

public meeting





Welcome/ Sign in/ Video Introduction

Open House with Themed Stations

Repeated Presentation





Welcome to the Public Scoping Meeting

Presentation by USACE

Online:

Online comments may be made through the Public Comment Tool

The Public Comment Tool can be found on the project website:

<u>https://wilmington-harbor-usace-saw.hub.arcgis.com/</u>

Early Scoping Public Comments by June 30, 2023



Mail:

US Army Corps of Engineers Wilmington District ATTN: Wilmington Harbor 403 69 Darlington Avenue Wilmington, NC 28403

Please submit mailed comments by June 30, 2023









PUBLIC ENGAGEMENT OPPORTUNITIES

The Corps Values Your Input!

Wilmington District is conducting an evaluation of technical and policy concerns noted in the Assistant Secretary of the Army's Civil Work's May 2020 Review Assessment of the North Carolina State Ports Authority's February 2020 Water Resources Development Act (WRDA) 203 Feasibility Study which resulted in conditional authorization in Section 403 of WRDA 2020 of deepening the main channel to 47 feet from the current depth of 42 feet.





• After review of the information provided, is there anything missing?

Tips for Comments:

• Detailed specific comments are the most useful:

- Propose detailed solutions/alternatives that can inform alternatives development
- Describe specific examples related to your concern/issue
- Provide details that explain why the issue is important
- Include relevant reports or studies

WAYS TO COMMENT

Submit a comment card at the public meeting

WilmingtonHarbor403@usace.army.mil

Please submit emailed comments by June 30, 2023

> Scan the QR Code to access the Project Comment Tool

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- » Why are harbor improvements at Wilmington needed?
- » Who would benefit from harbor improvements?
- » What else would need to change if the navigation channels are deepened?
- » How might this project impact you?
- » What should we consider when analyzing this information?

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PROJECT DEVELOPMENT THROUGH STATE AND FEDERAL PARTNERSHIP

North Carolina State Ports Authority NCSPA - Section 203 Feasibility Study (February 2020)

- Authority (NCSPA)
- Section 203 of the Water Resources Development Act (WRDA) of 1986 allows non-Federal interests to conduct their own feasibility study
- Tentatively Selected Plan recommended deepening to 47 feet
- Review

CHANGING VESSEL FLEET Beam 144 168 51.2 Draft • The larger, more efficient vessel fleet is driving LOA 122 Up to improvements at harbors worldwide as indicated TEUs 9,901 15,0 through the percent of container tonnage by vessel class documented in the chart below. 138 144 Beam 39.4 49.2 Draft LOA 1,20 911 TEUs 6,801 9,90 2014) 2000) .988) 106 138 .980) .956) Beam 35.4 47.6 Draft 104 LOA 661 4,801 6,80 TEUs 98 106 Beam 100% 30.8 44.8 Draft 80% LOA 970 572 2,801 4,80 60% TEUs 40% 98 Beam 20% 38.1 Draft 8.2 SU PANA LOA 222 813 2020 2018 2019 2017 2016 TEUs 2,80

PPX GEN III	(20
PPX GEN II	(20
PPX GEN I	(19
Panamax	(19
Sub Panamax	(19

LEGEND **PERCENT CONTAINER TONNAGE BY VESSEL CLASS**

WILMINGTON HARBOR 403 LETTER REPORT & ENVIRONMENTAL IMPACT STATEMENT

BACKGROUND

• Conducted by the North Carolina State Ports

• Submitted to the ASA(CW) in February 2020 for

Assistant Secretary of the Army (ASA (CW) Review Assessn (May 2020)

- Transmitted to Congress with unresolv including:
- Reframe assumptions and screening
- Perform economic analysis using USA methodology at multiple depths
- Conduct National Environmental Poli analysis including supporting engineer and appropriate sea level rise
- Finalize a mitigation plan and a real e
- Conduct Independent External Peer

Civil Works) nent	Water Resources Development Act WRDA 2020 (December 2020)
ved comments of alternatives ACE icy Act (NEPA) ring modeling estate plan Review	 Congress authorized the navigation project, at a total cost of \$834,093,000 through Section 403 of Water Resources Development Act (WRDA) 2020 WRDA 2020 included a condition that a final assessment address the concerns, recommendations, and conditions identified by the ASA (CW)

366x	New-Panamax (2014-) 12,500 TEU	2 0 000
340x43x14.5	Post-Panamax (2000-) 6,000- 8,500 TEU	2)5)0
300x40x13	Post-Panamax (1988-) 4,000- 6,000 TEU	5 5 00
250x32x 290x32x12.5	Panamax (1980-) 3,000- 3,400 TEU Panamax Max (1985-) 3,400- 4,500 TEU	3
137x17x9 (LOA - Beam - Draf meters 200x20x9 215x20x10	Early Containerships (1956-) 500- 800 TEU Fully Cellular (1970-) 1,000- 2,500 TEU	L .3)0

PLAN FORMULATION

PURPOSE AND NEED

PURPOSE: Contribute to national economic development (NED) by addressing transportation inefficiencies for the forecasted vessel fleet, consistent with protecting the Nation's environment.

NEED: The proposed action is needed to address the constraints that contribute to inefficiencies in the existing navigation system's ability to safely serve forecasted vessel fleet and forecasted cargo types and volumes.

OBJECTIVES

Contribute to national economic development to:

1. Reduce total costs to transport import and export cargo through Wilmington Harbor

2. To address physical constraints that induce navigation safetyrelated operating practices that contribute to delays, including limited passing and one-way traffic in some reaches

MEASURES FROM THE SECTION 203 FEASIBILITY STUDY

Section 403 of WRDA 2020 authorized the deepening the main channel to 47 feet from the current depth of 42 feet. Additionally, wideners were proposed for the following reaches:

REACH	Existing Channel Width (FT)	203 TSP Channel Width (ft)
Anchorage Basin- 0+00 to 8+00	448-548	625-1509
Anchorage Basin- 8+00 to 84+85	547-1200	625-1509
Between Channel	500-545	625
Battery Island	500-820	800-1300
Southport	500	800
Baldhead- Caswell	5000-646	800
Smith Island Channell	650-895	900
Baldhead Shoal- Reach 3	500	600-900
Offshore Extension (New Reach 4)	NA	600

SCREENING OF ALTERNATIVES

- A range of action alternatives will be developed and compared to and contrasted with each other and with the "no action alternative"
- They will be screened terms of their relative:
- » Effectiveness
- » Efficiency
- » Completeness
- » Acceptability

Baldhead Shoal Channel - Range 4

HOW WILL THE SELECTED ALTERNATIVES BE IDENTIFIED?

- This analysis will examine a broad range of considerations:
- » Construction, Operations and Maintenance costs
- » Cost savings associated with navigation improvements
- » Environmental impacts and mitigation
- » Social impacts
- » Cultural and historical resource impacts

WHO MAKES THE FINAL DECISION?

 USACE will submit the final Letter Report and Environmental Impact Statement to the ASA(CW).

Technically Feasible

- » From an economics standpoint, what are concerns / impacts to your community?
- » What data or information should be evaluated?
- » What concerns do you have related to potential transportation impacts?
- » Do you have additional data or information?

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PURPOSE

VESSEL FLEET

z	Beam	144
L PA	Draft	
OS1 GEI	LOA	Up to
₽.	TEUs	9,901
Z	Beam	138
<u> </u>	Draft	201

OST PA GEN II	Draft	39.4
	LOA	911
_	TEUs	6,801

Z	Beam	106
T PA	Draft	35.4
OST GE	LOA	661
d	TEUs	4,801

X	Beam	98
W/	Draft	30.8
ANA	LOA	572
P/	TEUs	2,801

SUB NAMAX	Beam	
	Draft	8.2
	LOA	222
PA	TEUs	

WILMINGTON HARBOR 403 LETTER REPORT & ENVIRONMENTAL IMPACT STATEMENT ECONOMICS

- Real Estate and Environmental Mitigation Costs
- Operations & Maintenance Cost
- Associated costs (USCG Aids to Navigation, etc.)

Determining USACE Project Participation

USACE participation in projects "... if the benefits to whomsoever they may accrue are in excess of the estimated costs..."

A Benefit-cost analysis is performed:

• Comparing benefits (cargo transportation savings) to the costs of Navigation Improvements

• Benefit Cost Ratio (BCR) in monetary terms, must be 1.0 or

• Benefits and costs are annualized and estimated over 50-year

Basis for Economic Benefits in USACE Navigation Studies

• The reduction in the cost to transport cargo/commodities • Employment of larger vessels or the more efficient use of vessels

Comparing Alternatives (Benefits)

• Use HarborSym Model to determine future cargo movement

- Captures transportation cost difference due to variation in loading patterns (same cargo – fewer trips, etc.)
- Calculates vessel time/cost in harbor (nodal network example) - Also calculates overseas distance and costs
- Model each depth alternative (including No Action Alternative)

Comparing and Calculating (Costs)

- All Federal and Non-Federal Costs to implement
- Construction and Placement costs

- » How would the potential actions, including harbor deepening, impact you or resources that are important to you?
- » What concerns do you have for you and your community?
- » What resources should be evaluated in the Draft EIS?
- » What are some potential project opportunities ?
- » Are there data, studies, reports that would support the analysis in the EIS?
- » After review of the information provided, is there anything missing?

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The Public Can Participate in the NEPA Process by:

- **Commenting** on the proposed actions
- Helping **identify** the issues to be considered
- Helping **formulate** alternatives based on purpose and need
- Providing **information** data/ studies

WILMINGTON HARBOR 403 LETTER REPORT & ENVIRONMENTAL IMPACT STATEMENT

THE NATIONAL ENVIRONMENTAL POLICY ACT (NEPA)

What is NEPA?

- **REQUIRES** all federal agencies to analyze potential environmental, social, and economic impacts of proposed actions and to identify and consider reasonable alternatives to those actions.
- ENCOURAGES public involvement throughout the project to help inform decision makers on how the impacts of proposed actions might affect communities.
- **IMPROVES** federal decision making through meaningful public engagement.

We

Spring - Summe **NEPA Process** SCOPING **PROJECT INITIATION** Hold Public meeting • Develop Purpose & Need • Solicit input regarding • Develop Preliminary Scope » Scope of analysis of The Draft EIS » Issues to consider » Alternatives develo » Purpose and Need PUBLIC SCOPING **STAKEHOLDER** (Comment Period May. 2023) **PUBLIC ENGAGEMENT IDENTIFY SIGNIFICAN** Examples Include: **IMPACT EVALUATION** Wetlands AND MITIGATION • Fish & Wildlife Water Quality • Air Quality

Where Are We In This Process?

 \checkmark Scoping Period-Scoping is the earliest opportunity for the public to shape the analysis.

Describes the what and why for the proposed action & informs the development of alternatives

- environment.

Are Here		
er 2023	Fall 2023 - Fall 2024	Fall 2023 - F
pment	 ALTERNATIVES DEVELOPMENT Develop alternatives screening criteria Develop alternatives by combining remaining measures Screen reasonable alternatives 	 ANALYSIS Describe affected Assess impacts of alternatives Identify preferred Draft EIS docume cultural, and socio
30 - June 30,	PUBLIC OUTREACH - Notice of Intent (Fall 2024) Solicit public input on an array of alternatives	PUBLIC COMMEN Release Draft EIS (45-day comment)
NT RESOURCES	DETERMINE EXTENT OF IMPACTS	AVOID OR MINIM
Environmental Iustice Cultural Resources	 Consult with Federal, State, and local resource experts Conduct modeling to determine the level of impact to significant resources 	 Identify avoidance action to reduce i

Purpose and Need

• **PURPOSE:** Contribute to national economic development (NED) by addressing transportation inefficiencies for the forecasted vessel fleet, consistent with protecting the Nation's

• **NEED:** Address the constraints that contribute to inefficiencies in the existing navigation system's ability to safely serve forecasted vessel fleet and cargo types and volumes.

- » How would harbor deepening impact you or resources that are important to you?
- » What resources should be evaluated in the EIS?
- » What are some opportunities that may become available if the project takes place?
- » What concerns do you have related to potential impacts to resources?

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Physical Resources

- Water Quality
 - Dissolved Oxygen
 - Salinity
 - Temperature
- Air Quality
- **Emissions Inventory** -Greenhouse gases
- Noise
- Visual/Viewshed
- Hydrology/Flooding

Erosion control at Brunswick Town and Fort Anderson Historic Site Credit: Scenic Consulting Group

Coastal Wetlands. Credit: UNCW

WILMINGTON HARBOR 403 **LETTER REPORT & ENVIRONMENTAL IMPACT STATEMENT**

ENVIRONMENTAL RESOURCES

- Shoreline/Vessel Wake Analysis

Socioeconomics Resources

- Environmental Justice
- Historic/ Cultural Resources
- Traffic/ Transportation
- Recreation

Kayaking Cape Fear River. Credit: USACE

Battleship North Carolina. Credit: Wilmington, N.C. River District & Island Beaches

Striped Bass. Credit: NOAA Fisheries

Ecological Resources

- Wetlands - Provide ecological services
- Shallow Soft Bottom - Provides unique habitat for algae, fish, and invertebrates
- Threatened and Endangered Species - Species protected under the Endangered Species Act
- Essential Fish Habitat - Provides key fish habitat for spawning, feeding, and growth
- Bird Habitat - Project area is in Atlantic flyway and provides resting and nesting habitat for various bird species
- Primary Nursery Areas - Provide forage and shelter for juvenile fish and other species, sustaining healthy fisheries
- Invasive Species

Atlantic Sturgeon swimming. Credit: NOAA Fisheries

Rufa Red Knot. Credit: Cornell University

Climate Change

- Climate change effects on future conditions in the project area with and without the project, including:
- Sea level rise
- Precipitation and coastal storm frequency and intensity
- Increasing atmospheric and sea surface temperatures

Hurricane Irene. Credit: NASA

- » How would harbor deepening impact you or resources that are important to you?
- » What data or information should be evaluated in the EIS?
- » What are some potential benefial use opportunities that may be possible if the project takes place?
- » What concerns do you have related to potential impacts to resources?

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DATA COLLECTION

Hydrographic Surveys

 Provides information about the depth of the channel bottom and allows for a volumetric computation of the material to be removed.

Geotechnical Considerations

• Subsurface Information beneath the channel bottom define the sediment and rock types which is used to determine if dredged material can be used for beach placement, bird island or wetland restoration, or reef construction.

WILMINGTON HARBOR 403 **LETTER REPORT & ENVIRONMENTAL IMPACT STATEMENT**

ENGINEERING CONSIDERATIONS

• Various dredging methodologies can be employed to remove material based on its characteristics.

Hydraulic Dredges

Hopper Dredge

Hopper dredges are self-propelled and pump material into onboard hoppers for transportation to the disposal site; similar to a vacuum cleaner.

Hopper Dredges are used primarily for sandy and silty material.

Cutterhead Dredge

The hydraulic cutterhead dredges use a mechanical arm equipped with rotating blades to cut and dislodge materials and pump to the disposal/ placement site through a pipeline.

Cutterhead Dredges are used in areas where dredged material contains clay, sand, rock, or other hard consolidated materials.

• Dredged material, depending on its grain size, may be placed on beneficial use placement areas or offshore in an existing placement area known as the Ocean Dredged Material Disposal Sites (ODMDS).

Battery Island which is home to one of the largest rookeries in the area for the White Ibis. Some of the dredged sediments could be used to expand this nesting area that is populated with hundreds of nests each year.

DREDGING METHODS

as the type and location of sediments along a channel bottom.

Mechanical Dredges - enable more precise dredging

PLACEMENT OF DREDGED MATERIALS

and rock types beneath the channel bottom.

within the Wilmington Harbor shipping channel and places it on adjacent beaches.

• Equipment used to deepen or widen a channel is determined by site characteristics, such

Clamshell Dredge

Clamshell dredges lift material from the sea floor or river bottom using a bucket attached to a boom. Material is then placed on a barge for transport to the disposal site, similar to a crane and a dump truck.

For Limited Use – This system may be used around sensitive cultural sites.

Excavator Dredge

Backhoe dredges are basically land excavators that have been modified for use on water. The loaded bucket is hoisted to the surface and usually side dumped into a barge.

For Limited Use – This system may be used in shallow areas and around sensitive cultural sites that contain clay, sand, rock or other hard consolidated materials.

• Beneficial Use Placement sites include bird islands, wetlands, areas for reef construction, and local beaches. These sites are selected for placement by understanding the sediment

Example Beneficial Use Placement - Wilmington Inner Ocean Bar Project dredges the shoaled sand material from

ENGINEERING CONSIDERATIONS - COASTAL PROCESS

QUESTIONS TO CONSIDER WHEN PROVIDING COMMENTS:

- » How would harbor deepening impact you or resources that are important to you?
- » What data or information should be evaluated in the EIS?
- » What are some potential benefial use opportunities that may be possible if the project takes place?
- » What concerns do you have related to potential impacts to resources?
- » Do you have additional data or information?

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HYDRODYNAMIC MODELING

dynamics

Delft 3D - Hydrodynamic Modeling

Delft3D is a "state of the art" numerical model that will be used to evaluate current conditions, future without project conditions, and future with project alternatives. This model will use the historical and future climate information to simulate water movement through the Cape Fear River to evaluate:

• Water Level Impact

- The tidal range at the Wilmington tidal gauge is currently ~5ft. Tidal range impacts from the project will be evaluated for the areas of interest.

- Water levels will be modeled to identify potential flooding impacts.

• Channel Velocities

- Channel velocities can impact fish migration, shipping traffic, and recreation. Velocities in the Cape Fear River will be analyzed for each alternative to ensure no adverse impacts. A full range of flow patterns ("dry", "normal", and "wet" conditions) will be simulated.

• Sediment Transport

- Suspended and bedload sediment transport will be modeled. This can show changes to the shape of the channel that may occur due to channel modifications. This can also show how often the channel will need to be dredged to maintain the project.

Shoreline Impact

- A Vessel Wake Model will be run to test the alternatives to evaluate ship wake impacts to

WILMINGTON HARBOR 403 LETTER REPORT & ENVIRONMENTAL IMPACT STATEMENT

• Comprehensive representation of coastal water

shorelines or bird island on the Cape Fear River.

• A Wave Transformation Model will be run to look at the changes to waves near the entrance to the Cape Fear River and how they impact the shoreline.

Cape Fear River Watershed

HISTORICAL AND PREDICTED TRENDS: CLIMATE VARIABLES

• Historical and predicted trend in rainfall, river flow, and other climate variables will be evaluated. These variables will be included in the modeling efforts.

