPEG photos documenting a small sampling of the changes to the Savannah River below the bridges between downtown Augusta and North Augusta which occurred as a result of the drawdown created during the first half of February, 2019. Of particular note are the changes which happened around the public boat ramp and dock at 103 Riverfront Drive (beside the Augusta Port Authority offices). As can be seen from this focus on water level at the dock both prior to and during the drawdown, that public dock was rendered unsafe and unusable. These photos demonstrating its condition were taken by me on February 13th through 15th. I amassed several score of photos demonstrating the dramatic-appearing changes in the Savannah River during the time period of the drawdown.

The provided seven photos were taken: February 5th, 2019 (prior to the drawdown); February 13th, 2019 (during the drawdown); and February 15th, 2019 (during the drawdown).

For the hour-long time frames surrounding when these photos were taken, here are Savannah River depth readings from the USGS gage described as being located at the Jefferson Davis Bridge (5th Street Bridge). However, that gage is actually found closer to the 200 statute mile marker on the river near 8th Street. This is approximately 1 & 1/3rd mile from the public dock beside the boat ramp at 103 Riverfront Drive (an attached map identifies the site). Thus, these river gage depth readings represent the actual condition of the river at the time the photos were taken.

As can be seen from these gage depth readings, the river dropped by one fathom during the drawdown, as compared to its condition just prior to the beginning of the drawdown. This is a dramatic and generally unsupportable degree of change in the depth of the river as brought about by the drawdown demonstration of expected conditions should the Corps' preferred means of replacement for the NSB L&D meant to be implemented actually be put into effect.

I hope that these photos and accompanying river gage depth readings help to explain why the February drawdown demonstration of the projected river level represents an unacceptable degree of change for the Savannah River in its coursing between Augusta and North Augusta.

Dale E. Reddick, M.Sc.

The first set of two photos thus matches with this first set of five depth readings.

USGS 02196670 2019-02-05 15:00 EST 16.96 P 116.96 P 0.00 P
USGS 02196670 2019-02-05 15:15 EST 17.04 P 117.04 P 0.00 P
USGS 02196670 2019-02-05 15:30 EST 17.11 P 117.11 P 0.00 P
USGS 02196670 2019-02-05 15:45 EST 17.21 P 117.21 P 0.00 P
USGS 02196670 2019-02-05 16:00 EST 17.31 P 117.31 P 0.00 P

The second set of two photos matches with this second set of five depth readings.

USGS 02196670 2019-02-13 09:30 EST 10.84 P 110.84 P 0.00 P
USGS 02196670 2019-02-13 09:45 EST 10.86 P 110.86 P 0.00 P
USGS 02196670 2019-02-13 10:00 EST 10.91 P 110.91 P 0.00 P
USGS 02196670 2019-02-13 10:15 EST 10.92 P 110.92 P 0.00 P
USGS 02196670 2019-02-13 10:30 EST 11.07 P 111.07 P 0.00 P

The third set of three photos matches with this third set of five depth readings.

USGS 02196670 2019-02-15 10:15 EST 11.29 P 111.29 P 0.09 P 0.00 P
USGS 02196670 2019-02-15 10:30 EST 11.28 P 111.28 P 0.06 P 0.00 P

USGS 02196670 2019-02-15 10:45 EST 11.24 P 111.24 P 0.08 P 0.00 P
USGS 02196670 2019-02-15 11:00 EST 11.22 P 111.22 P 0.09 P 0.00 P
USGS 02196670 2019-02-15 11:15 EST 11.23 P 111.23 P 0.08 P 0.00 P

TOM YOUNG, JR.
SENATE, DISTRICT NO. 24
AIKEN COUNTY

COMMITTEES:
EDUCATION
FAMILY AND VETERANS' SERVICES
FISH, GAME AND FORESTRY
GOVERNOR'S NUCLEAR ADVISORY COUNCIL
JUDICIARY
JUDICIAL MERIT SELECTION COMMISSION
LEGISLATIVE OVERSIGHT
RULES



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April 16, 2019

Via Email (CESAS-PD@usace.army.mil) and U.S. Mail

U.S. Army Corps of Engineers
Savannah District Planning Division
Attention: Ms. Robin Armetta (PM-P)
100 West Oglethorpe Avenue
Savannah, Georgia 31401-3604

Re: New Savannah Bluff Lock and Dam – Public Comments

Dear Ms. Armetta:

Please accept these comments submitted ahead of the April 16, 2019 deadline at 4:00 pm regarding the future of the New Savannah Bluff Lock & Dam (NSBL&D) and the Army Corps' ("Corps) announced proposed Alternative 2-6d which would remove the lock and dam and construct a fixed weir with a dry floodplain bench. As State Senator for Senate District 24, I represent all of Aiken County along the Savannah River riverfront. This letter summarizes some – but not all – of the reasons that the proposed Alternative 2-6d should be abandoned, and this letter requests additional information as to some matters which the Corps has not addressed or provided to date.

Opposition to Alternative 2-6d

There are many reasons that the Corps should reconsider and abandon the proposed Alternative 2-6d. I will review a few of those reasons below as follows:

First, the Corps' announced proposed Alternative will destroy the riverfront as nearly all living people know it. As shown in the Corps' simulation of Alternative 2-6d between February 9, 2019 and February 15, 2019, the Corps' plan lowered the Savannah River to where it literally became a stream between North Augusta, SC and Augusta, Georgia. Since the completion of construction of the New Savannah Bluff Lock and Dam in 1937, the riverfront between the two cities north of the Lock and Dam has been elevated as it is today. The Corps' plan will irreparably damage the riverfront and is unacceptable.

Second, Alternative 2-6d does not comply with the conditions imposed by the

State of South Carolina when it approved the Savannah Harbor Expansion Project (“SHEP”). As I am sure you are aware, the South Carolina Department of Health and Environmental Control (“DHEC”) and the Savannah River Maritime Commission (the “Commission”) were hesitant to issue the 401 Water Quality Certification in connection with SHEP. After much debate, including litigation, the Certifications were issued in 2013. The issuance was included in the Settlement Agreement entered into in connection with Savannah Riverkeeper, et. al. v. United States Army Corps of Engineers, et. al., Case No. 9:12 – CV – 610, US District Court, SC District, Beaufort Division (the “Settlement Agreement”). The Settlement Agreement was approved by the Court on May 29, 2013 and addressed several issues related to SHEP. The Corps agreed to several conditions imposed by DHEC and the Commission, which were imposed to protect the interests of the citizens of South Carolina. The primary conditions imposed by DHEC were attached to the Settlement Agreement as Exhibit A, and those imposed by the Commission were attached as Exhibit B. Copies of these exhibits are enclosed for your reference. Of particular note is the condition that SHEP be completed in accordance with the conditions set forth in the Final Biological Opinion issued by the National Marine Fisheries Service on or about November 4, 2011. This report imposed a strict timeline for the commencement and completion of the fish bypass¹. It also required that an “Off-Channel Rock Ramp” be built at the Lock and Dam. As you know, this design would maintain the Lock and Dam. Any deviations from this plan, especially something as drastic as Alternative 2-6d which requires removal of the existing structure, require the agreement of DHEC and the Commission. Any change may also require approval of the District Court mentioned above, as it would be an amendment to the Court approved Settlement Agreement. I do not believe these requirements have been satisfied.

Third, Alternative 2-6d fails to accurately reflect the intent of Congress as shown in the WIIN Act of 2016. Nowhere is that failure as to the Corps’ Alternative plan more succinctly and directly stated than in the April 9, 2019 letter from all of the federal elected members of Congress representing the states on both sides of the Savannah River. As stated in that letter, the Corps should “take into close consideration the intent of Congress” as it selects the final alternative because “[W]e must protect our riverfront communities and ensure the Corps follows the law to ensure that the water supply and recreational activities are functional as they were on [the] date of enactment.”

Fourth, the Corps’ Alternative 2-6d fails to take into consideration the historical significance of the New Savannah Bluff Lock and Dam. For example, other similar lock and dam structures constructed as New Deal construction projects during President Franklin Roosevelt’s first term are recognized for their national historic significance.

¹ The Corps may be relying upon the fact that an amendment to the November 4, 2011 Biological Opinion was issued by NOAA on October 13, 2017, which approves the delay of the commencement and completion of the fish bypass. This Amendment has also been cited as having the effect of de-coupling the timelines for the bypass from SHEP. However, these assertions are not binding upon DHEC and the Commission. These organizations approved of SHEP based upon the November 4, 2011 Biological Opinion, and there was no provision allowing the Corps to modify the approval to factor in future amendments. The Settlement Agreement is unaffected by actions occurring subsequent to its issuance. The Corps freely agreed to these conditions, regardless of whether the SC Certificates were required under the Clean Water Act, as previously alleged by the Corps.

Notably, as such, they are protected. Similar consideration should be given to the New Savannah Bluff Lock and Dam while constructing a fish passage around the Lock and Dam as exists in several other places around the nation.

Fifth, the Corps' Alternative 2-6d lowers the river pool to levels that are adverse to the interests of the substantial industrial investments that exist on both sides of the river. My understanding is that both Kimberly-Clark Corporation and SCE&G have submitted comments to the Corps under separate cover expressing those concerns as to their companies. Those concerns are shared by other industrial and commercial operations existing along the river in both states.

Sixth, the Corps' Alternative 2-6d fails to recognize that the City of North Augusta and others rely upon the river pool for water supply. In the future, that reliance is expected to increase. Further, it is possible that other parts of South Carolina and Georgia may eventually depend on the river pool for water. The Corps' plan adversely impacts this both now and into the future.

Seventh, the South Carolina Department of Natural Resources ("SCDNR") by letter of March 28, 2019 has expressed its concerns as to all of the current proposed alternatives. Further, SCDNR questions whether installing a fish passage to allow the sturgeon to access areas north of the Lock and Dam are needed. (See SCDNR letter of March 28, 2019 at 5.) Notably, SCDNR states that "The current conditions downstream from the [Lock and Dam] provide habitat supporting successful reproduction for both Shortnose and Atlantic Sturgeon." Id.

Finally, the cost estimates for the Corps' Alternative 2-6d and other alternatives appear flawed too. For example, during the public comment period, the Corps has substantially increased the cost of any option that includes retaining the Lock and Dam by imposing the assumption that the structure will require replacement at federal expense in 50 years based upon the assignment of an arbitrary life span of the post-renovation structure. To my knowledge, there has been no analysis of the projected life span of the structure. It is worth noting that the 1934 design and structure has remained for over 81 years since its completion in 1937, despite the Corps' apparent failure to maintain this Congressionally-approved project. This is especially concerning in light of my understanding that the Corps refused to accept local funds for repairing the structure when the law was changed in 2000 to require repair and permitted conveyance to the City of North Augusta and Aiken County. It is worth noting that the repair at that time could have been accomplished at a far lesser expense as evidenced by the \$5,300,000 renovation cost in the 2000 law.

Relevant Requested Information

As to relevant information regarding matters that the Corps has not addressed or provided, I mention and request the following:

First, no detailed information regarding the physical condition of the Lock and

Dam has been disclosed to the public or to any South Carolina governmental entity. Making a decision of such great importance to our community without full disclosure of information known only to the Corps undermines any public confidence in the cost estimates. It prevents meaningful input or criticism of the Corps' decisions. The Corps reportedly has done an extensive study of the structure. Will the Corps release that information? If not, why not? Will the Corps allow engineers who work for the State of South Carolina or are hired by it to review their studies?

Second, it appears that all of the potential methods available to allow the short-nosed sturgeon and the Atlantic sturgeon to swim upstream past the Lock and Dam have not been evaluated. This includes the possibility of installing a fish lift or similar structure. For example, the Corps installed a fish lift at the St. Stephens Dam on the Santee River in South Carolina which is operated by the South Carolina Department of Natural Resources. That facility includes an underwater glass window to allow the public and scientists to see the operation of the device and to learn much about the fish it is designed to benefit. An evaluation of installing a similar structure here, and any other options, should be done.

Conclusion

In summary, the Corps' Alternative 2-6d fails for a number of reasons. The Corps should reevaluate after considering all public comments. It is absolutely clear from the public comments to date that the Corps must preserve the elevation of the Savannah River pool as it existed at the time of the 2016 WIIN Act. In doing so, the Corps will make sure that the water supply and recreational activities continue as we have known them for decades along the Savannah River. Thank you for your attention to this letter and for providing a response to the issues referenced herein.

Sincerely yours,



Tom Young, Jr.
State Senate

Enclosures

Copy w/o exhibits:

Honorable Lindsey Graham
Honorable Tim Scott
Honorable Joe Wilson
Honorable Henry D. McMaster
Honorable Johnny Isakson
Honorable David Perdue
Honorable Rick W. Allen
Honorable Hardie Davis, Jr.
Aiken County Legislative Delegation

EXHIBIT A

EXHIBIT A
DHEC Terms and Conditions

The South Carolina Department of Health & Environmental Control (DHEC) certifies pursuant to Section 401 of the Clean Water Act, 33 U.S.C.A. § 1341, and S.C. Code Regulation 61-101 that: (1) there is a reasonable assurance that the Savannah Harbor Expansion Project authorized by Congress in 1999, Pub. Law 106-53, 113 Stat. 269, § 101(b)(9) and as described in the Final Environmental Impact Statement (“Final EIS”) and Final General Reevaluation Report (“Final GRR”), both dated January 2012 and revised in July 2012, and approved by the Chief of Engineers Report dated August 17, 2012 (“Engineer’s Report”) and Record of Decision dated October 26, 2012 (“ROD”) (“SHEP” or “the Project”), including proposed mitigation measures, and subject to the conditions contained in this certification, will be conducted in a manner which will not violate applicable water quality standards regulations; (2) any discharges into navigable waters from the Project, as described in the final EIS and subject to the conditions contained in this certification, will comply with applicable provisions of Section 303 of the Clean Water Act; and (3) there are no applicable effluent limitations under Sections 301(b) and 302 of the Act and there are no applicable standards under Sections 306 and 307.

This certification serves as a state permit under the South Carolina Pollution Control Act, S.C. Code Ann. § 48-1-90(a) and is enforceable as a permit under the Pollution Control Act.

This certification authorizes the Project as described in the Final EIS, ROD, Chief of Engineer's Report, and approvals of other federal agencies including the USEPA approval of July 11, 2012 and the USFWS approval of July 9, 2012, subject to the additional requirements of this certification. Actions inconsistent with the Final EIS and other federal approvals are not authorized except where permitted or required by this certification.

This certification is subject to the following conditions, which include certain obligations of the Georgia Ports Authority (GPA). GPA’s compliance with its obligations is an essential component of this authorization. This certification does not require that the GPA commitments be included in the ROD.

1. The U.S. Army Corps of Engineers (Corps) may construct the Project consistent with the Final EIS dated January 2012 and revised in July 2012 and approved by the Chief of Engineers Report dated August 17, 2012.
2. Any hopper dredging activities for the Outer Harbor must take place between December 1 and March 31.
3. All dredging in the Inner Harbor upstream of Station 63+000 is prohibited during the striped bass spawning period of April 1 to May 15.
4. The Corps will make reasonable efforts to perform the authorized work in a manner to minimize adverse impact on fish, wildlife, and water quality. The Corps must construct the Project in a manner that will not violate applicable law.
5. DHEC may make periodic inspections of the Project construction and mitigation implementation sites that are reasonable in scope on no less than one week’s advance notice and subject to adherence to personal protective equipment requirements contained in the Corps Safety Manual (EM 385-1-1).

6. In addition to the water quality monitoring set forth in or required by the Project Final EIS and other governmental approvals, the Corps will provide continuous daily water quality monitoring with two additional monitors at locations to be jointly agreed-upon by the Corps, Savannah River Maritime Commission, and DHEC, to be installed simultaneously with the eight continuous water quality monitoring stations proposed in Appendix D of the Final EIS. These additional continuous water quality monitoring stations are intended to supplement the eight continuous water quality monitoring stations proposed in Appendix D of the Final EIS and will be subject to the same criteria for Pre-Construction Monitoring, Monitoring During Construction and Post Construction Monitoring as specified in Appendix D to the Final EIS. A copy of the monthly monitoring reports will be provided to DHEC and the Commission and will be publicly available through the project's website within 30 days after the Corps' receipt of the monitoring report. Should adverse conditions, such as weather or vandalism, impair operations of a water quality monitor, the Corps will undertake reasonable efforts to restore operation of the monitor as soon as possible. This provision will terminate at the end of the 10-year Post Construction Monitoring Period.

7. The Corps will mitigate the impacts of the Project consistent with the Final EIS and ROD. The Corps will comply with the Monitoring and Adaptive Management Plan in Appendix D of the final EIS, incorporated by reference. The Monitoring and Adaptive Management Plan will ensure the accuracy of the predicted environmental impacts, assess the effectiveness of the mitigation features, and provide for modification of the Project as needed.

8. The Corps will coordinate with the state resource agencies, including DHEC, the Commission, Georgia Department of Natural Resources ("Georgia DNR"), and the federal Cooperating Agencies in the implementation of the Project's Monitoring and Adaptive Management Plan as provided in Appendix D of the Final EIS.

9. Prior to initiation of Inner Harbor Channel Dredging, GPA, at its sole expense, will evaluate the effects that cadmium disposal in confined disposal facilities 14A and 14B may have on the construction of a terminal at those sites in the future and submit such report to DHEC and the Commission.

10. Cadmium is naturally present in certain reaches of the Savannah River Harbor. Therefore, the Corps shall conduct the following monitoring:

- a. During the SHEP deepening activities, cadmium concentrations in the discharge shall be monitored weekly from those Confined Disposal Facilities (CDF) receiving sediments from the four known reaches within the Savannah Harbor having elevated cadmium concentration in the sediments. U.S. Environmental Protection Agency laboratory testing methodology must have a detection limit of at least 0.7 micrograms per liter (ug/l). Monitoring shall continue at these CDF discharge points as long as discharge is present and until all dredged sediments have been dewatered, stabilized and capped as per the Final EIS. Data shall be reported to DHEC quarterly in micrograms per liter within thirty (30) days of the end of each calendar quarter.
- b. Following the installation of a stable clean cap within the CDFs that receive cadmium-bearing sediments, cadmium shall be monitored weekly for a period of one year. Data shall be reported to DHEC quarterly in micrograms per liter within thirty (30) days of the end of each calendar quarter.

- c. The Corps shall monitor dewatering discharges from all CDFs weekly and shall provide monthly reports to DHEC within thirty (30) days of the end of each reporting period. Monitoring reports shall include the location of the discharge point, sampling point, dates of discharge, total suspended solids, dissolved oxygen, pH, temperature, salinity, turbidity and conductivity.
 - d. The monitoring data will be evaluated as provided in Appendix D of the Final EIS.
11. Prior to commencement of any Inner Harbor Channel Dredging, the Corps will test and evaluate the Oxygen Injection System to demonstrate its effectiveness consistent with the Final EIS to mitigate for the dissolved oxygen (“DO”) impacts caused by the Project. Dredging of the Outer Harbor can occur prior to this testing.
- a. The Corps will refine and update the SHEP hydrodynamic (EFDC) and water quality (WASP) models specifically for DO. The updated model will take advantage of previous modeling efforts, including U.S. Environmental Protection Agency’s TMDL model, and the most current information collected in the Savannah River harbor and estuary, and will use the most current and representative data. The product will be complete DO predictive model scenarios comparing instream DO concentrations with and without operation of the Oxygen Injection System.
 - b. The purpose of the modeling and monitoring is to confirm that the Oxygen Injection System will mitigate for the DO impacts of the Project, as shown by comparing actual DO levels in the modeled area, from Station 0+000 upstream to River Mile 27.8, to DO levels in the without-Project scenario (the “Success Criteria”).
 - c. The Oxygen Injection System at the downriver Hutchinson Island location of the Oxygen Injection System must be operated and instream DO must be monitored continuously for a period of 59 days (2 lunar cycles). Continuous daily water quality monitoring must be conducted during this period at locations specified in and pursuant to the monitoring plan provided in the Adaptive Management Plan and as modified herein. This 59-day period of operation is referred to herein as the “Test Run.”
 - d. Following the Test Run and analysis of the modeling results and monitoring data, the Corps will provide a report to DHEC comparing the monitoring data collected during the Test Run to the modeling results.
 - e. Copies of the data, modeling inputs, modeling results, monitoring data, and reports will be provided to DHEC as soon as available to allow DHEC to review the information simultaneously with the Corps and Adaptive Management Team.
 - f. DHEC will have thirty (30) days to evaluate and review the Test Run report and to provide comments and feedback to the Corps and Adaptive Management Team (as described in Appendix D of the Final EIS). The Corps, Conservation Groups (defined as the South Carolina Coastal Conservation League, Savannah Riverkeeper, and South Carolina Wildlife Federation), Commission and DHEC each will independently evaluate the Test Run report and other relevant information to assess achievement of the Success Criteria.
 - g. If the Corps determines that the Oxygen Injection System test meets the Success Criteria, it will commence Inner Harbor Channel Dredging no sooner than fourteen

(14) days after the 30-day comment period in subsection (c) has ended. DHEC reserves the right to take any appropriate action if its independent determination is that the Success Criteria has not been met, including but not limited to suspension, rescission, and revocation of this certification, initiation of an enforcement or other legal action. The Corps does not waive any objection or defense to such actions, including any objection or defense based on federal preemption, sovereign immunity, or immunity from state regulation.

12. Following the installation of the entire Oxygen Injection System, the entire Oxygen Injection System must be operated and instream DO must be monitored continuously for a period of 59 days (2 lunar cycles), of which at least one 29.5 day testing (one lunar cycle) must occur in July, August, or September immediately following the installation of the Oxygen Injection System. Continuous daily water quality monitoring must be conducted during this period at locations specified in and pursuant to the monitoring plan. This 59-day period of operation is referred to herein as the "Start-up Run."

- a. Following the Start-up Run and analysis of the modeling results and monitoring data, the Corps will create a report comparing the monitoring data collected during the Start-up Run to the predictive modeling results.
- b. Copies of the data, modeling inputs, modeling results, monitoring data, and reports will be provided to DHEC as soon as available to the Corps.
- c. DHEC will have sixty (60) days to evaluate and review the Start-up Run report and to provide comments and feedback to the Corps and Adaptive Management Team (as described in Appendix D of the Final EIS). The Corps, Conservation Groups, Commission, and DHEC each will independently evaluate the Start-up Run report and other relevant information to assess achievement of the Success Criteria.
- d. If the Corps determines that the Oxygen Injection System test meets the Success Criteria, Inner Harbor Channel Dredging will continue. DHEC reserves the right to take any appropriate action if its independent determination is that the Success Criteria has not been met, including but not limited to suspension, rescission, and revocation of this certification, initiation of an enforcement or other legal action. The Corps does not waive any objection or defense to such actions, including any objection or defense based on federal preemption, sovereign immunity, or immunity from state regulation.

13. Following successful completion of the Test Run and Start-up Run, the Corps will operate and maintain the Oxygen Injection System during the life of the Project in a manner that will mitigate for DO impacts of the Project on water quality consistent with the Final EIS. Copies of all data and reports will be provided to DHEC.

14. The Savannah District of the Corps will make the Oxygen Injection System a top priority for discretionary annual operations and maintenance funds appropriated and received for the Project above normal maintenance requirements.

15. No later than six (6) months prior to the commencement of Inner Harbor Channel Dredging, GPA will establish a letter of credit or escrow fund on commercially reasonable terms agreed-upon by GPA, DHEC, and the Commission in the amount of Two Million Dollars (\$2,000,000). This amount will be adjusted annually for inflation based on the U.S. Bureau of

Labor Statistics CPI-U, U.S. City Average for All Items representing the annual change and any adjustments shall be made within thirty (30) days of the anniversary date of the initial deposit into the escrow fund on which the annual adjustment is based. Any interest that accrues in an escrow account will be applied toward the CPI-U adjustment for the following year(s). This letter of credit or escrow fund is to be held as a contingent fund to be drawn upon for operation and maintenance of the Oxygen Injection System should the Corps fail to provide for an annual appropriation for or otherwise fail to fund the operation and maintenance of the Oxygen Injection System. The letter of credit or escrow account will be maintained for a minimum of \$2,000,000 (as adjusted annually for inflation) at all times for fifty (50) years after completion of the SHEP.

16. GPA will contribute cash and land to address DHEC concerns about the sufficiency of mitigation for the Project's potential impacts on salt marsh and other environmental impacts as follows:

- a. GPA will contribute Three Million Dollars (\$3,000,000) to DHEC to be used for water quality monitoring and other initiatives in the Lower Savannah River Basin payable in Seven Hundred Fifty Thousand Dollar (\$750,000) increments, with the first payment commencing ninety (90) days following execution of the Project Partnership Agreement and no earlier than July 1, 2013, and the remaining payments to be paid on the annual anniversary date of the initial payment for the following three (3) years.
- b. GPA will contribute Three Million Dollars (\$3,000,000) to the South Carolina Department of Natural Resources to be used for monitoring and research of Shortnose and Atlantic Sturgeon and their habitat in the estuaries of the Savannah River, payable in Seven Hundred Fifty Thousand Dollar (\$750,000) increments, with the first payment commencing ninety (90) days following execution of the Project Partnership Agreement and no earlier than July 1, 2013, and the remaining payments to be paid on the annual anniversary date of the initial payment for the following three (3) years.
- c. GPA will contribute Fifteen Million Dollars (\$15,000,000) for conservation efforts, as follows. GPA will pay these funds into an escrow account on commercially reasonable terms agreed-upon by GPA, DHEC, and the Commission, which will be disbursed to the relevant payees within ten (10) days of completion of the Project. Any interest that accrues in a given year will be applied toward GPA's next payment.
 - i. Five Million Dollars (\$5,000,000) solely and exclusively for preservation of wetlands, acquisition of conservation easements, and/or upland buffers that directly benefit the Lower Savannah watershed to be paid to The South Carolina Conservation Bank, payable in increments of One Million Dollars (\$1,000,000), with the first payment commencing within sixty (60) days following initiation of Inner Harbor Channel Dredging and no earlier than July 1, 2014, and the remaining payments to be paid on the annual anniversary date of the initial payment for the following four (4) years.
 - ii. Five Million Dollars (\$5,000,000) to South Carolina DNR, with the stipulation that South Carolina DNR must use such funds solely and exclusively for the creation, restoration, or enhancement of wetlands in the Lower Savannah watershed, payable in increments of One Million Dollars (\$1,000,000), with the

first payment commencing within sixty (60) days following initiation of Inner Harbor Channel Dredging and no earlier than July 1, 2014, and the remaining payments to be paid on the annual anniversary date of the initial payment for the following four (4) years.

- iii. Five Million Dollars (\$5,000,000) to Ducks Unlimited, Southern Region, Wetlands America Trust ("DU"), with the stipulation that DU must use such funds solely and exclusively for preservation of wetlands and/or upland buffers in either state that directly benefit the Lower Savannah watershed, payable in increments of One Million Dollars (\$1,000,000), with the first payment commencing within sixty (60) days following initiation of Inner Harbor Channel Dredging and no earlier than July 1, 2014, and the remaining payments to be paid on the annual anniversary date of the initial payment for the following four (4) years.
 - iv. If the Project is completed before the scheduled payments set forth in II.B.3(a)-(c) have been made, GPA will pay any remaining payments due within ten (10) days of completion of the Project.
- d. GPA will contribute Twelve Million Five Hundred Thousand Dollars (\$12,500,000) to be used solely and exclusively for environmental and conservation projects in the Savannah River Basin to the Savannah River Restoration Board in increments of One Million Forty-One Thousand, Six Hundred Sixty-Six Dollars and Sixty-Seven Cents (\$1,041,666.67), with the first payment commencing sixty (60) days following initiation of Inner Harbor Channel Dredging and no earlier than July 1, 2014, and the remaining payments to be paid on the annual anniversary date of the initial payment for the following eleven years. Any interest that accrues in a given year will be applied toward GPA's next payment. GPA will pay these funds into an escrow account, which will be disbursed to the Savannah River Restoration Board upon completion of the Project. Any installment payments due after completion of the Project will be paid directly to the Savannah River Restoration Board. The Savannah River Restoration Board will be established and operated as a bi-state board comprised of representatives of the following agencies and organizations: Georgia DNR, Georgia Environmental Protection Division, South Carolina DNR, DHEC, Commission, Savannah Riverkeeper, S.C. Coastal Conservation League, the S.C. Wildlife Federation, Georgia Wildlife Federation and GPA. The mission of the Savannah River Restoration Board will be to fund projects in the Lower Savannah River watershed that improve the water quality and aquatic functioning of the Savannah River, with a priority on oxbow restoration projects.
 - e. Recipients of GPA's Fifteen Million Dollar (\$15,000,000) funding contributions set forth in Subsection (c) shall provide an annual summary to GPA regarding what projects or activities were completed with the funds within the previous year.
 - f. Within ninety (90) days following execution of the Project Partnership Agreement for the SHEP, the GPA will cause to be transferred from the Georgia Department of Transportation, by quitclaim deed containing an automatic reversion provision, as set forth below, approximately 2,000 acres of salt marsh as generally reflected on the attached Exhibit A, exact boundaries and acreage of which to be determined by a

survey to be obtained by GPA, to the Commission, assuming it has received authority to hold property (if not, the property shall be transferred to the State of South Carolina). If the Project is terminated prior to initiation of Inner Harbor Channel Dredging, the property will automatically revert to the Georgia Department of Transportation in as is condition. The deed shall contain the following reversion provision:

TO HAVE AND TO HOLD the said real property unto Grantee, Grantee's successors and assigns, provided, however, if the Project is terminated at any time prior to the initiation of Inner Harbor Channel Dredging the said real property shall automatically revert back to the Grantor without the necessity of reentry and without the necessity of notice, demand, any action brought or taken by Grantor, any instrument or conveyance executed or delivered by Grantee, any liability of Grantor to make or pay any compensation therefore to Grantee or Grantee's successors and assigns, it being intended hereby to create a determinable fee in Grantee with a possibility of reverter being retained by Grantor so that when an above-stated event shall occur the title of Grantee to said real property shall automatically be at an end and by operation of law the title to said real property shall immediately revert to and revest in Grantor in the same state of title as initially conveyed to Grantee without prejudice to any other right, claim, or interest Grantee may have or had prior to the date of recordation of this deed. After such reversion, upon Grantor's written request, Grantee will execute and deliver a quitclaim deed to Grantor conveying whatever right, title, and interest was conveyed by the Grantor within thirty days from receipt of Grantor's written request. The failure of Grantee to execute and deliver such quitclaim deed shall not prevent the automatic reversion of fee simple title in said real property to Grantor.

17. GPA's obligations under this certification will be suspended if (a) the Project is stayed or enjoined, (b) the State Approvals (this certification and the Commission's permit for the Project) are revoked, rescinded, modified or stayed, or (c) after the initiation of Inner Harbor Channel Dredging, Inner Harbor Channel Dredging is suspended or ceased for any reason and after GPA provides written notice to the Conservation Groups, DHEC, and the Commission of such suspension or cessation which shall state the reason for such suspension or cessation and the estimated time period of the length of such suspension or cessation. GPA's suspended obligations will resume once the suspended activity resumes and after notice to the Conservation Groups, DHEC, and the Commission provided no later than ten (10) days prior to the resumption of dredging activities. If the Project is, or the dredging activities thereof are, suspended through the exercise of the rights under Section 11.g or 12.d by the Commission or DHEC, all of GPA's pending and future funding obligations set forth in 16.a through 16.c will be suspended, to resume once the Project resumes. If the Project is, or the dredging activities thereof are, suspended through the exercise of the rights under Section 11.g or 12.d by the Conservation Groups, all of GPA's pending and future funding obligations set forth in 16.d will be suspended, to resume once the Project resumes.

18. This certification incorporates by reference all terms and conditions of:
 - a. the Final Biological Opinion issued by the National Marine Fisheries Service on or about November 4, 2011;
 - b. the Section 401 Water Quality Certification issued by the Georgia Department of Natural Resources on or about February 16, 2011;
 - c. the Programmatic Agreement for Cultural Resources with the South Carolina Historic Preservation Office, Appendix G of the final EIS.
19. To the extent any conflict may arise or exist between the specific terms and conditions set forth herein and the terms and conditions of other governmental approvals incorporated into this certification, the terms and conditions specifically set forth herein shall govern.
20. The Corps shall provide a comprehensive report at: (a) the end of pre-construction; (b) the end of construction; and (c) the end of the 10-year monitoring program, as such periods are described in Appendix D of the Final EIS. Each comprehensive report shall be provided to DHEC and the Commission and made available on the Project's public website and as provided in Appendix D to the Final EIS.
21. This certification does not convey and will not be interpreted as conveying, expressly or implicitly, any property interest.
22. DHEC reserves the right to impose additional conditions on this certification to respond to unforeseen, specific problems that may arise and to take any enforcement action within its statutory authority, in its discretion, as necessary to ensure compliance with South Carolina water quality standards and the conditions of this certification. This certification and DHEC's Coastal Zone Consistency Determination satisfy existing DHEC permitting requirements applicable to the Project as described in the Final EIS. DHEC reserves the right to require additional certifications or permits for future changes to the project and activities outside the scope of the project as described in the EIS, or as required by changes to applicable law.

EXHIBIT B

EXHIBIT B
Commission Terms and Conditions

Terms and Conditions

The Commission must balance economic development with the protection of the environment to ensure the responsible implementation of the SHEP. The Commission represents the State of South Carolina “in all matters pertaining to the navigability, depth, dredging, wastewater and sludge disposal, and related collateral issues in regard to the use of the Savannah River as a waterway for ocean-going container or commerce vessels,” which includes the SHEP. S.C. Code Ann. § 54-6-10(A). The DHEC and Commission approvals and authorizations satisfy any and all South Carolina permitting requirements applicable to the Project. Based upon and to implement and achieve the goal of fully mitigating for the impacts from the SHEP and in furtherance of the analysis and evaluation undertaken by the Commission, and in satisfaction of all authority and jurisdiction conferred upon the Commission to permit, regulate, authorize, and approve construction of the SHEP on behalf of the State of Carolina, including but not limited to compliance with the S.C. Pollution Control Act, S.C. Code Ann. § 48-1-10 et seq., the Maritime Commission Act, S.C. Code Ann. § 54-6-10, and the Navigable Waters Permit requirements, S.C. Code Ann. Regs. 19-450, the Commission imposes the following terms and conditions to protect the environment and natural resources of the State of South Carolina, mitigate for all of the environmental impacts of the SHEP, and provide reasonable assurance that the SHEP will not cause a violation of water quality or other applicable environmental standards, which are incorporated herein by reference.

These specific terms and conditions are in addition to those general terms and conditions set forth in South Carolina law pursuant to S.C. Code Ann. Regs. 19-450.4, which are incorporated herein by reference.

1. The Corps may construct the Project as described in the Final EIS dated January 2012 and revised in July 2012 and approved by the Chief of Engineers Report dated August 17, 2012, and Record of Decision dated October 26, 2012.

EXHIBIT B
Commission Terms and Conditions

2. All hopper dredging activities will only take place from December 1 through March 31.
3. All dredging in the Inner Harbor upstream of Station 63+000 is prohibited during the striped bass spawning period of April 1 to May 15.
4. The Commission may make periodic inspections of the Project construction and mitigation implementation sites that are reasonable in scope on no less than one week's advance notice and subject to adherence to personal protective equipment requirements contained in the Corps Safety Manual (EM 385-1-1).
5. In addition to the water quality monitoring set forth in or required by the Final EIS and other governmental approvals, the Corps will provide continuous daily water quality monitoring with two additional monitors at locations to be jointly agreed-upon by the Corps, Commission, and DHEC, to be installed simultaneously with the eight continuous water quality monitoring stations proposed in Appendix D of the Final EIS. These two additional continuous water quality monitoring stations are intended to supplement the eight continuous water quality monitoring stations proposed in Appendix D of the Final EIS and will be subject to the same criteria for Pre-Construction Monitoring, Monitoring During Construction and Post Construction Monitoring as specified in Appendix D to the Final EIS. A copy of the monthly monitoring reports will be provided to the Commission and will be publicly available through the project's website within 30 days after the Corps' receipt of the monitoring report. Should adverse conditions, such as weather or vandalism, impair operations of a water quality monitor, the Corps will undertake reasonable efforts to restore operation of the monitor as soon as possible. This provision will terminate at the end of the 10-year Post Construction Monitoring Period.
6. The Corps shall provide a comprehensive report at: (a) the end of pre-construction; (b) the end of construction; and (c) the end of the 10-year monitoring program, as such periods are described in Appendix D of the Final EIS. Each comprehensive report shall be provided to DHEC and the Commission and made available on the Project's public website and as provided in Appendix D to the Final EIS.
7. The Corps will refine and update the SHEP hydrodynamic (EFDC) and water quality (WASP) models specifically for DO. The updated model will take advantage of previous modeling efforts, including U.S. Environmental Protection Agency's TMDL model, and the most current information collected in the Savannah River harbor and estuary. The product will be complete DO model scenarios comparing instream DO concentrations with and without operation of the Oxygen Injection System.

The purpose of the modeling and monitoring is to confirm that the Oxygen Injection System will mitigate for the DO impacts of the Project as shown by comparing actual DO levels in the modeled area, from Station 0+000 upstream to River Mile 27.8, to DO levels in the without-Project scenario (the "Success Criteria").
8. Prior to commencement of any Inner Harbor Channel Dredging, the Corps will test and evaluate the downriver Oxygen Injection System that is to be located at the

EXHIBIT B
Commission Terms and Conditions

Hutchinson Island location to demonstrate its ability to mitigate dissolved oxygen impacts of the SHEP. Dredging of the Outer Harbor can occur prior to this testing.

- a) The Oxygen Injection System at the downriver Hutchinson Island location must be operated and instream DO must be monitored continuously for a period of 59 days (2 lunar cycles). Continuous daily water quality monitoring must be conducted during this period at locations specified in and pursuant to the monitoring plan. This 59-day period of operation is referred to herein as the "Test Run."
 - b) Following the Test Run and analysis of the modeling results and monitoring data, the Corps will provide a report to the Conservation Groups, Commission and DHEC comparing the monitoring data collected during the Test Run to the modeling results.
 - c) The Conservation Groups, Commission and DHEC will have thirty (30) days to evaluate and review the Test Run report and to provide comments and feedback to the Corps and the Adaptive Management Team. The Corps, Conservation Groups, Commission and DHEC each will independently evaluate the Test Run report and other relevant information to assess achievement of the Success Criteria.
 - d) If the Corps determines that the Oxygen Injection System test meets the Success Criteria, it will commence Inner Harbor Channel Dredging no sooner than fourteen (14) days after the 30-day comment period in subsection (c) has ended. DHEC, the Commission, and the Conservation Groups each reserves the right to take any appropriate action if its independent determination is that the Success Criteria has not been met, including but not limited to suspension, rescission, and revocation of this permit, initiation of an enforcement or other legal action, and/or termination of this Agreement. The Corps does not waive any objection or defense to such actions, including any objection or defense based on federal preemption, sovereign immunity, or immunity from state regulation.
 - e) Copies of the data, modeling inputs, modeling results, monitoring data, and reports will be provided to all Parties by the Corps as soon as available to allow the Conservation Groups, Commission and DHEC to review the information simultaneously with the Corps and Adaptive Management Team.
9. Following the installation of the entire Oxygen Injection System, the monitoring and testing procedure will be conducted as set forth below.
- a) The entire Oxygen Injection System must be operated, and instream DO must be monitored continuously for a period of 59 days (2 lunar cycles), of which at least one 29.5 day testing (one lunar cycle) must occur in July, August, or September immediately following the installation of the Oxygen Injection System. Continuous daily water quality monitoring must be conducted during this period at locations specified in and pursuant to the monitoring plan. This 59-day period of operation is referred to herein as the "Start-up Run."

EXHIBIT B
Commission Terms and Conditions

- b) Following the Start-up Run and analysis of the modeling results and monitoring data, the Corps will provide a report comparing the monitoring data collected during the Start-up Run to the modeling results to the Conservation Groups, Commission and DHEC.
 - c) The Conservation Groups, Commission and DHEC will have sixty (60) days to evaluate and review the Start-up Run report and to provide comments and feedback to the Corps and the Adaptive Management Team. The Corps, Conservation Groups, Commission, and DHEC each will independently evaluate the Start-up Run report and other relevant information to assess achievement of the Success Criteria.
 - d) If the Corps determines that the Oxygen Injection System test meets the Success Criteria, Inner Harbor Channel Dredging will continue. DHEC, the Commission, and the Conservation Groups each reserves the right to take any appropriate action if its independent determination is that the Success Criteria has not been met, including but not limited to suspension, rescission, and revocation of this permit, initiation of an enforcement or other legal action, and/or termination of this Agreement. The Corps does not waive any objection or defense to such actions, including any objection or defense based on federal preemption, sovereign immunity, or immunity from state regulation.
 - e) Copies of the data, modeling inputs, modeling results, monitoring data, and reports will be provided to all Parties by the Corps as soon as available to allow the Conservation Groups, Commission and DHEC to review the information simultaneously with the Corps and Adaptive Management Team.
10. The Savannah District of the Corps will make the dissolved oxygen system a top priority for discretionary annual operations and maintenance funds appropriated and received for the Project above normal maintenance requirements.
11. The Corps shall conduct the following monitoring:
- a) During the SHEP deepening activities, cadmium concentrations in the discharge shall be monitored weekly from those Confined Disposal Facilities (CDF) receiving sediments from the four known reaches within the Savannah Harbor having elevated cadmium concentration in the sediments. U.S. Environmental Protection Agency laboratory testing methodology must have a detection limit of at least 0.7 micrograms per liter (ug/l). Monitoring shall continue at these CDF discharge points as long as discharge is present and until all dredged sediments have been dewatered, stabilized and capped as per the Final EIS. Data shall be reported to DHEC and the Commission quarterly in micrograms per liter within thirty (30) days of the end of each calendar quarter.
 - b) Following the installation of a stable clean cap within the CDFs that receive cadmium-bearing sediments, cadmium shall be monitored weekly for a period of one year. Data shall be reported to DHEC and the Commission quarterly in micrograms per liter within thirty (30) days of the end of each calendar quarter.

EXHIBIT B
Commission Terms and Conditions

- c) Dewatering discharge from all CDFs shall be monitored by the Corps and reported to DHEC and the Commission monthly and due within thirty (30) days following the end of each reporting period. Monitoring reports shall include the location of the discharge point, sampling point, dates of discharge, total suspended solids, dissolved oxygen, pH, temperature, salinity, turbidity and conductivity. The Corps will monitor weekly when there is a discharge and provide monthly reports to DHEC and the Commission within thirty (30) days of the end of each reporting period.
 - d) The monitoring data will be evaluated as provided in Appendix D of the Final EIS.
12. The Corps will coordinate with the state resource agencies, including the Commission, in the implementation of the Monitoring and Adaptive Management Plan as provided in Appendix D of the Final EIS.
 13. The Corps will comply with the terms and conditions of the Final Biological Opinion issued by the National Marine Fisheries Service on or about November 4, 2011, which are incorporated herein by reference.
 14. The Corps will comply with the terms and conditions of the Section 401 Water Quality Certification issued by the Georgia Department of Natural Resources ("Georgia DNR") on or about February 16, 2011, which are incorporated herein by reference.
 15. The Corps will comply with the terms and conditions of the Programmatic Agreement for Cultural Resources with the South Carolina State Historic Preservation Office on or about November 30, 2011, which are incorporated herein by reference.
 16. To the extent any conflict may arise or exist between the South Carolina-specific terms and conditions set forth herein and the terms and conditions of other governmental approvals incorporated by reference, the terms and conditions specifically set forth herein shall govern.
 17. The Corps will comply with the Monitoring and Adaptive Management Plan provided as Appendix D of the Final EIS.
 18. No later than six (6) months prior to the commencement of Inner Harbor Channel Dredging, GPA will establish a letter of credit or escrow account on commercially reasonable terms agreed-upon by GPA, DHEC and the Commission in the amount of Two Million Dollars (\$2,000,000). This amount will be adjusted annually for inflation based on the U.S. Bureau of Labor Statistics CPI-U, U.S. City Average for All Items representing the annual change. Any interest that accrues in an escrow account will be applied toward the CPI-U adjustment for the following year(s). This letter of credit or escrow account is to be held as a contingent fund to be drawn upon for operation and maintenance of the Oxygen Injection System should the Corps fail to provide for an annual appropriation for or otherwise fail to fund the operation and maintenance of the Oxygen Injection System. The letter of credit or escrow account will be maintained for a minimum of \$2,000,000 (as adjusted annually for inflation) at all times for fifty (50) years after completion of the Project.

EXHIBIT B
Commission Terms and Conditions

19. GPA will contribute cash and land to address the Commission's concerns about the sufficiency of mitigation for the Project's potential environmental impacts as follows:
- a) GPA will contribute Three Million Dollars (\$3,000,000) to DHEC to be used solely and exclusively for water quality monitoring and other initiatives in the Lower Savannah River Basin, payable in Seven Hundred Fifty Thousand Dollar (\$750,000) increments, with the first payment commencing ninety (90) days following execution of the Project Partnership Agreement and no earlier than July 1, 2013, and the remaining payments to be paid on the annual anniversary date of the initial payment for the following three (3) years.
 - b) GPA will contribute Three Million Dollars (\$3,000,000) to the South Carolina Department of Natural Resources ("South Carolina DNR") to be used solely and exclusively for monitoring and research of Shortnose and Atlantic Sturgeon and their habitat in the estuaries of the Savannah River payable in Seven Hundred Fifty Thousand Dollar (\$750,000) increments, with the first payment commencing ninety (90) days following execution of the Project Partnership Agreement and no earlier than July 1, 2013, and the remaining payments to be paid on the annual anniversary date of the initial payment for the following three (3) years.
 - c) GPA will contribute Fifteen Million Dollars (\$15,000,000) for conservation efforts, as follows. GPA will pay these funds into an escrow account on commercially reasonable terms agreed-upon by GPA, DHEC, and the Commission, which will be disbursed to the relevant payees within ten (10) days of completion of the Project. Any interest that accrues in a given year will be applied toward GPA's next payment.
 - (1) Five Million Dollars (\$5,000,000) solely and exclusively for preservation of wetlands, acquisition of conservation easements, and/or upland buffers that directly benefit the Lower Savannah watershed to be paid to The South Carolina Conservation Bank, payable in increments of One Million Dollars (\$1,000,000), with the first payment commencing within sixty (60) days following initiation of Inner Harbor Channel Dredging and no earlier than July 1, 2014, and the remaining payments to be paid on the annual anniversary date of the initial payment for the following four (4) years.
 - (2) Five Million Dollars (\$5,000,000) to South Carolina DNR, with the stipulation that South Carolina DNR must use such funds solely and exclusively for the creation, restoration, or enhancement of wetlands in the Lower Savannah watershed, payable in increments of One Million Dollars (\$1,000,000), with the first payment commencing within sixty (60) days following initiation of Inner Harbor Channel Dredging and no earlier than July 1, 2014, and the remaining payments to be paid on the annual anniversary date of the initial payment for the following four (4) years.
 - (3) Five Million Dollars (\$5,000,000) to Ducks Unlimited, Southern Region, Wetlands America Trust ("DU"), with the stipulation that DU must use such funds solely and exclusively for preservation of

EXHIBIT B
Commission Terms and Conditions

wetlands and/or upland buffers in either state that directly benefit the Lower Savannah watershed, payable in increments of One Million Dollars (\$1,000,000), with the first payment commencing within sixty (60) days following initiation of Inner Harbor Channel Dredging and no earlier than July 1, 2014, and the remaining payments to be paid on the annual anniversary date of the initial payment for the following four (4) years.

- (4) If the Project is completed before the scheduled payments set forth in this Section (1)-(3) have been made, GPA will pay any remaining payments due within ten (10) days of completion of the Project.
 - (5) Recipients of GPA's Fifteen Million Dollar (\$15,000,000) funding contributions set forth in this Subsection (c) shall provide an annual summary to GPA regarding what projects or activities were completed with the funds within the previous year.
- d) GPA will contribute Twelve Million Five Hundred Thousand Dollars (\$12,500,000) to be used solely and exclusively for environmental and conservation projects in the Savannah River Basin to the Savannah River Restoration Board in increments of One Million Forty-One Thousand, Six Hundred Sixty-Six Dollars and Sixty-Seven Cents (\$1,041,666.67), with the first payment commencing sixty (60) days following initiation of Inner Harbor Channel Dredging and no earlier than July 1, 2014, and the remaining payments to be paid on the annual anniversary date of the initial payment for the following eleven years. Any interest that accrues in a given year will be applied toward GPA's next payment. GPA will pay these funds into an escrow account, which will be disbursed to the Savannah River Restoration Board upon completion of the Project. Any installment payments due after completion of the Project will be paid directly to the Savannah River Restoration Board. The Savannah River Restoration Board will be established and operated as a bi-state board comprised of representatives of the following agencies and organizations: Georgia DNR, Georgia Environmental Protection Division, South Carolina DNR, DHEC, Commission, Savannah Riverkeeper, S.C. Coastal Conservation League, the S.C. Wildlife Federation, Georgia Wildlife Federation and GPA. The mission of the Savannah River Restoration Board will be to fund projects in the Lower Savannah River watershed that improve the water quality and aquatic functioning of the Savannah River, with a priority on oxbow restoration projects.
20. GPA will contribute cash and land to address the Commission's concerns about the sufficiency of mitigation for the Project's potential environmental impacts as follows. Within ninety (90) days following execution of the Project Partnership Agreement, the GPA will cause to be transferred from the Georgia Department of Transportation, by quitclaim deed containing an automatic reversion provision, as set forth below, approximately 2,000 acres of salt marsh as generally reflected on the attached Exhibit A, exact boundaries and acreage of which to be determined by a survey to be obtained by GPA, to the Commission. If the Project is terminated prior

EXHIBIT B
Commission Terms and Conditions

to initiation of Inner Harbor Channel Dredging, the property will automatically revert to the Georgia Department of Transportation in as is condition. The deed shall contain the following reversion provision:

TO HAVE AND TO HOLD the said real property unto Grantee, Grantee's successors and assigns, provided, however, if the Project is terminated at any time prior to the initiation of Inner Harbor Channel Dredging the said real property shall automatically revert back to the Grantor without the necessity of reentry and without the necessity of notice, demand, any action brought or taken by Grantor, any instrument or conveyance executed or delivered by Grantee, any liability of Grantor to make or pay any compensation therefore to Grantee or Grantee's successors and assigns, it being intended hereby to create a determinable fee in Grantee with a possibility of reverter being retained by Grantor so that when an above-stated event shall occur the title of Grantee to said real property shall automatically be at an end and by operation of law the title to said real property shall immediately revert to and revest in Grantor in the same state of title as initially conveyed to Grantee without prejudice to any other right, claim, or interest Grantee may have or had prior to the date of recordation of this deed. After such reversion, upon Grantor's written request, Grantee will execute and delivery a quitclaim deed to Grantor conveying whatever right, title, and interest was conveyed by the Grantor within thirty days from receipt of Grantor's written request. The failure of Grantee to execute and deliver such quitclaim deed shall not prevent the automatic reversion of fee simple title in said real property to Grantor.

21. GPA commits to work with the City of Augusta and Georgia EPD as Augusta complies with applicable responsibilities arising from Federal Energy Regulatory Commission licensing of the Augusta Canal and Diversion project, such responsibilities to include support of the fisheries by providing adequate flows.
22. Prior to initiation of Inner Harbor Channel Dredging, GPA, at its sole expense, will retain the firm Moffatt & Nichol to evaluate the effects that cadmium disposal in confined disposal facilities 14A and 14B may have on the construction of a terminal at those sites in the future and submit such report to DHEC and the Commission.
23. GPA's obligations in Terms and Conditions 19-22 will be suspended if (a) the Project is stayed or enjoined, (b) the State Approvals are revoked, rescinded, modified or stayed, or (c) after the initiation of Inner Harbor Channel Dredging, Inner Harbor Channel Dredging is suspended or ceased for any reason and after GPA provides written notice to the Commission of such suspension or cessation which shall state the reason for such suspension or cessation and the estimated time period of the length of such suspension or cessation. GPA's suspended obligations will resume once the suspended activity resumes and after notice to the Commission provided no later than ten (10) days prior to the resumption of dredging activities. If the Project is, or the dredging activities thereof are, suspended through the exercise of the rights under Terms and Conditions 8(d) or 9(d) by the Commission or DHEC, all of GPA's pending and future funding obligations set forth in Term and Condition 19(a)-(c) will be suspended, to resume once the Project resumes. If the

EXHIBIT B
Commission Terms and Conditions

Project is, or the dredging activities thereof are, suspended through the exercise of the rights under Terms and Conditions 8(d) or 9(d) by the Conservation Groups, all of GPA's pending and future funding obligations set forth in Term and Condition 19(d) will be suspended, to resume once the Project resumes.

24. The Corps must construct the Project in a manner that will not violate applicable law.
25. This authorization may be suspended, rescinded, revoked, modified, amended, or revised by further action of the Commission in its sole discretion after review of a request for such action by the applicant and the evaluation of appropriate supporting documentation or *sua sponte* on the Commission's own initiative based on a change of circumstances or conditions, including changes to the Project.



House of Representatives

State of South Carolina

William M. "Bill" Hixon

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Committee:

Agriculture, Natural Resources
and Environmental Affairs Committee
Interstate Cooperation – Treasurer

April 9, 2019

U.S. Army Corps of Engineers
Savannah District
ATTN: Ms. Robin Armetta (PM-P)
100 West Oglethrope Avenue
Savannah, GA 31401-3604

Dear Ms. Armetta:

While I understand the Savannah Harbor Expansion Project is important to the state of Georgia, it is also equally important to the City of North Augusta, South Carolina, that it maintain North Augusta's riverfront environment. Therefore, we do not want the Savannah River Lock and Dam removed. Only repaired to working order.

Please reference the attached article on the status of Shortnose Sturgeon on the Savannah River. The National Marine Study funded the research done by Douglas L. Peterson, professor at the University of Georgia, and his graduate assistant Derek L. Bahr. According to the study there is no evidence Shortnose Sturgeon are endangered. The attached study suggests the Savannah River may contain the second largest population of Shortnose Sturgeon.

I visited the locks and saw that the floodgates can be raised up and down. Why did your department tell me that they could not be used for flood control? At this point, there are still many unanswered questions about the true condition of the lock and dam and the cost to repair it. These gates were used to lower the river to show what it would look like at the lower level.

The enclosed letter from the City of North Augusta's Mayor Robert A. Pettit is on point. Is your proposal cost effective? Does it take into consideration the health and safety of our residents and visitors? These questions, along with many others, should be considered.

After reading the letter submitted to you by SCDNR (copy enclosed) I am in full agreement with our state agency's requests and concerns. I would like to see additional information before the recommended plan is implemented. SCDNR was one of the agencies that conducted the original sturgeon fish study.

April 9, 2019
Page 2

As you can see from the enclosed photographs, lowering the pool has had a negative impact for property owners along the riverfront. As the river was being drawn down to the intended level, the walls of the riverbank began to cave. Because of this, the river was not lowered to its intended level. Ms. Armetta, how would you feel if this was your home that was impacted by the proposed project? I am told property values would decrease 30% to 40% if the river is drawn down to the proposed project level. Our riverfront is important not only to our residents, but also to our businesses, visitors and economic development. North Augusta has invested millions of dollars on their riverfront to attract businesses, visitors, and tourist. For example, the money has been spent to create the Greenway, Riverview Park, the new SRP Park, and the Crown Plaza and Convention Center Complex. Replacing the Savannah River Lock and Dam with rock weir would be disastrous to North Augusta and the surrounding area.

We want this to continue to be South Carolina's Riverfront, not South Carolina's Creekfront!

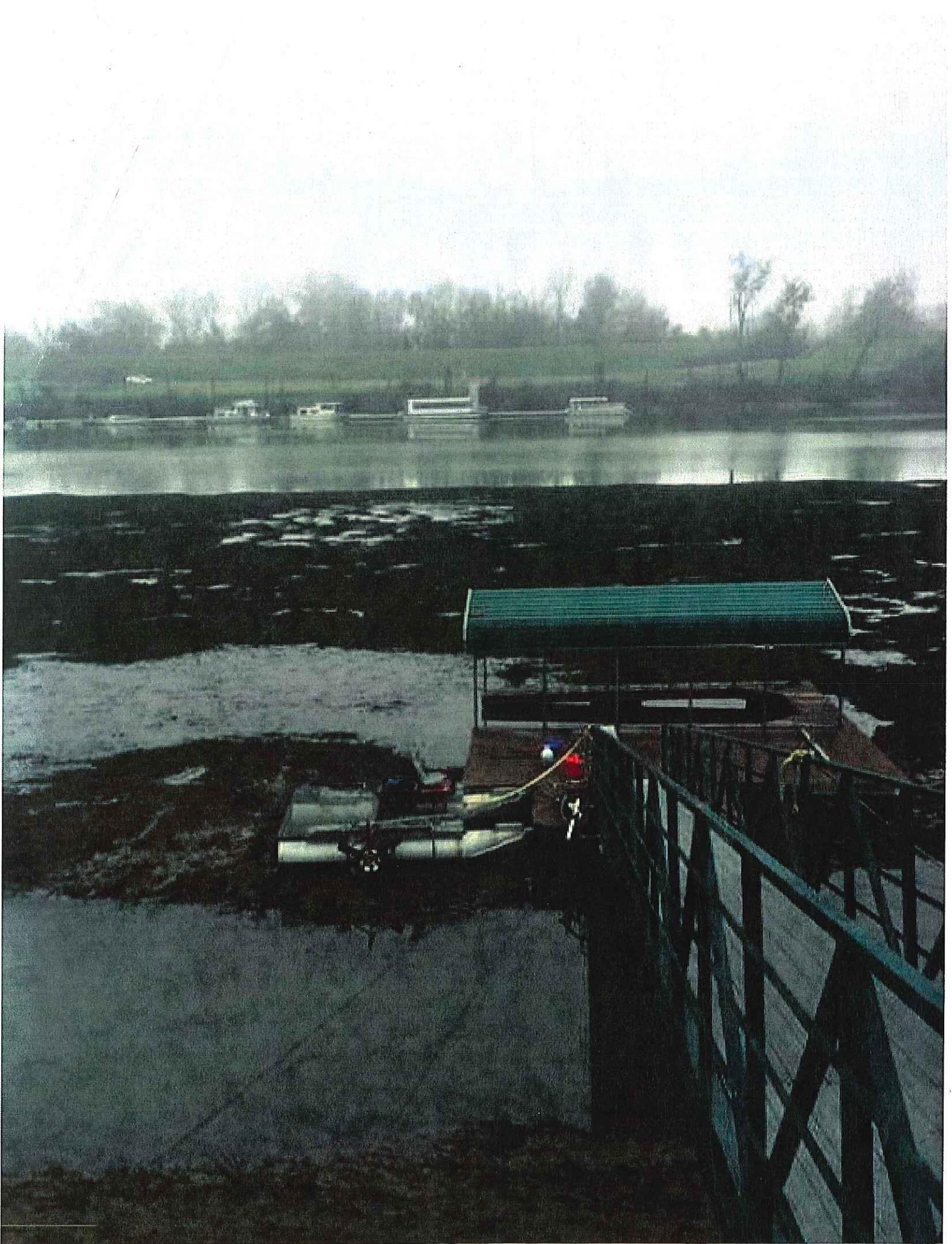
Sincerely,



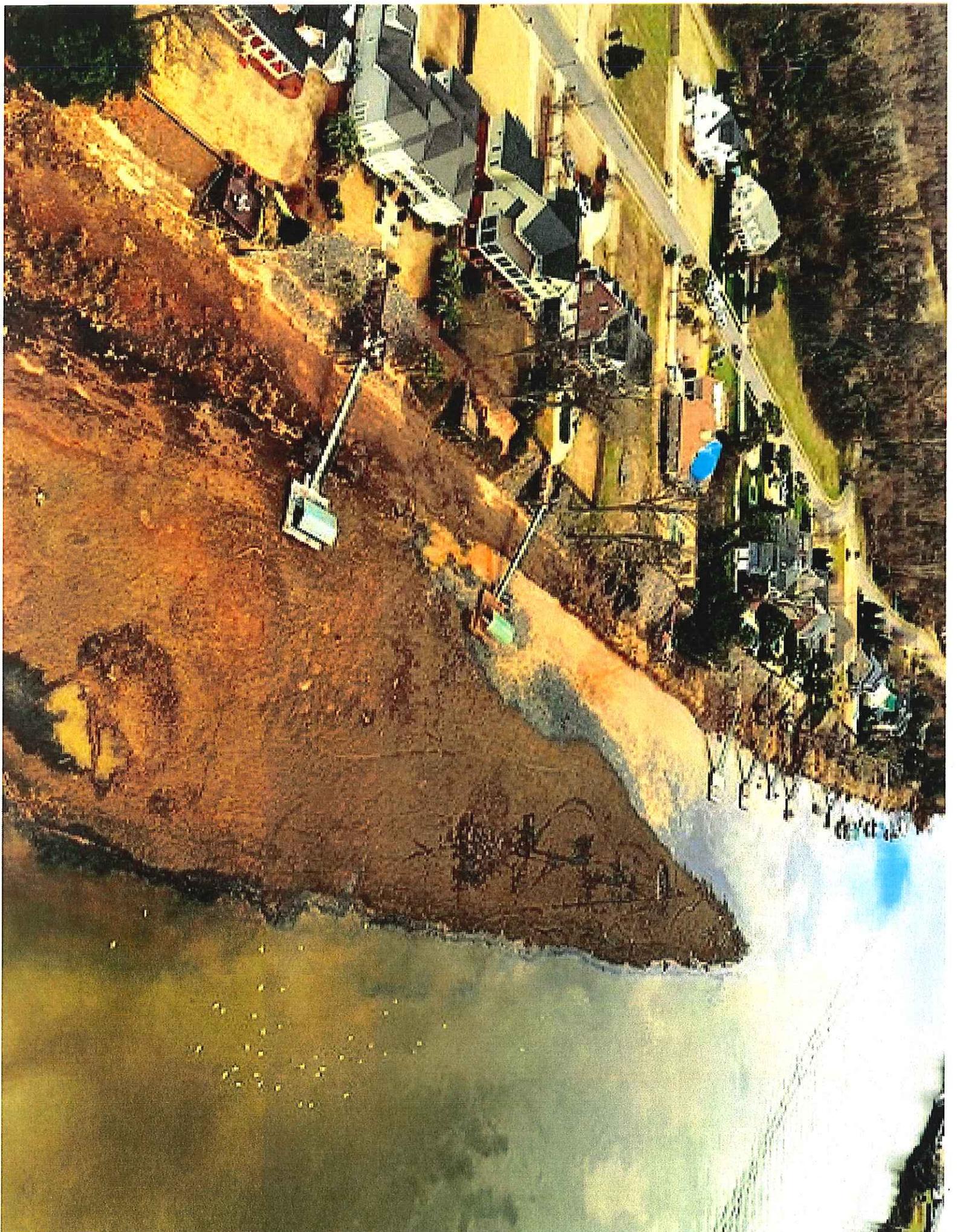
William M. "Bill" Hixon
House District 83

C: Honorable Johnny Isakson
Honorable David Perdue
Honorable Rick W. Allen
Honorable Brian Kemp
Honorable Jeff Duncan
Honorable Lindsay Graham
Honorable Tim Scott
Honorable Joe Wilson

Enclosures







South Carolina Department of Natural Resources



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Alvin A. Taylor
Director
Lorianne Riffin
Director, Office of
Environmental Programs

March 28, 2019

Ms. Robin Armetta
Savannah District
U.S. Army Corps of Engineers, Planning Division
100 West Oglethorpe Avenue
Savannah, Georgia 31401-3640

REFERENCE: Draft Integrated Post Authorization Analysis Report & Supplemental
Environmental Assessment
Fish Passage at New Savannah Bluff Lock and Dam

Dear Ms. Armetta,

Personnel with the South Carolina Department of Natural Resources (SCDNR) have reviewed the above referenced Draft Integrated Post Authorization Analysis Report (PAAR) & Supplemental Environmental Assessment (SEA) prepared by the United States Army Corps of Engineers (Corps). The SCDNR offers the following comments for your consideration in finalizing the reports.

Background: The Draft PAAR SEA supplements the Final Environmental Impact Statement (FEIS) for the Savannah Harbor Expansion Project (SHEP). The purpose of the proposed action is to mitigate for impacts to two endangered sturgeon species, the Shortnose and Atlantic Sturgeon, by constructing a fish passage at the New Savannah Bluff Lock and Dam (NSBLD); thus providing access to habitat, such as the Augusta Shoals, for fish communities. The report documents the evaluation the Corps performed to identify how the previously authorized fish passage mitigation feature should be modified to meet the requirements of the Water Infrastructure Improvements for the Nation Act (WIIN) and still meet the mitigation requirements of the SHEP.

The Draft PAAR SEA describes the No Action Alternative (NAA) and eleven structural alternatives to address the study objectives and constraints. The objectives and constraints include the ability to provide effective fish passage, recreational navigation, water supply, recreation, and flooding. Seven of the eleven alternatives were eliminated during the initial screening evaluation due to one or more factors that either did not meet the project objectives or created adverse impacts due to flooding, recreation, or water supply. The NAA and four

*Draft Integrated Post Authorization Analysis Report & Supplemental Environmental Assessment
Fish Passage at New Savannah Bluff Lock and Dam
March 28, 2019*

alternatives were retained for further evaluation. In the process of examining the final array of alternatives, it was determined that one alternative (Alternative 2-6) could be refined to include varying weir heights. Therefore, the final array of alternatives included the NAA and seven action alternatives:

- NAA (the authorized plan in the 2012 SHEP FEIS);
- Alternative 1-1 (Repair lock wall Georgia side Fish Passage);
- Alternative 2-3 (Fixed Crest Weir, 500' Wide at Elevation 106.2' NAVD 88);
- Alternative 2-6a (Fixed Crest Weir (500' Wide at Elevation 109.2' NAVD88) with Bench);
- Alternative 2-6b (Fixed Crest Weir (500' Wide at Elevation 106.2' NAVD88) with Bench);
- Alternative 2-6c (Fixed Crest Weir (500' Wide at Elevation 107.2' NAVD88) with Bench);
- Alternative 2-6d (The Proposed Action: Fixed Crest Weir (500' Wide at Elevation 108.2' NAVD88) with Bench); and
- Alternative 2-8 (Fixed Crest Weir (500' Wide at Elevation 109.2' NAVD88) with 2 Gates).

The seven newly proposed alternatives would change the design of the fish passage structure to either an off-channel rock ramp fish bypass structure on the Georgia side at NSBLD or a full-width in-channel rock ramp weir. The full width in-channel weir alternatives would involve deauthorizing the NSBLD; inactivating the lock and dam by cutting off the upper portion of the dam down to the sill and removing the lock structure; and constructing the previously mentioned in-channel rock weir to facilitate fish passage and retain the pool above the NSBLD. These are discussed in greater detail below.

NAA (the 2012 SHEP FEIS “authorized plan”): The no action alternative would include the design and recommendations in the previously authorized SHEP 2012 FEIS which includes construction of an off-channel fish passage structure on the South Carolina side and retains the existing NSBLD. The Corps has determined that this alternative can no longer be implemented as originally planned because it is not consistent with the requirements of the WIIN Act passed in 2016. SCDNR provided comments to the USFWS on this design in a letter dated February 17, 2016 in response to the Fish and Wildlife Coordination Act Report (FWCAR). The same concerns expressed then remain which are that the NAA design needs to ensure that no sturgeon (juvenile nor adult) will bypass the entrance channel of the fishway coming downstream. If this were to occur, it likely would result in sturgeon being trapped just upstream of the dam, passing through the gates at high velocities to the rocks below or being impinged. DNR also recommended that the proposed sheet pile guide wall at the upstream entrance be replaced with a rock wing wall consisting of large boulders and that the design be modified to include High Terrace resting pools to allow sturgeon to successfully move upstream. Without additional data and as currently proposed, this alternative is not acceptable.

Alternative 1-1 (Repair lock wall, Georgia side Fish Passage): Alternative 1-1 proposes to repair the NSBLD gates and piers and the riverside lock wall and construct a 200' wide fish

ramp structure through the lock chamber and into the adjacent area of the park on the Georgia side of the river. The fish passage structure would be constructed with boulders and stone sized following the same design that was previously approved for the bypass and have a 2% slope upstream to the weir crest, and a 10% slope upstream from the crest to the riverbed. SCDNR has concerns about the lack of sufficient information on hydraulics of Alternative 1-1 to accurately quantify the upper design flow and conditions at the fishway entrance which may represent a constraint on the availability and effectiveness of fish passage conditions at the site. Because of the uncertainties regarding hydraulics at the bypass entrance and the possibility of certain conditions leading to delay or reduced amounts of fish passage of fish approaching on the South Carolina side of the river, SCDNR does not find this alternative acceptable.

Alternative 2-3 (Fixed Crest Weir, 500' Wide at Elevation 106.2' NAVD 88): Alternative 2-3 proposes to remove the lock and dam, including the foundation, and construct a full-width (500') fixed crest weir with a rock ramp sloping upstream from the existing dam location. The fish passage structure would be constructed with boulders and stone sized following the same design that was previously approved for the bypass and have a 2% slope upstream to the weir crest, and a 10% slope upstream from the crest to the riverbed. SCDNR prefers the full-width in-channel fishway over the off-channel fishway design as it has a higher likelihood of passing diadromous fish without delay. SCDNR does believe that this alternative would allow migrating shad and herring to access upstream spawning and nursery habitat. However, as noted in a comment letter to the USFWS on the Draft FWCAR (February 17, 2016), SCDNR continues to have concerns about the relatively steep slope (10%) of the rock ramp on the upstream side of the proposed weir. In the Region 5 USFWS guidance document on fish passage design criteria¹, it is stated that the slope of a "pool-and-weir fishway" should be "less than or equal to 10%," suggesting that a 10% slope is the *maximum* slope that would reliably allow successful fish passage. However, as noted in the guidance document, the design criteria provided are generic in nature and do not consider site-specific factors such as local hydrology or target species and life stage. The Corps should explain in greater detail the basis for their determination that a 10% slope on the upstream side of the weir would not impede fish passage, particularly for large demersal species such as Atlantic Sturgeon. If insufficient data are available to support this determination, a shallower slope more closely approximating the original upstream design slope of 3% should be implemented.

SCDNR has concerns regarding erosional impacts of this design on the gravel bar that is downstream from the NSBLD. This bar provides known spawning habitat for several species, including the federally endangered Shortnose Sturgeon (*Acipenser brevirostrum*) and Atlantic Sturgeon (*Acipenser oxyrinchus*) and the rare Robust Redhorse (*Moxostoma robustum*), a federal At-Risk Species that is also state listed as endangered in Georgia. As noted in previous email exchanges between the Corps and USFWS, this gravel bar is formed from material that originated in a scour hole immediately downstream of the dam. There is concern that this alternative would alter flow velocities and direction below the dam, which could also impact this

¹ United States Fish and Wildlife Service. 2016. Fish Passage Engineering Design Criteria. USFWS Northeast Region (R5), Hadley, Massachusetts, January 2016. 114 pp.

critical spawning habitat. Hydrodynamic modeling performed thus far does not specifically address the potential for erosion of the bar. Consequently, SCDNR strongly supports the recommendation that additional hydrodynamic and sediment transport modeling be conducted to fully evaluate potential impacts to the gravel bar and to inform any needed modification of the selected alternative to minimize this potential. Additionally, SCDNR requests that an assessment be completed of habitat above the NSBLD to categorize the available habitats as either foraging, spawning, etc. SCDNR has strong concerns regarding the loss of known spawning habitat in exchange for unknown benefits. Without additional data and as currently proposed, this alternative is not acceptable.

Alternative 2-6a-d (Fixed Crest Weir, 500' Wide at various elevations described in refinements a-d above, with Bench – 2-6 d is Proposed Modification): Alternative 2-6 proposes to remove the lock and dam, including the foundation, and construct a full-width (500') fixed crest weir with a rock ramp sloping upstream from the existing dam location and excavate a 275' floodway bench on the Georgia side of the river. The fish passage structure would be constructed with boulders and stone sized following the same design that was previously approved for the bypass and have a 2% slope upstream to the weir crest, and a 10% slope upstream from the crest to the riverbed. Because the various refinements to Alternative 2-6 differ in elevation and present an identical fish passage design, SCDNR is providing comment on Alternative 2-6 as one entity and not addressing the specific refinements a-d.

The incorporation of the floodplain bench in Alternative 2-6 may have the ancillary benefit of providing enhanced passage along the bankside provided that the bench is grass lined to prevent erosion and additional sediment moving into the river system. Although, there may be some concern with fish being stranded during large flooding events as was witnessed in the most recent flooding that occurred in the Cape Fear River, NC where several sturgeon were found dead on rocks when floodwaters receded. It is unclear whether these mortalities occurred from stranding or lowered dissolved oxygen levels. SCDNR also shares the concern of the USFWS (DFWCAR, 2018) that arch rapid type designs, such as presented for this alternative, should be carefully designed to accommodate target diadromous species. SCDNR still has concern regarding the overall design and its efficiency in passing benthic species (specifically sturgeon and robust redhorse). The rock arch ramp located at Lock and Dam #1 on the Cape Fear River, NC has been in operation for several years and has successfully passed alosids, but has shown difficulty passing sturgeon and other benthic species. SCDNR acknowledges many modifications will be applied to the NSBLD design, based off of "lessons learned" from the Cape Fear design, but a level of uncertainty still remains concerning the overall level of effectiveness in passing some target species.

SCDNR continues to have concerns regarding erosional impacts of this design alternative, as previously mentioned on Alternative 2-3, to the gravel bar that is downstream of the NSBLD. This bar provides known spawning habitat for several species including the federally protected sturgeon. Hydrodynamic and sediment transport modeling need to be conducted to fully evaluate potential impacts to the gravel bar, as well as a habitat assessment to categorize available habitats

as either foraging, spawning, etc for sturgeon. Without additional data and as currently proposed, this alternative is not acceptable.

Alternative 2-8 (Fixed Crest Weir, 500' Wide at Elevation 109.2' NAVD88, with 2 Gates): Alternative 2-8 proposes to remove the lock and dam, including the foundation, construct a full-width (500') fixed crest weir with a rock ramp sloping upstream from the existing dam location and construct an active flood passage structure consisting of two 50' gates on the Georgia side of the river. The fish passage structure would be constructed with boulders and stone sized following the same design that was previously approved for the bypass and have a 2% slope upstream to the weir crest, and a 10% slope upstream from the crest to the riverbed. SCDNR is concerned that the flood gate structures present new hazards and complications to fish passage and because of the potential for entrapment of sturgeon in the gated bypass does not find this alternative acceptable.

Comments and Conclusions:

1. The SCDNR remains concerned regarding the possible erosional impact of any modified fishway design on the gravel bar that is downstream from the NSBLD. This bar provides important spawning habitat for several species, including the federally endangered Shortnose Sturgeon (*Acipenser brevirostrum*) and Atlantic Sturgeon (*Acipenser oxyrinchus*) and the rare Robust Redhorse (*Moxostoma robustum*), a federal At-Risk Species that is also state listed as endangered in Georgia. Additionally, the gravel bar is located within NMFS specific occupied areas designated as critical habitat for the South Atlantic Distinct Population Segment (DPS) of Atlantic Sturgeon². Spawning behavior has been documented at this location for both Atlantic and Shortnose Sturgeon³ and young of the year indices for abundance indicates annual recruitment leading to robust population estimates for both species^{4,5}. As noted in previous email exchanges between the Corps and USFWS, this gravel bar is formed from material that originated in a scour hole immediately downstream of the dam. There is concern that several of the proposed alternatives would alter flow velocities and direction below the dam, which could also impact this critical spawning habitat. Hydrodynamic modeling performed thus far does not specifically address the potential for erosion of the bar. Consequently, SCDNR strongly recommends that additional hydrodynamic and sediment transport modeling be conducted to fully evaluate potential impacts to the gravel bar and to inform any needed modification of the selected alternative to minimize this potential. The current conditions

² <https://www.federalregister.gov/documents/2017/08/17/2017-17207/endangered-and-threatened-species-designation-of-critical-habitat-for-the-endangered-new-york-bight>

³ Post, W. C., T. Darden, D. L. Peterson, M. Loeffler, and C. Collier. 2014. Research and management of endangered and threatened species in the southeast: riverine movements of Shortnose and Atlantic sturgeon. South Carolina Department of Natural Resources, Project NAIONMF4720036, Final Report, Charleston.

⁴ L. Bahr, Derek & Peterson, Douglas. (2016). Recruitment of Juvenile Atlantic Sturgeon in the Savannah River, Georgia. Transactions of the American Fisheries Society, 145. 1171-1178. 10.1080/00028487.2016.1209557.

⁵ Bahr, D. L. and Peterson, D. L. (2017). Status of the Shortnose Sturgeon Population in the Savannah River, Georgia. Transactions of the American Fisheries Society, 146: 92-98. doi:10.1080/00028487.2016.1245215.

*Draft Integrated Post Authorization Analysis Report & Supplemental Environmental Assessment
Fish Passage at New Savannah Bluff Lock and Dam
March 28, 2019*

downstream of NSBLD provide habitat supporting successful reproduction for both Shortnose and Atlantic Sturgeon; therefore, SCDNR has strong concerns about the continued availability and viability of this critical habitat. SCDNR finds that further evaluation of any selected alternative should be conclusive in affirming that negative impacts to the existing gravel spawning bar would not occur and that by removing or altering the NSBLD that sturgeon would have access to additional spawning habitat. Any selected alternative must assure that it is compatible with the continued availability and viability of the gravel spawning bar below the NSBLD that is designated critical habitat by NMFS.

2. SCDNR requests that an assessment be completed of habitat above the NSBLD to categorize the available habitats as either foraging, spawning, etc. SCDNR has strong concerns regarding the loss of known spawning habitat in exchange for unknown benefits. Because of these uncertainties of net gains versus potential loss of sturgeon habitat and spawning grounds and the effectiveness of fish passage designs for passing both species of sturgeon, SCDNR continues to have concerns with any of the proposed alternatives. As stewards of South Carolina's natural resources, SCDNR needs assurance that the benefits of the selected alternative to all migratory fish species will outweigh any potential impacts incurred as a result of construction of a fish passage structure at NSBLD.

Based on the information provided to date, SCDNR finds that additional information is needed to fully evaluate the recommended plan and to address the concerns stated above. The SCDNR requests the opportunity to review and comment on all selected plan design documents at each stage of the design process. Until these comments are adequately addressed, SCDNR cannot concur with the Draft Finding of No Significant Impact for the Proposed Action.

The SCDNR appreciates the opportunity to comment on the PAAR SEA for this project and looks forward to further coordinating with the Corps and other federal and state resource agencies on the design of an acceptable mitigation feature at the NSBLD.

Sincerely,



Stacie Crowe
Office of Environmental Programs

Cc: SCDHEC/OCRM
SCDHEC/EQC
USFWS
NOAA/NMFS
GADNR

Status of the Shortnose Sturgeon Population in the Savannah River, Georgia

Derek L. Bahr & Douglas L. Peterson

Pages 92-98 | Received 27 Jun 2016, Accepted 29 Sep 2016, Published online: 02 Dec 2016

Abstract

The federally endangered Shortnose Sturgeon *Acipenser brevirostrum* was once abundant in all major coastal river systems from the Saint John River, Canada, to the St. Johns River, Florida. During much of the 20th century, however, populations suffered major declines throughout their range from the combined effects of overfishing, pollution, and habitat loss. Although the species was a charter member of the Endangered Species Act, quantified population assessments are still lacking for many river systems throughout their range. Because river-specific assessments are critical for evaluating species recovery, the objective of this study was to quantify abundance and annual recruitment of Shortnose Sturgeon occupying the Savannah River, Georgia. Anchored gill nets and trammel nets fished during slack tides were used to sample juvenile and adult Shortnose Sturgeon in their summer holding areas during 2013–2015. Huggins closed-capture models in RMark were used to derive abundance estimates for each demographic group. The best models estimated that the Savannah River contained 81 (95% CI = 27–264) age-1 juveniles in 2013, 270 (162–468) in 2014, and 245 (104–691) in 2015. The models also estimated the river to contain 486 (198–1,273) age-2+ juveniles in 2013, 123 (69–235) in 2014, and 187 (81–526) in 2015. Similarly, the adult population was estimated to be 1,865 (784–4,694) individuals in 2013, 1,564 (1,005–2,513) in 2014, and 940 (535–1,753) in 2015. The results of this study provide the first population estimates available for Shortnose Sturgeon in the Savannah River. Additionally, the results suggest that the Savannah River likely contains the second largest population of Shortnose Sturgeon in Georgia. Future studies are needed in the Savannah River and other South Atlantic river systems to better evaluate Shortnose Sturgeon recovery status and the effects of river-specific anthropogenic modifications.

Received June 27, 2016; accepted September 29, 2016 Published online December 2, 2016

Recruitment of Juvenile Atlantic Sturgeon in the Savannah River, Georgia

Derek L. Bahr & Douglas L. Peterson

Pages 1171-1178 | Received 07 Apr 2016, Accepted 28 Jun 2016, Published online: 23 Sep 2016

Abstract

Atlantic Sturgeon *Acipenser oxyrinchus oxyrinchus* were once abundant along the Atlantic coast of North America from the Saint Lawrence River, Canada, to the St. Johns River, Florida. Severe overfishing, coupled with habitat losses during the 1900s, resulted in major population declines that eventually led to the subspecies' listing under the U.S. Endangered Species Act in 2012. Despite this listing, quantified recruitment data are largely lacking for most Atlantic Sturgeon populations, particularly those within the South Atlantic distinct population segment. The objective of this study was to quantify annual recruitment of Atlantic Sturgeon in the Savannah River, Georgia, by estimating annual abundance of age-1, river-resident juveniles. During the summers of 2013–2015, we used anchored gill nets and trammel nets to sample juvenile Atlantic Sturgeon throughout the Savannah River estuary. Ages of captured juveniles were determined by using length-frequency analysis, and abundance of each juvenile age-class was estimated with Huggins closed-capture models in RMark. We estimated the Savannah River to contain 528 age-1 juveniles in 2013, 589 in 2014, and 597 in 2015. The results from this study indicate that the Savannah River population is likely the second largest within the South Atlantic distinct population segment. Future studies are needed to determine the relative importance of the Savannah River as a natural source of recruitment for smaller, more imperiled populations in adjacent rivers. Consequently, we suggest that management efforts continue to prioritize the protection of both the population and the associated critical habitats within the Savannah River estuary.

Received April 7, 2016; accepted June 28, 2016 Published online September 23, 2016



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City of North Augusta

Colonel Daniel H. Hibner
U.S. Army Corps of Engineers, Savannah District
100 W. Oglethorpe Avenue
Savannah, Georgia 31401-3604

March 29, 2019

Dear Colonel Hibner:

Thank you for your letter of March 14, 2019, sent to me and several others. I recognize the letter is another in the series of communications to local government and agencies in response to our requests for more complete information.

I have several observations which merit serious consideration and require my comment.

First and foremost, I find the cost estimates, as provided, inadequate for any purpose other than allowing you to comply with our request to provide an estimate certified by the Mandatory Center of Cost Engineering for Civil Works Review. My basis for reaching that conclusion is simple. You use terminology that is "Army speak," not the language of the rest of us. For example, you provide the estimate as "constant dollar total." That has no relevant meaning to us. The glossary in ER 1110-2-1302, Constant Dollar Cost (Price Level) provides no help to civilian reviewers. Glossary-2 states: "Constant dollar analyses are utilized to determine an equivalent cost in the future or in the past by price indexing using CWCCIS data. Constant dollar cost is the estimated cost BROUGHT TO THE EFFECTIVE PRICE LEVEL." That provides no clarity. Providing cost estimates in an unfamiliar language without clarification is unfortunate at best.

The Army's guidance requires that "Cost estimates must be defensible documents that include description of project scope, major assumptions, sufficient rationale, and basis of costs presented within the estimate." None of that was included with the letter. Absent such information any table of cost numbers is of little value.

Secondly, the cost information provided in the letter differs so greatly from the estimates in the briefing package dated 14 November 2018 as to be astounding. In November the initial investment cost for Alternative 1-1 was \$61.5 million. For Alternative 2-6d it was \$69 million. Your letter shows the current best estimate to be increases of 25% and 33%, respectively. These variances are startling and only lead to more uncertainty.

Investment and Major Rehab are lumped together and the cost was estimated "as if you were paying cash today." Is this saying a major rehab of the Lock wall would cost \$93.7 million if it were done today? How was the \$93.7 million dollar estimate arrived at? There has been intimations a major rehab would be needed at some point in the future, 50 years being the number I recollect.

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Engineering & Public Works
Office 803.441.4223
Fax 803.441.4208

Building Standards
Office 803.441.4227
Fax 803.441.4122

Finance
Office 803.441.4215
Fax 803.441.4189

Parks, Recreation
& Leisure Services
Office 803.441.4300
Fax 803.441.4319

Human Resources
Office 803.441.4205
Fax 803.441.3921

Public Utilities
Office 803.441.4240
Fax 803.441.4243



City of North Augusta

If it is now being included with the investment cost, i.e., "current" year appropriation, please explain what that means. Is the cost estimate for Alternative 1-1 now \$86 million, as it appears from reading the letter?

Relating to the O&M numbers provided as equating "to the value of the effort in today's dollar." Is that the present value (PV) of the money projected to operate and maintain the structure for the next 100 years? If not, how is it calculated in light of the fact estimated wage growth is factored into the determination?

The letter also states that "Alternative 1-1 was not selected as the Federal Plan." A post on your web site states categorically that Alternative 1-1 has been eliminated from further consideration. That certainly leads to wonderment about the value of the comment period on the draft documents. Is there any useful purpose for submitting comments other than necessitating responses be prepared by your staff (or contractors) before the package is submitted to General Holland?

Regarding the opinion being provided by NOAA Fisheries that Alternative 1-1 has a less favorable output than Alternative 2-6d. I understand the Amendment to the Biological Opinion states the overall design goal for fish passage to be 75% upstream and 85% downstream, and that the NMFS must review the final design to validate the design meets the requirements of the Biological Opinion. This certainly leads to yet another uncertainty. Is there a fish passage in existence today having an operational history adequate for NMFS to certify any design will meet the criteria in the Biological Opinion? In a recent meeting, this point was emphasized: if the structure does not meet NMFS criteria, modification will be required - until the criteria are successfully met. This implied uncertainty seems at odds with the confidence implied that NMFS will validate the final design. Is this uncertainty reflected in any of the cost estimates? As a minimum, there has to be an acknowledgement of the potential for additional non-Federal costs associated with any alternative approved by NMFS?

I appreciate the ongoing conversations to maintain the river pool elevation closer to the current target elevation of 114.5 ft. There is universal agreement that any additional height to a rock weir above the level associated with Alternative 2-6d will cause flooding of properties at some frequency. I understand you indicated the risk of flooding is every two years to agricultural lands for a rock weir with an elevation similar that of Alternative 2-6a. As I mentioned to you at the March 6 presentation to the public, a major consideration for the City of North Augusta is flooding of the River North and other subdivisions within the City from any rock weir installation. North Augusta must be provided the estimate of flooding predicted by a reliable model before any such proposal can be evaluated.

In closing, it is my opinion your March 14, 2019 letter falls far short of acceptability for its intended purpose. I would expect any cost estimate provided to the public for review to contain



City of North Augusta

more than just dollar amounts. As a minimum, I would expect a description of the project and its elements (for this project as they relate to the timeline for rehab and periodic maintenance of both alternatives), the major assumptions considered, quantified risks (for this project, probability of successfully meeting NMFS criteria), the anticipated O&M requirements, and an explanation of how the projected O&M costs were calculated (as discussed above.)

The City of North Augusta acknowledges the Savannah Harbor Expansion Project is critically important to the State of Georgia. However, my priority as Mayor is to protect (and improve) the health, safety and general welfare of residents and visitors. North Augusta is South Carolina's Riverfront city. It is a distinction our residents cherish. The City is aware your schedule is driven by the construction start by the date established by NMFS. However, that will not restrict the City's efforts to require a final decision about Congressional intent regarding the language in the WIIN Act, answers to questions about the technical aspects and criteria in the Biological Opinion, a cost estimate that provides citizens an opportunity to properly evaluate its basis and dollar amounts, and an opportunity for our South Carolina officials to be assured all state requirements are considered and satisfactorily resolved.

In previous meetings we have discussed the interest of both North Augusta and Augusta in the basis for NOAA's scoring of Alternative 1-1 for Fish Passage under the Evaluation Criteria of the alternatives as shown in your November presentation. I trust your subsequent meeting with NMFS experts was successful, and that the evaluation of the potential for Alternative 1-1 for fish passage would be forthcoming soon. Having that evaluation is important and necessary. Comments on the draft documents are being prepared for joint submittal by Augusta-Richmond County and the City of North Augusta. Please provide the date when that evaluation will be provided.

This is a tough issue. I appreciate your willingness to work together toward the appropriate solution. I look forward to your timely response to permit sufficient time for the City of North Augusta and Augusta-Richmond County to provide meaningful comments by the April 16, 2019 deadline.

Sincerely,

Robert A. Pettit
Mayor

cc: Senator Tom Young
Representative Bill Hixon
Chairman Gary Bunker
Mayor Hardie Davis



April 11, 2019

Ms. Robin Armetta (PM-P)
Savannah District, U.S. Army Corps of Engineers
Planning Division
100 W. Oglethorpe Avenue
Savannah, Georgia 31401-3640

Re: Savannah Harbor Expansion Project, Georgia and South Carolina
Fish Passage at New Savannah Bluff Lock and Dam

Dear Ms. Armetta:

This letter is in response to the U. S. Army Corps of Engineers' public notice dated February 14, 2019 pertaining to the Corps' recommendation for providing fish passage at the New Savannah Bluff Lock and Dam.

Dominion Energy is the owner and operator of the Urquhart Station, a nearly 700-megawatt electric generating plant located on the Savannah River. Urquhart Station withdraws water from the pool created by the New Savannah Bluff Lock and Dam and is dependent upon the pool for its safe and reliable operation. Dominion Energy, formerly SCE&G, has been involved in discussions with the Corps and other users of the pool since the initial announcement in 1999 of the Corps' intention to decommission and demolish the lock and dam. The Urquhart Station remains a critical facility generating electricity to serve approximately 175,000 homes in South Carolina.

Fixed Weir/Lower Pool Alternative

Recognizing the deteriorating condition and annual maintenance needs of the lock and dam, we were pleased with passage of the legislation in 2016 authorizing the replacement of the lock and dam with a fixed weir that would "maintain the pool for water supply and recreational activities, as in existence on the date of enactment" of the legislation.

As the Corps' considers public comments on its recommendation to construct a fixed weir with a top elevation of 109.0 feet NGVD29, Dominion Energy is concerned that the pool resulting from the proposed weir may not sustain Urquhart Station's operation during all flow conditions in the river.

Our concern stems from the fact that under a low flow condition the proposed fixed weir alternative will lower the pool approximately five feet from the level that normally has been maintained at Urquhart Station. Although the Corps conducted an engineering study to evaluate the impact of the lower pool

elevation on water users, we are concerned that an engineering study alone cannot conclusively demonstrate that there will be no adverse impact to our facility. We continue to believe that the Corps must validate the calculations in the engineering study by lowering the pool to the level which will exist with the proposed fixed weir alternative. Unfortunately, the simulation of the future pool conducted by the Corps this past February did not produce an elevation that mirrors the level that would result from the lowest flow condition.

Hydraulic Analysis

Our observations during the recent simulation also led to additional concerns regarding the Corps' hydraulic analysis that was used for the CDM Smith report. Table 8 in Appendix A of the Corps' Analysis Report predicts a pool elevation change of 2.2 feet from Urquhart Station to the lock and dam at a flow rate of 8,000 cubic feet per second (cfs). However, during the simulation at a flow rate of 7,820 cfs, we measured a pool elevation change of 0.5 feet, much lower than was predicted by the model. If the model is inaccurate, there would be increased uncertainty in our ability to conclude that the recommended alternative would ensure the full operation of the Urquhart Station.

We recognize that our observations may not properly account for the transient conditions resulting from nightly releases from Strom Thurmond Dam and the manipulation of the gates at the lock and dam during the simulation. We respectfully request, therefore, that the Corps provide their opinion on whether the simulation validated the accuracy of the hydraulic model.

From our analysis of the CDM Smith report and the inability during the simulation to reduce pool levels to the elevation proposed with the fixed weir alternative, Dominion Energy has significant concerns that our Urquhart Station can operate efficiently should the Corps proceed with this alternative to provide fish passage at the New Savannah Bluff Lock and Dam.

We respectfully request that the Corps make every effort to test the pool elevation expected with the proposed fixed weir to ensure that all current uses can be maintained before finalizing any solution. We look forward to continuing to work with the Corps to identify an acceptable solution.

Respectfully,



W. Keller Kissam
President
South Carolina Electric & Gas



P.O. Box 1331 Augusta, GA 30903 • 1010 Broad Street, Augusta, GA 30901 • Tel: 706. 722.8326

April 11, 2019

Savannah District, U.S. Army Corps of Engineers Planning Division
ATTN: Ms. Robin Armetta (PM-P)
100 West Oglethorpe Avenue
Savannah, GA 31401-3604
CESAS-PD@usace.army.mil

Re: New Savannah Bluff Lock and Dam - PUBLIC COMMENT PERIOD

Dear U.S. Army Corps of Engineers,

The Greater Augusta Sports Council wishes to go on record during the public comment period to notify you that we join with the City of Augusta and other community partners in Georgia and South Carolina in opposition to any plan or alternatives regarding changes to the New Savannah Bluff Lock and Dam that do not maintain the level of the Savannah River at the 5th Street Bridge in Augusta between 114.5 and 115.5 feet. Furthermore, we also wish to voice our extreme disappointment at this time that alternative 1-1 was removed from consideration.

Augusta's River Region is currently booming with new economic development and a heightened level of community pride being exhibited on both sides of the river that is unmatched in my lifetime. Changes to the NSB Lock & Dam that lower the pool of the Savannah River could very well stall or end this exciting momentum, by adversely affecting the economic, recreational and navigational opportunities that exist with our current river levels.

Tourism attracts approximately 9 million visitors to our river region each year, providing an annual economic impact of more than \$550 million. A vibrant and sustainable river remains crucial to our ability to recruit and host new regional and national level sporting events in our area. Reduced water levels may also negatively impact or even end a number of our current river events including the Augusta Ironman 70.3, which is the largest Ironman race in North America attracting over 3,500 competitors and contributing to an annual estimated impact of river sporting events that exceeds \$11 million annually.

In summary, we find the alternatives currently being considered by the Corps of Engineers to be questionable and highly irresponsible due to its certain negative impact on our growing economy and

quality of life for our citizens. It is extremely unfair that Augusta's River Region will have to pay the price to mitigate changes and decisions being made by those who will be unaffected in Savannah.

It is clear that the pathway forward must be different than the alternative demonstrated during the drawdown earlier this year. The City has hired experts to provide testimony, as well as viable alternatives to the current proposal. It is our belief that the community should not just "break even" with the changes coming to the lock and dam, but that we should benefit. For that reason, and in keeping in line with the CVB's Destination Blueprint plan, we would like to see a revitalization of the New Savannah Bluff Park, and safe passage around the dam structure. Current designs call for the complete destruction of this historically important park, and that is unnecessary. We urge the Corps to work with the designers hired by the Cities of Augusta and North Augusta to fully flush out alternatives that benefit our community, keeps the water comparable to today's levels, and meets the fish passage requirements of the project.

Regards,



Brian J. Graham
Chief Executive Officer

copy:

Georgia

Governor Brian Kemp
206 Washington Street
111 State Capitol
Atlanta, Georgia 30334

Congressman Rick W. Allen
U.S. House of Representatives
2400 Rayburn House Office Building
Washington, DC 20515

Senator Johnny Isakson
U.S. Senate
131 Russell Senate Office Building
Washington, DC 20510

Senator David Perdue
U.S. Senate
455 Russell Senate Office Building
Washington, DC 20510

South Carolina

Governor Henry McMaster
State House
1100 Gervais Street
Columbia, SC 29201

Congressman Joe Wilson
U.S. House of Representatives
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Washington, DC 20515

Senator Lindsay Graham
U.S. Senate
290 Russell Senate Office Building
Washington, DC 20510

Senator Tim Scott
U.S. Senate
102 Hart Senate Office Building
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