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Submitted via electronic mail

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Re: Comments on the Notice of Intent to Prepare a Draft Environmental Impact Statement for the Wilmington Harbor Navigation Improvement Project

Mr. Gatwood,

The Southern Environmental Law Center ("SELC") submits these comments on behalf of Audubon North Carolina, Cape Fear River Watch, Clean Air Carolina, N.C. Coastal Federation, N.C. Sierra Club's Cape Fear Chapter, and N.C. Wildlife Federation, regarding the U.S. Army Corps of Engineers' ("Corps") Notice of Intent ("NOI") to prepare a Draft Environmental Impact Statement ("DEIS") for the Wilmington Harbor Navigation Improvement Project ("the Project") in New Hanover and Brunswick Counties, North Carolina.

The Corps proposes to complete a DEIS for the Project and has solicited comments from the public on alternatives, impacts to environmental resources, and other issues of concern in the impacted area.[1] According to the NOI, the purpose of the DEIS is to investigate modifications to the existing approach for managing the Wilmington Harbor to accommodate larger container vessels. The Corps anticipates the presence of larger ships due to the Panama Canal Expansion. The N.C. State Ports Authority has already prepared a draft Feasibility Study and environmental report pursuant to Section 203 of Water Resources Development Act ("WRDA").[2]

In accordance with the National Environmental Policy Act ("NEPA"), the Corps must fully assess and disclose all related environmental effects, including direct, indirect, and cumulative impacts, before it makes a final decision about whether to proceed with the Project. We strongly advocate for the consideration of the public interest throughout this entire process, starting with creating an objective statement of purpose and need. The undersigned organizations look forward to remaining engaged in this Project, which has significant implications for Wilmington and the South Atlantic region. Given our longstanding commitment to protecting the natural resources of the region, we request that the Corps involve stakeholder groups throughout the duration of the Project, and express interest in participating in such collaboration.

[1] 84 Fed. Reg. 48,131 (Sept. 12, 2019).
[2] N.C. ST. PORTS AUTH. (SPA), *Wilmington Harbor, North Carolina Navigation Improvement Project: Integrated Section 203 Study & Environmental Report* (Jun. 2019) (on file with N.C. SPA) (hereinafter "Feasibility Study").

I. LEGAL BACKGROUND

NEPA is the nation's keystone environmental law, passed by Congress to "encourage productive and enjoyable harmony between man and his environment; to promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man."[3] NEPA has two primary aims: "First, it places upon an agency the obligation to consider every significant aspect of the environmental impact of a proposed action. Second, it ensures that the agency will inform the public that it has indeed considered environmental concerns in its decision making process."[4]

Under NEPA, federal agencies must prepare an Environmental Impact Statement ("EIS") for any "major Federal action[s] significantly affecting the quality of the human environment."[5] The fundamental purpose of an EIS is to force the agency to take a "hard look" at a particular action—at the agency's need for it, at the environmental consequences it would have, and at less environmentally threatening alternatives that may substitute for it—before the decision to proceed is made.[6] This "hard look" requires agencies to obtain and make public high quality information and accurate scientific analysis.[7] The public scoping process at the beginning of the NEPA process is used to determine the range of issues to be addressed in an EIS and which issues are of greatest concern to the public.[8]

NEPA requires that an EIS contain a statement of purpose and need for the proposed action.[9] Courts regularly have held that the statement of purpose and need should be defined to reflect the objective, general need for the proposed activity rather than the specific, narrow course of action preferred by the applicant or agency.[10] The statement of purpose and need in an EIS must not be defined too restrictively, and may not be so narrowly defined as to reflect the Corps' preferred course of action rather than its underlying basic need and purpose.[11] The Corps should remain vigilant in guarding against an overly restrictive statement of purpose as the agency begins to develop its DEIS.

In turn, the purpose and need statement sets the stage for the agency's analysis of project alternatives. The alternatives analysis is "the heart of the environmental impact statement" and is intended to "provid[e] a clear basis for choice among options by the decisionmaker and the public" by "rigorously explor[ing] and objectively evaluat[ing] all reasonable alternatives" to the proposed action.[12] The agency's review of alternatives should "serve as the means of assessing the environmental impact of proposed agency actions, rather than justifying decisions already

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[3] 42 U.S.C. § 4321.
[4] *Baltimore Gas & Elec. Co. v. Nat. Res. Def. Council (NRDC), Inc.*, 462 U.S. 87, 97 (1983) (internal citations and quotations omitted).
[5] 42 U.S.C. § 4332(2)(C).
[6] 40 C.F.R. §§ 1500.1(b), 1502.1; *Baltimore Gas & Elec. Co.*, 462 U.S. at 97.
[7] 40 C.F.R. §§ 1500.1(b).
[8] *See* 40 C.F.R. § 1501.7.
[9] 40 C.F.R. § 1502.13.
[10] *See, e.g., Citizens Against Burlington, Inc. v. Busey*, 938 F.2d 190, 196 (D.C. Cir. 1991) ("an agency may not define the objectives of its action in terms so unreasonably narrow that only one alternative from among the environmentally benign ones in the agency's power would accomplish the goals of the agency's action, and the EIS would become a foreordained formality"), *cert. denied*, 502 U.S. 994 (1991).
[11] *Id.*
[12] 40 C.F.R. § 1502.14(a).

made."[13] The alternatives analysis is "the linchpin of the entire impact statement," and it is "absolutely essential to the NEPA process that the decisionmaker be provided with a detailed and careful analysis of the relative environmental merits and demerits of the proposed action and possible alternatives."[14]

Here, in light of the significance of the proposed project, to implement NEPA the Corps should "consider and express th[e] activity's underlying purpose and need from a public interest perspective…"[15] The Corps must not select a statement of project purpose that artificially restricts its analysis to alternatives that benefit the Ports Authority to the exclusion of other reasonable alternatives. The Port Authority, in turn, must not finalize its WRDA Section 203 Feasibility Report until the NEPA process is complete and the Port has full information about the environmental impacts of all available alternatives.[16]

Instead, the Corps must carefully consider a full range of alternatives to the Project, including all necessary mitigation and monitoring of environmental impacts. This analysis must contain a "no-action" alternative. For example, the Corps must include in its alternatives analysis an evaluation of whether another harbor could be deepened for less money and with fewer environmental impacts. At present, the Corps is completing or has completed deepenings of multiple channels along the Atlantic and Gulf coasts for the same purpose of accommodating larger container ships and creating transportation efficiencies. While competition to accommodate larger container ships amongst ports in these regions exists, industry observers have explained that not all of these proposed port expansions are necessary.[17] Nevertheless the Corps has been evaluating each proposal in isolation from one another, which will lead to duplicative and costly overcapacity. Only by considering related projects together will all reasonable alternatives emerge, along with proper, region-wide criteria for evaluating them.

II. THE CORPS' NEPA ANALYSIS MUST THOROUGHLY EXAMINE THE ENVIRONMENTAL IMPACTS OF THE WILMINGTON HARBOR PROJECT

NEPA requires federal agencies to include a "full and fair discussion" of direct and indirect environmental impacts,[18] consider the cumulative effects of reasonably foreseeable activities in combination with the proposed action,[19] analyze all reasonable alternatives that would avoid or minimize the action's adverse impacts,[20] and address measures to mitigate those adverse effects. [21] Port expansion and harbor deepening projects are some of the most environmentally significant projects affecting the Southeast. Consequently, this Project poses many threats to the numerous natural resources found in the area, and those impacts must be fully evaluated.

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[13] 40 C.F.R. § 1502.2(g).
[14] *NRDC v. Callaway*, 524 F.2d 79, 92 (2d Cir. 1975).
[15] 33 C.F.R. Pt. 325, App'x B(9)(b)(4).
[16] *See* 33 U.S.C. § 2282(a)(4).
[17] *See, e.g.*, John Schwartz, *Panama Canal's Growth Prompts U.S. Ports to Expand*, N.Y. TIMES (Aug. 20, 2012), https://www.nytimes.com/2012/08/21/us/us-ports-seek-to-lure-big-ships-after-panama-canal-expands.html.
[18] 40 C.F.R. § 1502.1.
[19] *Id.* § 1508.7.
[20] *Id.* § 1502.1.
[21] *Id.* § 1502.14(f).

The natural environment surrounding the Wilmington Port boasts spectacular barrier islands, tidal creeks, and marsh ecosystems rife with wildlife and natural resources. Among those resources are fish habitats vital to the State's economy. Parts of this area have been designated as essential fish habitat or habitat areas of particular concern under the Magnuson-Stevens Fishery Conservation and Management Act, 16 U.S.C. §§ 1801 *et seq.*, to protect a variety of species, including red drum, king and Spanish mackerel, cobia, Atlantic butterfish, bluefish, summer flounder, shrimp, ten shark species, and over fifty snapper-grouper species.[22] Hundreds of acres of riverine, estuarine, and nearshore coastal waters up and down the coast, including those surrounding the mouth of the Cape Fear River, serve as primary nursery areas ("PNAs") where post-larval and juvenile development of young finfish and crustaceans takes place.[23] The lower Cape Fear River is also designated as critical habitat for the federally endangered Atlantic sturgeon, which can live up to sixty years and travels upriver to spawn.[24] Both the Cape Fear River and Northeast Cape Fear River are identified as important spawning rivers for Atlantic sturgeon, meaning that both juvenile and adult sturgeon are present in the rivers at different times of the year.

Turtles are commonly found near the Wilmington Port, as neighboring Caswell Beach and Bald Head Island are important nesting grounds for federally protected sea turtles, and within the river, sandy shorelines, shell rakes, and marsh edges are nesting sites for state-listed diamondback terrapins. North Carolina is home to five species of sea turtle, all of which are protected under the federal Endangered Species Act ("ESA"), including the threatened loggerhead turtle. Both nesting and non-breeding sea turtles of all ages can be found in inshore and nearshore waters throughout the year.[25] In 2014, nearshore waters off the Wilmington Port and surrounding beaches were designated as critical habitat to protect nesting loggerhead females approaching the beach.[26] Nearby Bald Head and Oak Islands are also protected as terrestrial critical habitat for nesting females.[27] Sea turtles are iconic elements of the tourism industry in North Carolina. On neighboring Bald Head Island, sea turtle viewing activities bring in as much as $30 million per year in tourism spending.[28]

The diversity of habitats found along the Port supports a great variety of bird life throughout the year; over 330 species of bird have been spotted in this region, from bald eagles to piping plovers.[29] Thousands of shorebirds stop over during spring and fall migration and to overwinter, utilizing the extensive tidal flats, river islands, marshes, and beaches. Over 25 percent of the State's coastal waterbirds depend on the lower Cape Fear River region for nesting,

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[22] Online GIS Layer, *Essential Fish Habitat Mapper*, NAT'L MARINE FISHERIES SERV. (NMFS) (Sept. 4, 2019), https://www.fisheries.noaa.gov/resource/map/essential-fish-habitat-mapper.
[23] *See* 15A N.C. Admin. Code 3I.0101(4)(f) (differentiating between primary, secondary, and special secondary nursery areas).
[24] 82 Fed.Reg. 39,160 (Aug. 17, 2017).
[25] Sheryan P. Epperly et al., *Sea Turtles in North Carolina's Waters*, CONSERVATION BIOLOGY (Apr. 1995), attached as Exhibit 1.
[26] 79 Fed. Reg. 39,856 (Jul. 10, 2014).
[27] 79 Fed. Reg. 39,755 (Jul. 10, 2014).
[28] Kate Elizabeth Queram, *Report – Sea Turtles Have Economic Impact*, STAR NEWS (Dec. 4, 2013), http://www.starnewsonline.com/news/20131204/report---sea-turtles-have-economic-impact, attached as Exhibit 2.
[29] *Brunswick Islands Birding*, N.C.'S BRUNSWICK ISLANDS, https://www.ncbrunswick.com/activity/brunswick-bird-watching (last visited Oct. 10, 2019), attached as Exhibit 3.

meaning this region is critical for supporting healthy state and regional populations.[30] These species include the state-endangered common tern, state-threatened gull-billed tern, and state species of concern American oystercatcher, black skimmer, glossy ibis, least tern, little blue heron, snowy egret, tricolored heron, and Wilson's plover. Bald Head Island supports the state's largest population of breeding painted buntings, and the lower Cape Fear supports the state's largest group of great cormorants.[31] Federally threatened piping plovers also have critical habitat designated adjacent to the Port at Fort Fisher.[32] Understandably, bird-watching is a popular pursuit in the lower Cape Fear region, drawing locals and birders from across the Southeast.

In addition, dozens of marine mammal species frequent North Carolina's nearshore waters. Examples of such species include humpback whales, bottlenose dolphins, West Indian manatees, and the critically endangered North Atlantic right whale. Importantly, the impact area of the Project overlaps with North Atlantic right whale critical habitat, used by migrating mothers and their calves.[33] At present, the only remaining population of North Atlantic right whale is suffering a drastic decline in the Atlantic, with ten deaths recorded this year.[34]

Given the vibrant natural and economic resources in the area, all foreseeable environmental impacts to these resources from the Project require thorough examination in the DEIS. These impacts will be discussed in the subsections below.

A. The Corps must fully account for all direct and indirect impacts of the Project on the abundant coastal resources of the region.

Direct impacts are those that "are caused by the action and occur at the same time and place."[35] Indirect impacts "are caused by the action and are later in time or farther removed in distance, but still reasonably foreseeable."[36] The direct and indirect impacts of expanding the Wilmington Harbor must be fully assessed in the DEIS, particularly with respect to the disruption of the coastal and estuarine ecosystem and the coastal economies that rely on these natural resources. These impacts include, but are not limited to, the following:

Increased Erosion

The DEIS should assess whether the Project may contribute to increased wetland and shoreline erosion along the Cape Fear River and on adjacent oceanfront beaches. The Feasibility Study points out that "[l]ong-term shoreline erosion trends along…Bald Head Island and the east end of Oak Island have been attributed to navigation dredging modifications and associated changes in the configuration of the Cape Fear River inlet…"[37] Deepening or widening the

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[30] *2017 Waterbird Nesting Season Recap*, AUDUBON, https://nc.audubon.org/news/2017-waterbird-nesting-season-recap (last visited Oct. 11, 2019).
[31] *Bald Head – Smith Island*, AUDUBON, https://www.audubon.org/important-bird-areas/bald-head-smith-island (last visited Oct. 10, 2019), attached as Exhibit 4.
[32] 66 Fed. Reg. 36,037 (Jul. 10, 2001).
[33] 81 Fed. Reg. 4,837 (Jan. 27, 2016).
[34] Mary Landers & Allison Ballard, *Endangered right whales inch closer to extinction*, STAR NEWS (Oct. 7, 2019), https://www.starnewsonline.com/news/20191007/endangered-right-whales-inch-closer-to-extinction, attached as Exhibit 5.
[35] 40 C.F.R. § 1508.8(a).
[36] *Id.* § 1508.8(b).
[37] Feasibility Study, *supra* note 2, at 15.

channel, "softening" river bends, and extending the Port seaward would likely affect the wave energy and sediment dynamics of the entire region. Furthermore, shipping wakes from larger and more numerous vessels would alter the wave energy in and around the river. The Corps should take a hard look at how these changes would affect the erosion already occurring both on neighboring beaches and inshore on islands and wetlands marshes lining the river channels.

In addition, the DEIS should consider the secondary effects of any resulting increased use of erosion control methods like sandbags, bulkheads, and beach nourishment. For example, the Corps must study how the increased need for hardened structures would affect the natural environment, especially in light of the recent rules proposed by the N.C. Division of Coastal Management which would make it easier for local governments to place sandbags on areas adjacent to State Ports.[38] Furthermore, the Corps must address any impacts associated with increased beach nourishment events resulting from the Project. Habitat value for foraging shorebirds like piping plovers and nesting sea turtles can be significantly degraded after a beach nourishment event, and these effects must be given consideration in the DEIS.[39]

Flooding

Given that the Project is likely to harden the shoreline and exacerbate erosion and wetland loss in the area, the DEIS should consider the added potential of increased flood hazards resulting from the Project, which has been observed after other harbor deepening projects.[40] Wilmington already experiences some of the most frequent sunny day flooding in the country—more than 80 days per year.[41] Moreover, storms are becoming more intense as a result of climate change, as warmer air can hold more moisture and add more fuel to storm systems.[42] Storm surge and rainfall become even more damaging when added to rising sea levels. This evaluation should take into account projections of these impacts over the next 100 years, including an assessment of potential flooding in areas likely to be developed in response to the Project.

The Corps' evaluation should also account for how loss of wetlands from the Project would affect the flooding and storm surge vulnerability of surrounding communities. Wetlands provide many valuable services to the ecosystem and surrounding communities in the form of floodwater storage, flow control, and water purification among others.[43] Maintaining existing wetlands so that they continue to provide natural flood storage and storm buffering helps minimize the need for costly flood control and armoring projects in the future.

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[38] *See generally State Ports Inlet Management AEC*, N.C. DIV. OF COASTAL MGMT. (DCM) (Feb. 22, 2018), https://deq.nc.gov/documents/state-ports-inlet-management-aec (last visited Oct. 11, 2019).

[39] *See, e.g.*, Charles H. Peterson et al., *Exploiting beach filling as an unaffordable experiment: Benthic intertidal impacts propagating upwards to shorebirds*, J. EXPERIMENTAL MARINE BIOLOGY & ECOLOGY (Nov. 2006), attached as Exhibit 6; Darren G. Rumbold et al., *Estimating the effect of beach nourishment on* Caretta caretta *(loggerhead sea turtle) nesting*, RESTORATION ECOLOGY (Sept. 2001), attached as Exhibit 7.

[40] *See* Jim Morrison, *As Port Cities Dredge Deeper to Accommodate Growing Cargo Ships, the Risk of Inland Flooding May Rise*, SMITHSONIAN MAG. (Nov. 30, 2018), https://www.smithsonianmag.com/science-nature/port-cities-dredge-deeper-accomodate-cargo-ships-risk-flooding-rise-180970928/, attached as Exhibit 8.

[41] *Id.*

[42] D.R. Easterling et al., *Precipitation Change in the United States*, *in* CLIMATE SCIENCE SPECIAL REPORT: FOURTH NATIONAL CLIMATE ASSESSMENT, VOLUME I, 207-230 (Donald J. Wuebbles et al. eds., 2017), attached as Exhibit 9.

[43] William J. Mitsch et al., *Ecosystem services of wetlands*, INT'L J. BIODIVERSITY SCI., ECOSYSTEM SERV. & MGMT. (Feb. 16, 2015), attached as Exhibit 10.

Marsh Migration

The DEIS should also consider impacts to tidal marshes, which serve important ecosystem functions along the Cape Fear Basin. Tidal marshes protect communities in the form of flood storage and wave buffering,[44] and also provide wildlife habitat, fish nurseries, water purification, erosion control, food supply, and carbon storage.[45] The future of marshes and the ecosystem services they provide are at risk as sea levels continue to rise, as the plants making up this habitat have adapted to live at very specific water levels and can drown in higher water. In absence of man-made barriers, these marsh systems are able to migrate to higher ground as seas rise.[46] Shoreline armoring associated with the Project would likely impede marsh migration, and this should be carefully considered in the DEIS.

Saltwater Intrusion

Deepening estuaries causes saltwater from the Atlantic Ocean to intrude upstream in ways that can significantly alter a waterbody's natural interface of saltwater and freshwater. Saltwater intrusion can result in a number of serious problems, including contamination of surface and groundwater supplies. The major aquifers of the lower Cape Fear River basin include Castle Hayne, Peedee, Black Creek, upper Cape Fear, and lower Cape Fear.[47] Deepening the Harbor threatens to contaminate these supplies by increasing salinity and reducing the thickness of the confining layer separating the bottom of the river and the aquifer. As the Feasibility Study notes, a wedge of saltwater produced by deepening the channel could allow harmful chlorides to reach upstream water intakes.[48] The DEIS must carefully investigate potential impacts from this proposed deepening to surface and groundwater supplies.

Another concern of saltwater intrusion is the loss of freshwater wetlands upriver, such as the bottomland cypress forests. Over time, plants that are adapted to live in freshwater conditions may no longer be able to survive when the water becomes saltier. This potential loss of vegetation and associated ecosystem services as a result of the Project should be thoroughly examined in the DEIS. These impacts accrued from the 2000 channel expansion project are readily observable in the forests of dead cypress trees outside the City of Wilmington.

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[44] Katie K. Arkema et al., *Coastal habitats shield people and property from sea-level rise and storms*, NATURE CLIMATE CHANGE (Jul. 14, 2013), attached as Exhibit 11. *See also* Christine C. Shepard et al., *The protective role of coastal marshes: A systematic review and meta-analysis*, PLOS ONE (Nov. 23, 2011), attached as Exhibit 12.

[45] Denise Sanger & Catharine Parker, *Guide to the salt marshes and tidal creeks of the Southeastern United States*, S.C. DEP'T OF NAT. RES. (2016), attached as Exhibit 13.

[46] Marshes naturally respond to rising seas by gradually migrating inland along with the water. As sea levels rise, tidal waters reach further in to formerly dry land, creating new habitat space for marsh grass. Through a process of plant colonization, the marsh grasses send out new shoots from their roots and shift into the new tidal area. As the marsh grasses and other plants shift, the lowest lying patches of marsh grass become open water. Evidence of marsh migration can already be observed up and down the coast along natural shorelines. *See* Lindsey Smart, *Unraveling Mysteries of Ghost Forests*, N.C. SEA GRANT, https://ncseagrant.ncsu.edu/coastwatch/previous-issues/2017-2/holiday-2017/unraveling-mysteries-of-ghost-forests/ (last visited Oct. 10, 2019), attached as Exhibit 14.

[47] Feasibility Study, *supra* note 2, at 16.

[48] *See id*.

Sea Level Rise

Rising sea levels will continue to put additional stress on the coastline, through increased erosion and higher storm surges, and this must be considered in the DEIS.[49] Changes in wave action along the coast, combined with intensifying storms fueled by climate change, have led to dramatic shifts in longshore sediment transport gradients.[50] Average erosion rates along the Wilmington area beaches, for example, appear to be between 4 and 6 feet per year.[51] Because sea level rise is exacerbated by storm surge and rainfall, it is crucial to consider projected storm surge and rainfall vulnerabilities in addition to sea level rise. The DEIS should evaluate the long-term viability of the Port under such expected conditions. Potential effects of sea level rise under scenarios that reflect low, moderate, and high rates of change should be considered.

Protected Species and Wildlife Impacts

There are significant potential impacts from the Project on protected species and wildlife that require serious consideration under NEPA and appropriate consultation under the ESA.[52] Firstly, the DEIS must evaluate the Project's impacts on threatened and endangered species listed under the federal ESA, as well as species protected under North Carolina state law. This evaluation should cover, at minimum, shortnose and Atlantic sturgeon, manatees, turtles, piping plovers, red knots, as well as the critically endangered North Atlantic right whale, including any critical habitat for these and other federally listed species within or near the Project site.

Increased ship traffic and larger ships are likely to lead to more vessel strikes of protected species and must be considered in the DEIS. Globally, shipping collisions are one of the most troubling threats facing marine mammals and sea turtles. All species of marine mammal and sea turtle are vulnerable to ship strikes because they must surface regularly to breathe. Increased shipping traffic is known to be directly correlated with collisions with whales.[53] North Atlantic right whales are particularly vulnerable to ship strikes, which are one of the greatest threats to their recovery.[54]

Additionally, the DEIS must examine any impacts of increased erosion and shoreline hardening on nearby sea turtle and bird nesting habitats. Repeated dredging, ship traffic, and sea level rise are already contributing to the erosion and decline of these important habitats, and the DEIS should take care to study the impact of deeper dredging and larger wakes from larger ships on these habitats. Moreover, sediment removal by the Project could deprive sandbars and mudflats of sediments, degrading essential bird resting and foraging habitats that are used during

[49] *See* Stephen P. Leatherman, et al., *Sea level rise shown to drive coastal erosion*, EARTH & SPACE SCI. NEWS (2000), attached as Exhibit 15; Roshanka Ranasinghe, et al., *Climate change impact assessment for inlet-interrupted coastlines*, NATURE CLIMATE CHANGE (Sep. 2, 2012), attached as Exhibit 16.
[50] Jennifer M. Johnson, et al., *Recent Shifts in Coastline Change and Shoreline Stabilization Linked to Storm Climate Change*, EARTH SURFACE PROCESSES & LANDFORMS (2015), attached as Exhibit 17.
[51] Online GIS Layer, *DCM Oceanfront Setback Factors (2019)*, N.C. DCM (Mar. 19, 2019), https://ncdenr.maps.arcgis.com/apps/webappviewer/index.html?id=f5e463a929ed430095e0a17ff803e156.
[52] *See* 16 U.S.C. § 1536 (interagency consultation requirement); 50 C.F.R. §§ 402.01, *et seq.*
[53] Manuel Carrillo & Fabian Ritter, *Increasing numbers of ship strikes in the Canary Islands: proposals for immediate action to reduce risk of vessel-whale collisions*, J. CETACEAN RES. MGMT. (Jan. 2010), attached as Exhibit 18.
[54] Gregory K. Silber & Shannon Bettridge, *Vessel Operations in Right Whale Protection Areas in 2009* (NOAA Tech. Memo. NMFS-OPR-44), NMFS (Jul. 2010), attached as Exhibit 19.

the non-breeding season, including the federally listed piping plover and red knot as well as many other Arctic-nesting shorebirds whose populations are already in decline. The DEIS should also include a discussion of the ways in which dredged materials from the Harbor would be used for beach nourishment or to protect or enhance nesting habitats, as well as all related monitoring data collected with respect to the use of dredged materials for these purposes.

The DEIS should also evaluate the ways in which increased light pollution from the Project, all road and railway infrastructure, and induced development and associated habitat loss are likely to affect migratory birds, sea turtles, and other species.

The Corps must also assess potential adverse impacts from the Project on Venus flytraps, which are currently being considered for federal listing under the ESA and thus may become subject to ESA protections before the Corps completes the NEPA process. Recent data shows that as of 2015, one of the few—if not the only—remaining healthy populations in the Wilmington area occurs near the Cape Fear Memorial Bridge.[55] Considering that habitat loss and degradation represents the greatest threat to the species, it is imperative that the Corps takes the Venus flytrap into consideration in its DEIS, documenting where it occurs in the Project area, and analyzing the potential impacts of the project on it.

Lastly, the expansion of the Harbor has the potential to facilitate the introduction of invasive species through the discharge of ballast water from deep-draft vessels. The DEIS must examine whether increasing the amount of ballast water exchange within the Wilmington Harbor could adversely affect the surrounding environment.

Noise Pollution

The DEIS should carefully analyze the impacts of noise associated with the Project. In addition to noise from direct activities like construction (e.g., pile driving) or sediment excavation (e.g., blasting) activities, the DEIS must also look at long-term, indirect noise impacts associated with increased vessel traffic (e.g., engine noise and fog horns), crane container operations, and land-based transportation (at the site, on new roads and railways, and extending onto the existing regional transportation network).

This evaluation should not only encompass impacts on the human environment, but must also include impacts to fish and wildlife. Construction and dredging activities like those that may be required for the Project can introduce a considerable amount of noise into the aquatic environment. Of particular concern, for example, is the potential for sturgeon mortality from localized blasting, which may be required to break apart underground rocks.[56] In addition, the sounds produced during pile driving can be intense enough to induce hearing loss in some marine mammal species[57] and ruptured swim bladders in some fish species.[58] Finally, shipping

[55] *See* Donald M. Waller et al., *Petition to list the Venus flytrap (*Dionaea muscipula *Ellis) as Endangered under the 1973 Endangered Species Act* (Oct. 21, 2016), attached as Exhibit 20, at 20.
[56] *See Harbor Deepening: Potential Habitat and Natural Resources Issues*, ATL. ST. MARINE FISHERIES COMM'N (Feb. 2013), attached as Exhibit 21.
[57] Helen Bailey et al., *Assessing underwater noise levels during pile-driving at an offshore windfarm and its potential effects on marine mammals*, MARINE POLLUTION BULL. (Jun. 2010), attached as Exhibit 22.
[58] Brandon M. Casper et al., *Recovery of barotrauma injuries resulting from exposure to pile driving sound in two sizes of hybrid striped bass*, PLOS ONE (Sept. 11, 2013), attached as Exhibit 23.

traffic elevates the level of ambient noise in the marine environment, which induces stress[59] and shrinks the area over which whales can effectively communicate.[60]

Disposal of Dredge Material

Deepening and channel maintenance activities can directly destroy or degrade wildlife habitat via the placement of millions of cubic yards of dredged spoil. The Feasibility Study states that this disposal would occur either offshore at the New Wilmington Harbor Ocean Dredged Material Disposal Site ("ODMDS"), or onshore at either confined disposal facilities ("CDF") or on nearby beaches as beach nourishment.[61] The DEIS must rigorously assess how contaminants potentially found in this dredged material may harm human health and wildlife. Moreover, the Corps must carefully study how the deposit of large quantities of dredged sediments in the water column and on beaches would affect the surrounding environment. For purposes of evaluating this proposal, the Corps should also thoroughly assess of the current state of CDF and ODMDS sites utilized in connection with the Wilmington Port. Finally, the Feasibility Study failed to include any beneficial use of dredged material. The DEIS must consider how dredged material can be used to create, protect, and enhance habitat, such as nesting bird habitat, that would be harmed by the project.

Water Quality Impacts

In addition to contamination and sedimentation from dredge material disposal, the activity of dredging itself can negatively impact water quality by stirring up sediments and toxic materials that may be found on the bottom of the river. Harbor deepening can also reduce dissolved oxygen levels to unnaturally low levels on a river's bottom, as well as alter the horizontal and vertical salinity profiles of the river. Such changes in the aquatic chemistry of the region can imperil wildlife and fisheries[62] and must be studied carefully in the DEIS, especially within protected areas like critical habitat areas and PNAs. Moreover, the Corps must comprehensively evaluate anticipated impacts to wetlands in the vicinity of the Port. The Port has been dredged for over a century, which has led to salinity and tidal range changes as well as extensive changes to wetlands in the area. Finally, indirect impacts from increased truck traffic and induced growth can lead to additional impacts from stormwater runoff through the addition of harmful pollutants into surrounding watersheds.

Air Quality Impacts

The DEIS must carefully examine impacts to air quality from the Project, particularly how the deepening would impact the type and number of ships visiting the Wilmington Port, and how the nature of this new shipping traffic would impact air quality. Marine shipping operations constitute a major source of harmful air pollutants. Ocean-going vessels, land-side equipment,

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[59] Rosalind M. Rolland et al., *Evidence that ship noise increases stress in right whales*, PROC. ROYAL SOC'Y B (Feb. 8, 2012), attached as Exhibit 24.
[60] Christopher W. Clark et al., *Acoustic masking in marine ecosystems: intuitions, analysis, and implication*, MARINE ECOLOGY PROGRESS SERIES (Dec. 3, 2009), attached as Exhibit 25.
[61] Feasibility Study, *supra* note 2, at 94.
[62] Thomas R. Reinert & James T. Peterson, *Modeling the effects of potential salinity shifts on the recovery of striped bass in the Savannah River Estuary, Georgia–South Carolina, United States*, ENVTL. MGMT. (Feb. 22, 2008), attached as Exhibit 26.

and secondary emissions from port development have significant impacts to air quality.[63] Emissions of greatest concern include nitrogen oxides (NOx), particulate matter ("PM"), sulfur oxide (SOx), carbon monoxide (CO), hydrocarbons, and diesel exhaust.[64] The U.S. Environmental Protection Agency has recognized that impacts of port-related air pollution extend beyond local communities to "contribute significantly to regional air pollution."[65] In addition, the DEIS must also examine how increased truck trips would contribute to air quality problems in the region. Specifically, we recommend that additional truck emissions and congestion be evaluated for the entire Port.

The DEIS should assess the project's impacts to the region's status under the Clean Air Act, 42 U.S.C. §§ 7401-7671q. The DEIS should analyze and disclose whether the project would push impacted areas into non-attainment or maintenance status and what the project's incremental impacts on compliance, or lack thereof, with applicable National Ambient Air Quality Standards will be.

In addition, the Corps must evaluate the public health impacts of declining air quality associated with the Project. This must include detailed dispersion modeling to accurately assess impacts to local communities and to account for the fact that those nearest the source face the greatest threat from exposure to air toxins. Given the wide and growing recognition of the significant harm port-generated air pollution can do to human health, the Corps should include a risk-based health impact study.

Finally, global trade is a major contributor to greenhouse gas ("GHG") emissions. The DEIS should take a hard look at the Project's resulting increase in energy use and GHG emissions from transportation to and from the Port, including evaluating how the Project could impact land-based vehicle miles traveled and corresponding GHG emissions. The Corps must also consider the energy use and emissions from regional development induced by the Project.

Socioeconomic and Environmental Justice Impacts

Under NEPA the federal agency must consider the "human environment," "interpreted comprehensively" to include "the natural and physical environment and the relationship of people with that environment."[66] In this analysis, agencies need to assess "aesthetic, historic, cultural, economic, social, or health" effects, "whether direct, indirect, or cumulative."[67]

There are numerous public health and safety concerns associated with the Project that should be evaluated in the DEIS. These include the risk of additional injuries associated with increased traffic, as well as emergency response delays caused by such congestion.

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[63] *See* John Bishop et al., *EPA Needs to Improve Its Efforts to Reduce Air Emissions at U.S. Ports* (Report No. 09-P-0125), U.S. ENVTL. PROT. AGENCY (Mar. 23, 2009), attached as Exhibit 27 (explaining that air pollution from port activities "impact[s] communities surrounding port areas" and has "significant environmental and human health impacts, such as cancer and asthma").
[64] *Id.* at 2.
[65] *Id.* at 2, 3. *See also* Daniel Lack et al., *Light absorbing carbon emissions from commercial shipping*, GEOPHYSICAL RES. LETTERS (Jul. 2008), attached at Exhibit 28 (finding that commercial shipping considerably impacts air quality and human health on "local and regional scales").
[66] 40 C.F.R. § 1508.14.
[67] *Id.* § 1508.8.

The DEIS should also assess impacts on recreational activities, with particular focus on water-borne recreation, including boating, fishing, oyster harvesting, shrimping, and bird-watching. These activities face a significant risk of impairment from increased container vessel traffic, particularly in light of the increased size of the larger vessels that would enter the Harbor. There are further public safety risks associated with conflicts between passing ships and recreational vessels.

Finally, the DEIS must evaluate disproportionate impacts of the Project on low-income and minority populations. Executive Order 12898, which addresses the federal government's responsibility to carry out its activities in keeping with environmental justice ("EJ") principles, mandates that each Federal agency "identify[] and address[], as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations."[68] The Presidential Memorandum accompanying Executive Order 12898 emphasized the importance of using the NEPA review process to promote environmental justice, and directed Federal agencies to analyze the environmental effects, including human health, economic, and social effects, of their proposed actions on minority and low-income communities when required by NEPA.[69]

There are a number of lower income and minority communities adjacent to the Wilmington Port, including the Sunset Park, Marion Long Leaf, and Hanover Heights neighborhoods located immediately east and southeast of the Port along Shipyard Boulevard. A number of additional EJ communities such as Snowfield, Spring Hill, and Easy Hill exist on the west side of the canal. The DEIS should consider, at a minimum, impacts to these and other EJ communities from increased land-based traffic, toxic air pollution, water quality impacts, and potential displacement as a result of the Project.

Other Indirect Impacts

In addition to the impacts of increased truck traffic and other indirect impacts from the Project mentioned in detail above, the Corps must also evaluate the impact of induced development resulting from the expanded Port facility. Of particular concern is the potential for additional polluting wood pellet facilities that service the Port.[70] Additionally, the Project has the potential to affect how this region of North Carolina develops. The DEIS must carefully consider how and where the Project might induce growth throughout the region, including the resulting impacts to communities and natural resources.

B. The Corps must fully assess the cumulative impacts of the Project on the coastal environment.

In determining the scope of the required NEPA analysis, an agency must consider not only the proposed action, but also three types of related actions—"connected actions," "similar

[68] Exec. Order 12,898, 59 Fed. Reg. 7,629 (Feb. 16, 1994).
[69] Memorandum on Environmental Justice, 1 PUB. PAPERS 241 (Feb. 11, 1994).
[70] *See Enviva Partners, LP: Business Overview*, ENVIVA (Nov. 13, 2018), attached at Exhibit 29, at Slides 25-26 (describing 3 million MTPY capacity at the Wilmington Port, much of which is unused, and mapping nearby plants under construction or on track for expansion that would export from the Wilmington Port).

actions," and "cumulative actions."[71] "Cumulative actions" are those "which when viewed with other proposed actions have cumulatively significant impacts."[72]

NEPA regulations define "cumulative impact" as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions."[73] NEPA's hard look "requires analysis of the combined impact that may result from…[the same activities occurring] over or near the same geographic area."[74] The cumulative impact analysis must be more than perfunctory; it must provide a "useful analysis of the cumulative impacts of past, present, and future projects."[75] Here, the Corps must consider in the DEIS the interaction of deepening the Wilmington Port with the other projects planned or underway in this area.

The Corps must consider the other deepening projects that are underway or have already been completed at the Wilmington Port and elsewhere in the South Atlantic. Taken together, other deepening projects, such as in Norfolk, Charleston, Savannah, and Jacksonville, present heightened risks to the natural resources in the region. These projects will have significant adverse impacts on coastal resources, which the Corps must analyze in conjunction with the adverse impacts of the Project.

In fact, under NEPA, where "several proposals for [projects] that will have cumulative or synergistic environmental impact upon a region are pending concurrently before an agency, their environmental consequences must be considered together."[76] Accordingly, a comprehensive or programmatic analysis is appropriate where the proposal itself is regional or systemic in scope, or where the proposal is one of a series of interrelated proposals that will produce cumulative system-wide effects that can be meaningfully evaluated together.[77]

The DEIS should also take a hard look at whether the Project may exacerbate existing and reasonably foreseeable environmental threats in the lower Cape Fear River. The waterway is already impaired by contamination by agricultural runoff, GenX, and the Southport Power Plant, among other sources.

III. CONCLUSION

The undersigned organizations appreciate the opportunity to provide the above comments regarding the proper scope of the DEIS for the Project. We look forward to remaining engaged with the Corps and other agencies throughout the NEPA process, including through the use of stakeholder groups, to gain a thorough understanding of the Project's significant environmental impacts.

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[71] 40 C.F.R. § 1508.25(a).
[72] *Id.* § 1508.25(a)(2).
[73] *Id.* § 1508.7.
[74] *Nat'l Audubon Soc'y v. Dep't of Navy*, 422 F.3d 174, 197 (4th Cir. 2005) (finding the Navy's cumulative impacts analysis for an airfield in eastern North Carolina insufficient and ultimately finding the challenged EIS unlawful).
[75] *Muckleshoot Indian Tribe v. U.S. Forest Serv.*, 177 F.3d 800, 810 (9th Cir. 1999) (citing *City of Carmel-by-the-Sea v. U.S. Dep't of Transp.*, 123 F.3d 1142, 1160 (9th Cir. 1997)).
[76] *Kleppe v. Sierra Club*, 427 U.S. 390, 410 (1976)
[77] *Ga. River Network v. U.S. Army Corps of Eng'rs*, 334 F. Supp. 2d 1329, 1342 (N.D. Ga. 2003) (quoting *Izaak Walton League of Am. v. Marsh*, 655 F.2d 346, 374 (D.C. Cir. 1981)).

Sincerely,

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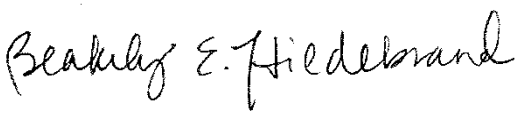

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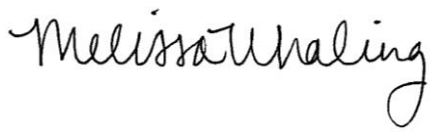

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