

As a retired USACE Senior Project Manager, I appreciate the opportunity to provide the below comments for your consideration and incorporation in the USACE 403 Study to deepen the Cape Fear River.

Comment 1. AS AN INTEGRAL PART OF THE USACE REPORT AND EIS, THIS USACE SECTION 403 REPORT MUST RECOGNIZE AND ADDRESS ALL RELATED “CLIMATE CRISIS” IMPACTS CAUSED BY BOTH THE HISTORIC, CURRENT AND FUTURE IMPACTS (PRIMARY AND SECONDARY) OF DEEPENING THE CAPE FEAR RIVER. On January 27, 2021, the President of the United States signed an Executive Order (EO) addressing the Climate Crisis at Home and Abroad¹. The EO directed the US Army Corps of Engineers (USACE) and other federal agencies to prioritize the "profound climate crisis" in US foreign policy and national security. This order presents a significant challenge for the USACE Wilmington District as they work on environmental compliance tasks for a proposed project. However, it seems that the Wilmington District has previously overlooked or disregarded the significance of this EO in its public outreach efforts. This important EO has not been mentioned anywhere in the posted outreach materials as well as how the USACE will comply with this vital EO.

Footnote 1: <https://www.whitehouse.gov/briefing-room/presidential-actions/2021/01/27/executive-order-on-tackling-the-climate-crisis-at-home-and-abroad/>

Comment 2. THE USACE SCOPE FOR THIS PROJECT IS TOO NARROWLY DEFINED AND FAILS TO ENCOMPASS A GEOGRAPHIC FOOTPRINT WHERE OTHER VASTLY MORE FAVORABLE SOCIO-ECONOMIC AND ENVIRONMENTAL ALTERNATIVES PRESENTLY EXIST. The NEPA requires the Corps to evaluate the Section 203 report for the Port of Wilmington, as well as any feasible alternatives that would meet the project's basic needs and requirements. The USACE is responsible for identifying all reasonable options within the project's geographical area, assessing their feasibility, and determining the least environmentally damaging alternative among the practical ones. Additionally, the USACE is not only required to review and evaluate the Port of Wilmington's Section 203 Report but also to explore potential alternatives beyond the defined project boundaries in the 203 report to find other options that would result in positive economic and environmental benefits.

Comment 3. THE USACE WILMINGTON DISTRICT'S PURPOSE AND NEED STATEMENT IS FAR TOO NARROW TO COMPLY WITH THE REQUIREMENTS OF NEPA. It is well known that according to NEPA, both the secondary and cumulative effects are directly related to the purpose and need of the proposed project. In this case, any action, activity, or improvements related to "deeper depths that allow more cargo to be carried," as Mr. Bret Waters, Wilmington District's Chief of Planning mentioned. Additionally, secondary effects refer to those that occur later or farther away but are still easily predictable due to a single action like deepening the Cape Fear River "to allow more cargo to be carried" to the Port of Wilmington and beyond.

One of those secondary effects not mentioned in the Port's Section 203 report is the current plan to relocate the current "hairpin" rail alignment to accommodate the anticipated longer and more frequent trains coming from the Port. According to a 2018 Benefit-Cost Analysis Memorandum² prepared by AECOM for the City of Wilmington, increasing the number and length of trains through the city could make delays, emissions, and vehicle operating costs at crossings worse. The Wilmington Rail Realignment Project, also known as the Beltline, aims to improve freight rail operations, safety, and regional transportation mobility which are all linked to the Port's Deepening Project. This rail realignment project will also impact critical floodplains, wetlands, and historic sites dating back to the 1700s.

In addition to the rail realignment project, there is an anticipated increase in the volume of trucks heavily laden with “more cargo” resulting from the deepening of the Cape Fear River. Both secondary effects will also have a wide range of consequences, such as changes in land use, climate change, compound flooding, water quality, economic stability, loss of culturally sensitive areas, and impacts on fisheries and ecosystems. Some of these secondary effects, when combined with other directly related past and foreseeable future actions related to the deepening of the Cape Fear River may be less defined than other secondary impacts and can be difficult to detect. However, over time, they can accumulate and eventually lead to a measurable environmental change. One example of cumulative effects is the effect of compound flooding on the Cape Fear River.

Included in the USACE analysis must be the cumulative effects of this purpose and need which range far beyond that stated in the Port’s Section 203 report and are the direct result of incremental consequences of the deepening of the Cape Fear River.

The proposed rail realignment and Cape Fear Memorial Bridge Replacement projects are intended to facilitate the future movement of the increased amount of cargo resulting from the proposed river deepening. The proposed Wilmington Rail Realignment Project (\$500 million +) and the proposed NC DOT Cape Fear Memorial Bridge replacement (\$500 million +) are both ancillary to the proposed river deepening. It is essential to note that secondary effects are “caused by an action and are later in time or farther removed in distance but is still reasonably foreseeable” (40 CFR 1508.8). Additionally, the Port’s Section 203 report is far too narrowly focused and seems to purposely not address the necessary mitigation requirements for the rail realignment project and building a new Cape Fear Memorial Bridge that can handle the increased freight traffic caused by the deepening of the Cape Fear River.

These two critically important secondary effects are directly related to the river deepening, yet they remain untethered and unmentioned in the 203 Report.

Footnote 2. <https://www.wilmingtonnc.gov/files/assets/city/v/1/government/documents/rail/technical-documents/benefitcost-analysis-2018.pdf>

Comment 4. THE PORT’S SECTION 203 REPORT FAILED TO IDENTIFY OTHER REASONABLE ALTERNATIVES – 600 ACRE PORT OWNED PROPERTY NEAR SOUTHPORT: It's essential to consider all potential outcomes when examining different options. In the early 2000s, the Port of Wilmington approached USACE Wilmington District to investigate the feasibility of moving the Port to a 600-acre property owned by the Port on the west bank of the Cape Fear River, near Sunny Point Military Ocean Terminal. This property is located 26 miles south of Wilmington, in Brunswick County, and upstream of the City of Southport. According to page 158 of the Port’s Section 203 Report, *“NCSPA conducted an initial study to assess the viability of constructing a container terminal on a 600-acre tract of land in Southport, NC, near the federal navigation channel to Wilmington and closer to the ocean entrance.”* The “feasibility study”, a reconnaissance-level effort by the Corps, was intended to establish if there would be federal interest in such a project. Furthermore, the 203 Report claimed, *“Relocation of the Port of Wilmington container terminal to Southport, or construction of a new container terminal at Southport, does not substantially reduce channel improvement costs, such as channel deepening, because existing water depths are shallow. The overall cost for container terminal development at Southport was estimated to be \$2.5 billion in 2008. In addition, the environmental impact of dredging a deepwater access channel to Southport could be substantially larger than the impact of deepening the existing channel to Wilmington.”*

The benefits of relocating the Port of Wilmington 26 miles downstream from its current location were not given adequate consideration within the proposed alternatives outlined in the 203 Report. However, this option holds practical and significant value for a range of primary and secondary reasons. Some of the obvious benefits of relocating the Port to this location could:

1. Eliminate further deepening of the Cape Fear River for the 26-mile reach to Wilmington.
2. Reduce future dredging requirements, thus allowing the river and floodplain ecosystems to naturally heal and restore over time.
3. Reduce the upstream impacts of storm surges and compound flooding.
4. Reduce ecosystem impacts from saltwater intrusion and allow upstream ecosystems to repair.
5. Leverage and multipurpose the existing Sunny Point rail system thus eliminating the secondary effect need to build a proposed rail realignment project and new rail bridges through the historically significant and ecologically sensitive Eagles Island floodplain and wetlands.
6. Leverage Sunny Point / Port of Wilmington dredging projects into one combined multi-use federal project.
7. Eliminate the secondary effect needed for the proposed high-rise Cape Fear River crossing toll bridge. NC DOT has recognized this bridge proposal as one of the main benefits to the Port of Wilmington to redirect future freight trucks to and from that facility.
8. Reduce ship travel and exposure time on the river.
9. Increase Port traffic loading and unloading turnaround time.
10. Reduce cargo ship fuel costs, air quality impacts, and carbon footprint.
11. Could prevent catastrophic risks and operational challenges posed by larger cargo container ships in the Cape Fear River between Southport and Wilmington. Accidents involving these giant vessels can have devastating consequences, far more severe than those involving smaller ships. The grounding of the Ever Given, a 20,000 TEU vessel, caused a six-day blockage of the Suez Canal in March 2021, leading to a rise in vessel and cargo delays and contributing significantly to global supply chain disruptions throughout the year. Given the recent increase in mega-ship accidents, it is essential to consider the possibility of a similar event occurring in the Cape Fear River and incorporate it into the NEPA risk and uncertainty analysis.
12. Leverage the significant amount of land currently available in Brunswick County for the economic development of commercial/industrial opportunities. New Hanover County is rapidly building out available land with residential growth along the east side of the Cape Fear River.

Comment 5. THE PORT'S SECTION 203 REPORT FAILED TO IDENTIFY OTHER REASONABLE ALTERNATIVES – PORT OF MOREHEAD CITY: When examining the geographic region identified in the 203 Report, it appears that the Port of Morehead City, located only 80 miles to the north, may also be a suitable option for consideration for the following reasons:

1. In terms of available acreage for port operations, the Port of Wilmington and the Port of Morehead City are equal in size.
2. The Port of Morehead City lies just four miles from the open ocean.
3. The depth of the approach channel and inner harbor at the Port of Morehead City can be dredged by an additional two feet. This option is much more feasible, far more cost-effective, and would cause far less damage to the environmental and cultural resources compared to doing so in the Cape Fear River.
4. Considering the Port of Morehead City as an alternative to deepening the Cape Fear River would eliminate the need to relocate the rail around the City of Wilmington. This is because the deepening

of the Cape Fear River would require longer trains to handle the increased freight traffic which is a significant secondary impact that has been overlooked in the Port's Section 203 report.

5. The lower Cape Fear River would benefit by reducing the upstream impacts of storm surges and compound flooding, reducing ecosystem impacts from saltwater intrusion, and allowing upstream ecosystems to repair.
6. Leverage and optimize the Port of Morehead City's rail system thus eliminating the secondary effect needed to build Wilmington's proposed rail realignment project and new rail bridges through the historically significant and ecologically sensitive Eagles Island floodplain and wetlands.
7. Eliminate the secondary effect needed for the proposed high-rise Cape Fear River crossing toll bridge. NC DOT has recognized this bridge proposal as one of the main benefits to the Port of Wilmington to redirect future freight trucks to and from that facility.
8. Travel time to the Port of Morehead City would be far less than the Port of Wilmington along with quicker traffic loading and unloading turnaround time.
9. The Port of Morehead City has a readily available and upgradable rail head.
10. Consideration of the Port of Morehead City alternative would offer reduced cargo ship fuel costs, and air quality impacts, as well as a reduced carbon footprint.
11. The current Port of Wilmington's rail realignment project could be eliminated, and the rail system could be modified for public transportation purposes.
12. As reported in an article published by Coastal Review, on 10/03/2023 by Brad Rich, a recent public flyer stated that *"the proposed project (at the Port of Morehead City) is to support new industry opportunities to the State and the authority"* and *"for the generation of jobs and the labor income to improve employment, increase median income, decrease the poverty rate in Carteret County and the region and transition N.C. to a clean energy economy. Additional actions include roadway and rail improvements and a natural gas line from Morehead City to Radio Island."*

Comment 6. THE PORT OF WILMINGTON'S SECTION 203 REPORT FAILED TO PROPERLY AND COMPLETELY ANALYZE THE POTENTIAL EFFECTS STATED IN THE USACE CLIMATE PREPAREDNESS AND RESILIENCE POLICY AND NEPA. NEPA requires that USACE consider all the relevant impacts, both primary and secondary, on the citizens who reside and work in the area. In the June 2015 update of the USACE Climate Preparedness and Resilience Policy Statement, *"It is the policy of USACE to integrate climate change preparedness and resilience planning and actions in all activities to **enhance community resilience [bold emphasis added]** with our water-resource projects and ensuring the effectiveness of our military support mission, and to reduce the potential vulnerabilities of those communities and missions to the effects of climate change and variability."*³

The USACE's Section 403 analysis and decisions regarding the proposed deepening of the Cape Fear River will greatly impact our community's physical and environmental character for generations to come. Our community is still in the process of recovering from the devastating effects of Hurricanes Matthew, Florence, and Isaias. As eyewitnesses to the destruction caused by these natural disasters, we understand firsthand the immense toll that hurricanes, floods, and climate change can have on our region. Despite the courageous efforts of many citizens and community leaders, we were all taken aback by the unexpected frequency and severity of these life-altering events and the accompanying risks posed by extreme weather patterns and tidal fluctuations. With that, USACE has an essential duty to inform Congress and our citizens about the potential hazards and impacts that may arise from further deepening of the Cape Fear River.

Footnote 3: <https://www.usace.army.mil/corpsclimate/Adaptation-Policy-Plan/>

Comment 7. THE PORT OF WILMINGTON'S SECTION 203 REPORT COMPLETELY IGNORED RECOMMENDATIONS SET FORTH BY THE NORTH CAROLINA CLIMATE AND RISK ASSESSMENT AND RESILIENCE PLAN. In June 2020, North Carolina released the North Carolina Climate Risk Assessment and Resilience Plan⁴. In the foreword of that plan, Governor Cooper issued a stark warning: *"The latest climate science emphasizes what we already know firsthand. There will be increased temperatures, rising sea levels, more precipitation, more intense hurricanes, more severe thunderstorms, and more storm surge flooding."* A group of scientists, engineers, and educators collaborated to help our elected officials, decision-makers, and the public better understand the natural and man-made hazards we face in our area so that we can plan, prepare, and mitigate them. Here are some key findings from the experts who developed that plan, none of which were even remotely addressed in the Port's Section 203 Report:

Section C - Climate Hazards Facing North Carolina.

Heavy Precipitation and Storms:

- *Heavy precipitation accompanying hurricanes and other weather systems is likely to increase, thus increasing the potential for flooding in inland and coastal areas.*
- *Energy infrastructure located along inland watersheds and coastal areas will be further subject to changes in river discharge and flooding from heavy precipitation events.*
- *Heavy precipitation from more intense and frequent storms can cause significant damage to public and private structures such as homes, roads, utility services, etc.*
- *Vulnerable populations are most at risk of flooding and may have difficulty evacuating when necessary.*

Coastal Flooding and Coastal Erosion:

- *It is **virtually certain [bold emphasis added]** that sea level along the North Carolina coast will continue to rise due to the expansion of ocean water from warming and melting of ice on land.*
- *It is **virtually certain [bold emphasis added]** that rising sea levels and increasing intensity of coastal storms will lead to an increase in storm surge flooding in coastal North Carolina.*
- *High tide flooding will be a near-daily occurrence at some points along the coast in the future.*
- *Cultural resources in fixed locations are inherently sensitive to flooding and it is difficult to reduce sites' exposure to flooding.*
- *Sea level rise and flooding will limit available land that is in high demand for both human (economic) and ecosystem services.*
- *More frequent coastal flooding will impact coastal habitats, fisheries, and the protective services that natural areas provide to local communities.*
- *Increased storm surges will erode shorelines and kill vegetation in maritime grasslands, tidal marshes, estuaries, lower reaches of coastal plain rivers, and low-lying wetlands near estuaries.*
- *Coastal erosion will reduce habitat for freshwater tidal wetlands, maritime uplands, and maritime wetlands.*
- *Endangered and threatened species that are vulnerable to storm surges and erosion on beaches are likely to decline.*
- *Coastal erosion will leave properties further at risk of flooding and storm damage, due to land or natural buffers being lost.*

Hurricanes:

- *The intensity of the strongest hurricanes is likely to increase with a warming of the oceans and atmosphere, leading to greater damage to people, communities, our economy, and*

natural resources from more intense hurricanes and accompanying flooding and precipitation.

- *More intense hurricanes will further damage wetlands and natural barriers which help to protect infrastructure and communities from storm surges, increasing the vulnerability to subsequent storms.*
- *Stronger hurricanes will destroy or damage public and private buildings and property.*

Inland Flooding:

- *Increases in extreme precipitation are likely to increase inland flooding in North Carolina.*
- *Inland communities across the state are at risk from flooding due to extreme precipitation and outdated and/or undersized storm drainage infrastructure.*
- *Increased inland flooding caused by extreme precipitation events will further increase economic and agricultural losses after a flooding event.*
- *More frequent flooding will impact inland habitats, fisheries, and the protective services that natural areas provide to local communities.*
- *Flooding will continue to damage archaeological and historic sites on floodplains across all three physiographic regions and within every river basin in the state.*
- *Increased or more frequent flooding may inundate and potentially destroy more cultural resources.*

Ecosystems and Habitat Loss:

- *Harmful algal blooms may increase due to warmer temperatures.*
- *The loss of organisms that rely on calcium-based shells such as oysters and clams, and organisms dependent upon them for food or habitat will be harmed by ocean acidification.*
- *Loss of wetlands due to sea level rise will result in habitat losses that will impact both commercial and recreational fisheries, decrease buffering capacity, adversely impact water quality, and reduce the resilience of coastal communities.*

Saltwater Intrusion:

- *Higher water levels due to sea level rise threaten otherwise productive land, leading to agricultural and economic losses.*
- *Increased saltwater intrusion due to sea level rise is expected to change the salinity of estuarine communities and convert lower coastal floodplains from swamp forests to wetlands.*
- *Saltwater intrusion due to climate change will make drinking water from both groundwater and surface waters more vulnerable to contamination and/or expensive to treat and secure.*
- *Intrusion in freshwater sources can cause crop yields to decline and farmland to be unsuitable for growing crops due to high salinity and less available freshwater, leading to a loss of revenue in agriculture.*

Comment 8. THE REFERENCES LISTED BELOW PRESENT A COMPREHENSIVE COMPILATION OF REPORTS, RESEARCH, RECOMMENDATIONS, AND FACTUAL EVIDENCE THAT SUPPORT THE CONCLUSION THAT THE DEEPENING OF THE CAPE FEAR RIVER FOR ANY PURPOSE IS NOT JUSTIFIED.

NC-specific plans and resources:

- ✓ *Southeastern North Carolina Regional Hazard Mitigation Plan (Updated January 2021)*
- ✓ *NC Green Growth Toolbox Handbook*
- ✓ *NC Coastal Federation Living Shorelines Website*

New Hanover County/Brunswick County-specific documents:

- ✓ *Community Resilience Pilot Project for Wilmington, NC (2013)*: Developed in coordination with New Hanover County and contains important information related to the impacts of sea level rise, vulnerability, and implementation of mitigation strategies.
- ✓ *Sea Level Rise Hazard Assessment for New Hanover County, NC (2016)*: Publication in *UNC-W's Explorations: The Journal of Undergraduate Research and Creative Activities for the State of North Carolina*.
- ✓ *Final Restoration Plan and Environmental Assessment for the Kerr-McGee Superfund Site*:

Tools for identifying and mapping locally relevant hazards:

- ✓ *NOAA's Storm Events Database*
- ✓ *NC Emergency Management Digital Elevation Models (DEMs)*
- ✓ *The Climate Explorer (U.S. Climate Resilience Toolkit)*
- ✓ *Locally Relevant Sea-Level Rise Projections (Legacy Sentinel Site Cooperative Program)*
- ✓ *Carolinas Precipitation Patterns and Probabilities (CP3) (NOAA Carolinas Integrated Sciences and Assessments)*
- ✓ *NC Flood Inundation Mapping and Alert Network (NC Floodplain Mapping Program)*
- ✓ *USGS Coastal Vulnerability Index*
- ✓ *TNC's Coastal Resilience Mapping Portal for NC*
- ✓ *Climate Central's Surging Seas Risk Zone Map*
- ✓ *NOAA SLR Viewer*
- ✓ *CDC Social Vulnerability Index*
- ✓ *2019 Census Community Resilience Estimates for Equity and Disasters*

Footnote 4: <https://www.deq.nc.gov/energy-climate/climate-change/nc-climate-change-interagency-council/climate-change-clean-energy-plans-and-progress/nc-climate-risk-assessment-and-resilience-plan>

Comment 9. THE PORT'S SECTION 203 REPORT DISREGARDS THE SIGNIFICANT IMPLICATIONS OF FUTURE SEA LEVEL RISE ON THE WILMINGTON AREA AND LOWER REACH OF THE CAPE FEAR RIVER, AS WELL AS THE CUMULATIVE EFFECTS DIRECTLY AND INDIRECTLY ASSOCIATED WITH THE PROPOSED DREDGING PROJECT. In 2022, NOAA published the 2022 Sea Level Rise Technical Report⁵, which presented updated projections for all U.S. coastal waters up to the year 2150. This report concluded that *“Sea level along the U.S. coastline is projected to rise, on average, 10 - 12 inches in the next 30 years (2020 - 2050), which will be as much as the rise measured over the last 100 years (1920 - 2020). Sea level rise will vary regionally along U.S. coasts because of changes in both land and ocean height.”* It is crucial to consider the future state of the Lower Cape Fear River about its vulnerability to natural disasters, such as tropical cyclones, heavy rainfall, and sea-level rise. These occurrences can result in severe flooding, which can be extremely damaging when occurring simultaneously. This poses a significant threat to the economy, businesses, as well as the lives and property of those in the Wilmington area and beyond. Additionally, the heightened levels of inundation lead to water pollution that impacts the daily lives of families and visitors in the Lower Cape Fear region. USACE must address these challenges as an integral part of the NEPA process to safeguard the river and its surroundings for future generations.

Footnote 5: <https://oceanservice.noaa.gov/hazards/sealevelrise/sealevelrise-tech-report.html>

Comment 10. . . . AND THE REFERENCE IN THE BACK OF THE PORT'S SECTION 203 REPORT, “THE EFFECT OF CHANNEL DEEPENING ON TIDES AND STORM SURGE: A CASE STUDY OF WILMINGTON, NC: THE ALTERATION OF TIDES AND STORM SURGE.” R. FAMILKHALILI, S. A. TALKE, First published: 17 August 2016. <https://doi.org/10.1002/2016GL069494>. Detailed in this document, model results suggest that tide

propagation into the system has been strongly affected by increases in channel depth from 7 m to 15.5 m over the last 130 years, leading to a doubling of the tidal range in Wilmington. The anthropogenically altered bathymetry also increases the modeled storm surge: the same tropical cyclone making landfall today will produce significantly larger water levels than in the nineteenth century.

Comment 11. THE PORT'S SECTION 203 REPORT DOES NOT ADDRESS RESTORATION, REMEDIATION, OR MITIGATION MEASURES FOR FLOOD EVENTS THAT HAVE ALREADY WORSENERED DUE TO THE CONTINUOUS DREDGING OF THE CAPE FEAR RIVER. The USACE's creation of a dredged spoil pile on Eagles Island has had adverse effects on the floodplain, wetland habitat, and archaeological sites above and below this site. This has led to increased flood risks in Wilmington's waterfront region as well as the USS North Carolina Battleship area which is now undergoing major improvements to adapt to the increasing threats of flooding. The proposed secondary impacts of this project are expected to raise the expense of public tax money for costly flood control projects and disproportionately affect minorities and low-income residents. The Cape Fear River's flooding has become more intense and frequent due to sea level rise, storm surges, and heavy rainfall, compound flooding, causing increased instances of local flooding. The deterioration of the Cape Fear River environment due to pollution, saltwater intrusion, and flooding, as well as lobbying for intensive buildout in fragile wetlands and floodplains, resulting in higher insurance homeowner rates are all pressing issues completely ignored in the Port's Section 203 Report.

Comment 12. UNCERTAINTY RELATED TO THE FUTURE CONTAMINATION OF DREDGE SPOILS BY PFAS. To quote EPA's publication: **Our Current Understanding of the Human Health and Environmental Risks of PFAS⁶**, *"Exposure to PFAS May be Harmful to Human Health. Current scientific research suggests that exposure to certain PFAS may lead to adverse health outcomes. However, research is still ongoing to determine how different levels of exposure to different PFAS can lead to a variety of health effects. Research is also underway to better understand the health effects associated with low levels of exposure to PFAS over long periods of time, especially in children."* There are ongoing studies to understand the health risks associated with exposure to PFAS. Brunswick County will soon start operating a 60 million gallon per day low-pressure Reverse Osmosis water treatment plant designed to remove the per- and polyfluoroalkyl substances (PFAS) that currently contaminate our drinking water. When operational, it will discharge nearly five million gallons per day of highly concentrated PFAS-loaded wastewater. The discharge pipe of the water treatment plant is situated on the Cape Fear River, approximately three miles upstream of the Port of Wilmington. **This concentrated PFAS waste discharge could range from 120 parts per billion (ppb) to well over 300 ppb, far exceeding EPA's public health standards.** This highly concentrated stream of PFAS pollutants will settle within areas that need to be dredged for the potential deepening and widening of the channel prism in the future if this project is approved. The issue of PFAS contamination of dredged spoils and its impact on public health and the environment is yet to be resolved by the EPA and the State of North Carolina and poses a significant uncertainty for future dredging activities in the Lower Cape Fear River.

Footnote 6: <https://www.epa.gov/pfas/our-current-understanding-human-health-and-environmental-risks-pfas>

Comment 13. THE RISK AND UNCERTAINTY ANALYSIS PRESENTED IN THE PORT'S SECTION 203 REPORT IS INSUFFICIENT AND INCOMPLETE. USACE must conduct an independent analysis of risk and uncertainty for the proposed work in the 203 Report, as well as any other potential alternatives in the surrounding area, such as relocating the Port to Southport or Morehead City. This analysis should consider and analyze all secondary and cumulative effects for each of these potentially viable alternatives, including compound flooding, rising sea levels, loss of habitats, impacts on floodplains, damages to public and

private infrastructure, and more. The risk and uncertainty analysis in the 203 Report is far too limited in addressing all the secondary and cumulative effects associated with the proposed plan for the Port. Despite the significant discussion about the economic benefits of deepening the Cape Fear River to accommodate larger cargo vessels, the Port's 4,053-page Section 203 report fails to consider the crucial matter of analyzing the tradeoffs involved in making such a decision and evaluating the long-term consequences of such an effort. One example of long-term consequences can be seen in the effects of deepening Boston Harbor, as outlined in a Washington Post article dated Feb 19, 2020, by Steven Mufson, titled *"Boston Harbor brings ashore a new enemy: Rising seas - Facing climate change, Boston must gird itself for an era of rising water — or be inundated."* The article states, *"Boston is raising streets, building berms, and even requiring that new high-rise condominium developments on its harbor acquire aqua fences — portable metal barriers that can be dragged to the street and anchored to the pavement to deflect incoming waves."* Former Mayor Martin J. Walsh vowed to spend more than \$30 million a year, equal to 10 percent of Boston's five-year capital budget, to defend the city from a watery future that is expected because of climate change. The USACE must conduct a thorough tradeoff analysis to ensure that decision-makers and communities are fully aware of the long-lasting impacts of deepening the Cape Fear River. Without this analysis, important public information regarding future secondary effects and cumulative impacts on downtown Wilmington may be overlooked or possibly understated.

Comment 14. THE PORT SECTION 203 REPORT NEGLECTED TO CONSIDER THE POTENTIAL IMPACT OF CLIMATE CHANGE ON THE PORT'S OPERATIONS AND ASSOCIATED ECONOMICS.

Like other ports on the East Coast, historical data has already shown that the Port of Wilmington and its neighboring communities are highly susceptible to hurricanes, compound flooding, storm surges, fog, and heat waves. Additionally, the Port of Wilmington faces significant risks due to climate change. Maersk, one of the world's largest shipping companies, has recently identified climate change as the most significant threat to its business. A study analyzing 107 of Maersk's key land-based assets (such as port terminals, inland warehouses, and data centers) revealed the extent of their exposure to climate risks over the next 30 years. The study concluded that the average cost of physical damage and business interruptions caused by climate change hazards is expected to increase by 130 percent by 2050 compared to a 2020 baseline. It is essential to include such a detailed analysis in the USACE Section 403 Report to fully understand the primary and secondary economic impacts on port operations.

Comment 15. THE PORT'S SECTION 203 REPORT FAILED TO ADDRESS THE RISKS AND UNCERTAINTIES ASSOCIATED WITH VESSEL OPERABILITY FAILURES WITHIN THE CAPE FEAR RIVER NAVIGATION CHANNEL.

Ships traveling in U.S. waters are required by federal law to report any loss of propulsion to the nearest Coast Guard command. According to research by The Washington Post on ships over 400 feet in length, the Coast Guard has recorded 103 instances of vessels experiencing a loss of propulsion near a port, bridge, or other infrastructure. These incidents were caused by various factors such as total loss of electrical power, malfunctioning valves, failed seals, clogged filters, and other mechanical and equipment failures. It is crucial to add such critical issues to a risk and uncertainty register.

Comment 16. THE PORT'S SECTION 203 REPORT FAILED TO ADEQUATELY EMPHASIZE THE SIGNIFICANCE OF SECTION 106 HISTORIC PRESERVATION.

It is crucial to honor and safeguard the history, culture, and heritage of previous generations who have lived and worked along the Lower Cape River. A dedicated chapter highlighting this aspect should have been included in the report. It is important to acknowledge that the Port of Wilmington and the wealth it generated were built upon the labor of enslaved West Africans. In 2006, Congress recognized the contributions made by the Gullah Geechee, by establishing the Gullah/Geechee Cultural Heritage Corridor (Public Law 109- 338), Gullah/Geechee Cultural Heritage Act,

passed by Congress on October 12, 2006. Congress has declared the Gullah Geechee Corridor as a National Heritage area, one of fifty-five (55) authorized heritage areas in the country. The geographic footprints of New Hanover and Brunswick Counties reside entirely within that corridor. The Corridor was created to:

- Recognize, sustain, and celebrate the important contributions made to American culture and history by African Americans, known as the Gullah Geechee, who settled in the coastal counties of South Carolina, Georgia, North Carolina, and Florida.
- Assist state and local governments and public and private entities in South Carolina, Georgia, North Carolina, and Florida in interpreting the story of the Gullah Geechee and preserving Gullah Geechee folklore, arts, crafts, and music.
- Assist in identifying and preserving sites, historical data, artifacts, and objects associated with Gullah Geechee people and culture for the benefit and education of the public.

The 203 Report overlooks the significant role that numerous rice plantations played in shaping the geography and economy of the Lower Cape Fear River. These plantations laid the foundation for the Port of Wilmington and contributed to the City of Wilmington becoming one of the most prosperous communities on the Atlantic Coast. It's important to note that this prosperity was primarily built on enslaved labor, specifically, the Gullah Geechee people. Many remnants of these old rice fields still exist, especially in and around the northern portions of Eagles Island. Additionally, slave ships were built in Wilmington and sailed out to West Africa. There are also unconfirmed reports of slave cemeteries along the Cape Fear River, and other culturally important historical artifacts of these plantation rice fields continue to serve as important nursery sanctuaries for fish and shellfish. The Eagles Island area holds significant historical and cultural importance, especially for the Gullah Geechee descendants and their relationship with the Lower Cape Fear River. The US Army Corps of Engineers (USACE) and the federal government must prioritize sustainable solutions for preserving and protecting the environment, history, culture, and heritage in and around the study area. The opportunity to celebrate this rich heritage should not be missed.

The USACE has made commendable efforts to address the importance of environmental sustainability outlined in its Environmental Operating Principles (EOP). However, defining sustainability in terms of the environment can be challenging, especially when weighed against the demands of economic growth. The USACE EOP principles rightly emphasize the need to preserve and protect critical natural resources such as clean air, clean water, and healthy ecosystems for future generations. Unfortunately, for many years, the pursuit of economic prosperity has been at the expense of these resources. The consequences of this trend are now evident in the form of rising sea levels, frequent and intense rainfall and runoff, and compound flooding that threaten to deplete these resources and harm the well-being of those who depend on them.

The USACE is responsible for defending and safeguarding the air, land, and waters in and around the Lower Cape Fear River. I appreciate the opportunity to comment on this crucial endeavor. Thank you.

Respectfully submitted,
Brayton Willis
Leland, NC

From Andy Wood in the Wrightsville Beach Magazine, November 2013, titled Ghost Trees – Stoic Reminders of Bygone Time, Climate and River. "Cape Fear's ghost trees are silent reminders of a bygone era, a bygone climate, and a bygone river. The ghost trees we see throughout Cape Fear's lower reaches died as a result of saltwater intrusion that proved toxic for the freshwater trees and the habitats they once helped support. Saltwater continues to flood into and up the Cape Fear River, just as it has done for

thousands of years. What is different today is the increased rate at which salty water is drowning the Cape Fear River; a rate hastened by the engineered deepening of the rivers connection to the ocean.”