ATTACHMENT E

Navigation Impact Report (NIR)
January 2024

NORTH CAROLINA Turnpike Authority

Navigation Impact Report Update

for the
Mid-Currituck Bridge Project

Prepared for:

NORTH CAROLINA Turnpike Authority

and

Prepared by:

LOCHNER

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INTRODUCTION

PURPOSE

The purpose of this document is to update and reconfirm the planning, coordination, and investigation efforts to best understand the potential navigational clearance needs and requirements for the Mid-Currituck Bridge across Currituck Sound in Currituck County, North Carolina. This effort intends to provide information to reaffirm the likely vertical and horizontal bridge clearance needs and requirements as contained in the Preliminary Navigation Clearance Determination (PNCD) for this project dated February 9, 2021. There have been no material changes in existing conditions or boating characteristics in the area of the Mid-Currituck Bridge project since the time of the prior Navigation Impact Report in December 2020.

A bridge crossing of navigable waters requires a permit from the US Coast Guard (USCG). According to the USCG website for the Office of Bridge Programs, their mission is "to administer the various bridge statutes, environmental laws of the United States, pertinent regulations, and policies in a timely, courteous, responsive, and professional manner. This mission will contribute to the development of a safer, more efficient, and convenient marine and land transportation system that will effectively utilize and conserve the nation's resources in a cost-efficient manner while providing for the well-being, general safety, security, and interests of the citizens of the United States." Furthermore, the current statutes and court rulings require that bridges provide for the "reasonable needs of navigation, not for all the needs of navigation". The reasonable needs of land traffic must also be met.

BACKGROUND

The North Carolina Turnpike Authority (NCTA), a division of the North Carolina Department of Transportation (NCDOT), in cooperation with the Federal Highway Administration (FHWA), has prepared an Environmental Impact Statement (EIS) and Record of Decision (ROD) to evaluate proposed transportation improvements in the Currituck Sound area. To address identified problems and needs, the EIS/ROD identified three primary purposes of the project:

- To substantially improve traffic flow on NC 12 and US 158.
- To substantially reduce travel time for persons traveling between the Currituck County mainland and the Currituck County Outer Banks.
- To substantially reduce hurricane clearance time for residents and visitors who use NC 168 and US 158 during a coastal evacuation.

To meet the three underlying purposes for the project, NCTA is proposing a new bridge across Currituck Sound connecting US 158 and NC 12. The Selected Alternative is shown in Exhibit A at the end of this report.

Throughout the EIS study process, discussions with the USCG relative to any new bridge crossing of Currituck Sound have indicated that the new bridge should meet or exceed the clearance provided (35 feet vertically and 40 feet horizontally) on the US 158 Wright Memorial Bridge (see Exhibit A) at the south end of Currituck Sound unless it can be demonstrated that less bridge

clearance will not impede reasonable needs for navigation. The Wright Memorial Bridge has separate structures for eastbound and westbound traffic movement and is located approximately 18.5 miles south of the planned location for the Mid-Currituck Bridge. The Wright Memorial Bridge is the only existing bridge crossing of Currituck Sound and is the most restrictive vertical and horizontal clearance on Currituck Sound.

SETTING

Currituck Sound is a shallow protected inlet of the Atlantic Ocean, approximately 30 miles in length and 3 to 8 miles in width with numerous islands. At the proposed Mid-Currituck Bridge crossing location, Currituck Sound is about 4.5 miles wide. Currituck Sound has a surface area of about 98,000 acres or 153 square miles. Exhibits B and C are the Coast Survey Maps (12204 and 12207) from the National Oceanic & Atmospheric Administration, National Ocean Service that include Currituck Sound, and adjacent water bodies, including Back Bay and the North Landing River.

Currituck Sound is a very low salinity estuary extending from near the North Carolina/Virginia state line south to its confluence with Albemarle Sound. Water is supplied to Currituck Sound from three primary sources: freshwater streams, groundwater, precipitation, and ocean water. The main sources of freshwater include several feeder streams, groundwater, and direct precipitation. Currituck Sound is connected to the Atlantic Ocean both to the south and to the north. The southern ocean connection is via Albemarle Sound and Oregon Inlet (shown in Exhibit B). There are two northern connections to the Chesapeake Bay and the Atlantic Ocean (shown in Exhibit C). Both are along the North Landing River with one using West Neck Creek, Canal No. 2, and London Bridge Creek, and the other connection using the Albemarle Chesapeake Canal and the Elizabeth River (navigable).

The Atlantic Intracoastal Waterway (AIWW) provides a hydrologic and transportation corridor from Albemarle Sound to the Chesapeake Bay that connects to Currituck Sound but not through Currituck Sound (depicted on Exhibits B and C). The AIWW follows the North River in North Carolina (a tributary to Albemarle Sound west of Currituck Sound) and then the North Landing River in conjunction with the Albemarle Chesapeake Canal and Elizabeth River to the north, to the Chesapeake Bay. The AIWW opens onto Currituck Sound for approximately 4 miles at its northern end near Knotts Island. The entire length of the AIWW is dredged from Albemarle Sound to the North Landing River in Virginia, including the portion adjacent to Currituck Sound.

Some water uses are dependent on the mix of freshwater and saltwater in Currituck Sound. Historically, this inlet of the Atlantic Ocean had two direct connections. However, both have closed. This resulted in a dramatic drop in the salinity level in Currituck Sound. Now the salinity levels are generally between 0.5 and 5.0 parts per thousand (brackish water but nearly freshwater). Typically, the level is less than 3.5 parts per thousand.

A 2001 US Geological Survey (USGS) Water-Resources Investigations Report (01-4097) indicated that increased salinity in the northern portion of Currituck Sound has been attributed to northerly winds driving brackish water south from the Chesapeake Bay. The same report also suggested that increased salinity in the southern portion of Currituck Sound may be a result of southerly

winds driving brackish water north from Albemarle Sound. Winds from the south typically produce higher water levels in Currituck Sound, whereas winds from the north typically produce lower water levels. Winds have a greater influence on salinity levels and water levels in Currituck Sound than do astronomical tides.

The USGS published a water quality study of Currituck Sound in 2020. This study found that the central part of Currituck Sound had the least variability in salinity levels. This is the area where the Mid-Currituck Bridge is proposed for construction. This study found that southerly winds are dominant in the spring and summer and push more saline water up from the south into Currituck Sound, thereby increasing water levels and salinity. Northerly winds are dominant in the fall and winter and tend to push water out of Currituck Sound, decreasing the water levels and the salinity.

The USGS has an operational gage on Currituck Sound near the east bank at Corolla, NC (https://waterdata.usgs.gov/nc/nwis/uv/?site_no=02043433&PARAmeter_cd=00065,00060). This gage has been active since August 2011 to the present, collecting water surface elevations, wind speeds, and wind direction. The maximum daily gage elevations have ranged (August 2011 to September 2019) from a low of -2.14 feet to a high of 4.03 feet with a mean of 0.45 feet. The minimum daily gage elevations have ranged (August 2011 to September 2019) from a low of -2.40 feet to a high of 2.21 feet with a mean of -0.03 feet. The mean daily gage readings range (August 2011 to January 2024) from a low of -2.81 feet to a high of 2.49 feet with a mean of 0.27 feet. The standard deviation for each set of data is about 0.63 feet, which results in typical water levels between -0.66 and 1.08 feet. Based on this data, the mean high-water elevation has been assumed to be approximately 0.50 feet.

The US Army Corps of Engineers Field Research Facility at Duck, NC, established a water level gage (http://www.frf.usace.army.mil/ckSound/csa.html) located in Currituck Sound just south of the Big Narrows. This gage collected water elevation data in 2016-2018. The high-water level was 3.36 feet during the data collection period and the low-water level was -3.18 feet with a mean of 0.11 feet and a standard deviation of 0.64 feet. This means that typical water levels vary from -0.5 feet to 0.75 feet. This data is comparable to the above USGS data.

Water depths in Currituck Sound are generally shallow. The NOAA bathymetric data charts for Currituck Sound are shown in the attached Exhibits B and C. Water depths fluctuate substantially in Currituck Sound. At the Wright Memorial Bridge, water depths are generally 5 to 7 feet, with shallower areas near each shore. Just to the north of the Wright Memorial Bridge, some areas have water depths that are greater than 7 feet but nothing over 9 feet. Further north, there are a series of islands and a narrowing of Currituck Sound called the Big Narrows. Water depths in the Big Narrows area tend to be very shallow in the 1 to 3-foot depth range. The widest water route through the islands is about a half mile wide. This area is an impediment to vessel traffic through Currituck Sound. Immediately north of the islands and the Big Narrows area is the location for the Mid-Currituck Bridge. Water depths in this area generally vary from 3 to 7 feet. Currituck Sound bottom elevations were surveyed along the centerline of the selected alignment and are depicted on the attached profile as Exhibit D. To the north of the proposed Mid-Currituck Bridge crossing, the water depths in Currituck Sound continue to vary substantially with a maximum depth of about 7 feet. This is true for the entire northern portion of Currituck Sound, including the areas adjacent to the AIWW.

Based on available information, it appears that Currituck Sound functions as two connected bodies of water with the Big Narrows and island area separating the two. The southern portion of Currituck Sound has greater connectivity and association with Albemarle Sound south of the Wright Memorial Bridge. The northern portion of Currituck Sound has greater connectivity and association with Chesapeake Bay and the AIWW. The proposed Mid-Currituck Bridge is located just to the north of the narrows and island area. The shallow water depths and the proximity of the narrows would tend to limit large vessel traffic in and through this area.

Currituck Sound historically has supported populations of submerged aquatic vegetation (SAV). In Currituck Sound, these plants are most likely to establish in water depths of less than 6 feet. The shallower the water the greater the potential for SAV as light penetration is increased. Water depth is not the only factor relative to the establishment of SAV. The composition of the bottom sediments along with water flow speeds and wave action also have a bearing on SAV presence. At the proposed bridge crossing, current SAV populations are in the shallow waters near the east and west ends of the bridge. The presence of SAV can be an impediment to vessel activity because of potential interactions between motor propellers and SAV, along with the shallow water depths.

Private property access for vessels is limited along Currituck Sound by the depth of water at the shoreline and the presence of barrier islands, marshlands, and SAV. Private docks do extend into Currituck Sound. These could be mooring locations for vessels (unknown sizes) or could be pedestrian access for non-boat-related water activities. Some of the private docks extend out into the sound to reach deeper water depths than what exists close to shore, and others are relatively short docks close to shore. No information is available on the presence of vessels at these docks or the type and size of vessels that are associated with these docks. However, the presence of the docks is an indicator of potential vessel activity.

Near the bridge on the west side of Currituck Sound, there are approximately 35 docks between the planned crossing location and to the south at the Big Narrows area. South of the narrows, dock access from the west side of the sound begins again at Grandy but is limited further south by adjacent marshlands. North of the proposed bridge on the west side of the sound, there are approximately 13 docks south of the opening to Maple Swamp and an additional 70 docks in the Waterlily area north of Maple Swamp.

Private property vessel access on the east side of Currituck Sound is also limited by the same environmental constraints as the west side. South of the bridge crossing on the east side of Currituck Sound, approximately 44 docks provide private property access to the water before reaching the Big Narrows area. North of the bridge location on the east side of Currituck Sound there are about 12 private docks.

Boat launch facilities are provided at several locations around Currituck Sound. The closest locations to the planned bridge crossing are as follows:

- Poplar Branch – two launches on the west side of Currituck Sound just north of the Big Narrows and island area and approximately 3.5 miles south of the bridge location. This is a public access operated by the North Carolina Wildlife Resources Commission.

- Private Launches – there are several private launches north of the bridge location on the west side of Currituck Sound; the closest one is about 0.6 miles away and there are several in the Waterlily area. There are also private launches along the AIWW near Coinjock.
- Beasley Bay – this is a private launch on the east side of Currituck Sound approximately 4.5 miles south of the bridge.
- Whale Head Bay – this is a private launch located approximately 1.6 miles north of the bridge on the east side of Currituck Sound.

Vessels that engage in emergency operations are certain to operate on Currituck Sound in watercraft that would be appropriate for their activities. These operations would likely include the USCG, various local police, fire, and emergency rescue operations, and fish and wildlife gaming patrols. The USCG station in Wanchese, NC responded to the survey conducted for this project and none of the identified vessels would be restricted by the proposed bridge.

BRIDGE CLEARANCE ACTIONS TAKEN

US COAST GUARD COORDINATION

Throughout the project's lengthy history, NCTA has been coordinating with the USCG relative to potential vertical and horizontal bridge clearance needs for the Mid-Currituck Bridge. This coordination has included meetings and telephone conference calls reviewing the USCG requirements for determining bridge clearance and navigational needs.

As part of those coordination efforts, a Preliminary Public Notice (PPN) was published in 2009 to identify existing and potential future navigational needs relative to the vessels that regularly use or are reasonably likely to use the area of Currituck Sound where the proposed bridge would be located.

The PPN prepared for the Mid-Currituck Bridge included written information about the project, a location map, and a survey response form. The written information and survey response form are included at the end of this report as Exhibit E. The PPN was distributed by the USCG on September 28, 2009, as PPN 5-1163. The public had until October 28, 2009, to respond to the PPN.

The mailing list for the PPN (approximately 3,000 unique entities) included names and addresses relative to the following categories (sources of names/addresses: Currituck County Tax Department; NC Wildlife Resources Commission; NC Division of Marine Fisheries; and Currituck County website):

- Property owners with waterfront abutting property within a mile of the bridge crossing on the east and west sides of Currituck Sound.
- Marina operators along Currituck Sound or Albemarle Sound.
- Commercial fishing vessel owners that have been known to fish in Currituck Sound.
- Licensed vessel owners in either Currituck County or Dare County.

After the project was delayed for some years, NCTA reinitiated coordination efforts with the USCG. A formal Bridge Project Initiation Request was submitted by NCTA to USCG on August 23, 2017. Because of the delay in the project, USCG decided to prepare a second PPN for public distribution. This PPN also included written information about the project, a location map, and a survey response form. The written information, survey response form, and map are included at the back of this report as Exhibit F. The PPN was distributed by the USCG on February 21, 2020, as D05PPN-04-2020 in the Fifth Coast Guard District, Local Notice to Mariners. The public had until March 24, 2020, to respond to the PPN.

Additionally, the PPN was directly mailed to just over 20,000 addresses in the project area. The mailing list included the following individuals and groups:

- All persons with a commercial boat registration in Currituck and Dare Counties.
- All persons with private boat registration in Currituck and Dare Counties.
- All persons with a fishing or hunting license in Currituck and Dare Counties.
- All adjacent property owners along both sides of Currituck Sound within at least one mile in each direction of the proposed crossing.
- Marine-related facilities in Currituck Sound (indicated by *) and other waterway environs, including:
    - Coinjock Marina; 321 Waterlily Road; Coinjock, NC 27923 *
    - Midway Marina; 157 Coinjock Development Road; Coinjock, NC 27923 *
    - Whalehead Club; 1100 Club Road; Corolla, NC 27927 *
    - Station Bay Marina; 1566 Duck Road; Kitty Hawk, NC 27849 *
    - Island Marine; P O Box 213; Knotts Island, NC 27950 *
    - Pearls Bay Villa Marina; 112 Bay Villa Lane; Knotts Island, NC 27950 *
    - Tulls Bay Marina; 1407 Tulls Creek Road; Moyock, NC 27958 *
    - Lambs Marina; 152 US Highway 158W; Camden, NC 27921
    - Cypress Cove Marina; 175 Ramp Road; Columbia, NC 27925
    - D B City Marina; 340 Camden Causeway; Elizabeth City, NC 27909
    - Frog Island Marina; 200 Frog Island Road; Elizabeth City, NC 27909
    - Pelican Marina; 43 Camden Causeway; Elizabeth City, NC 27909
    - Albemarle Plantation Marina; 421 Albemarle Blvd; Hertford, NC 27944
    - Bills Marine; 1648 Colington Road; Kill Devil Hills, NC 27948
    - Dock of the Bay Marina; 4200 Bob Perry Road; Kitty Hawk, NC 27949
    - Outer Banks Fishing Club; 30 Fairway Drive; Kitty Hawk, NC 27949
    - Pirates Cove Yacht Club; 2000 Sailfish Drive; Manteo, NC 27954
    - Shallowbag Bay Marina; 1100 North Bay Club Drive; Manteo, NC 27954
    - Waterfront Marina; 207 Queen Elizabeth Avenue #14; Manteo, NC 27954
    - Great Lakes Dredge & Dock; 100 East Dunn Street; Nags Head, NC 27959
    - Bluewater Yacht Club; 920 Harbor Road; Wanchese, NC 27981
    - Broad Creek Fishing Center; 798 Harbor Road; Wanchese, NC 27981
    - Spencer Yachts; 31 Beverly Drive; Wanchese, NC 27981
    - Thicket Lump Marina; 219 Ticket Lump Drive; Wanchese, NC 27981
    - Wanchese Marina; 4457 Mill Landing Road; Wanchese, NC 27981
    - Atlantic Yacht Basin; 2615 Basin Road; Chesapeake, VA 23322

  - Centerville Waterway Marina; 100 Centerville Turnpike North; Chesapeake, VA 23320
  - Chesapeake Marina; 5532 Bainbridge Point; Chesapeake, VA 23320
  - Top Rack Marina; 5532 Bainbridge Point; Chesapeake, VA 23320
  - Wright Marine; 143 Tilden Avenue; Chesapeake, VA 23320
  - West Neck Marina; 3985 West Neck Road; Virginia Beach, VA 23456
- Local newspapers serving Currituck County.
  - The Virginian-Pilot; 150 W Brambleton Avenue; Norfolk, VA 23510
  - The Daily Advance; 1016 W Ehringhaus Street; Elizabeth City, NC 27909
- Currituck County Public libraries (3 locations).
  - 4261 Caratoke Highway; Barco, NC 27917
  - 1123 Ocean Trail; Corolla, NC 27927
  - 126 Campus Drive; Moyock, NC 27958

PRELIMINARY PUBLIC NOTIFICATION (PPN) RESULTS

A total of 25 responses were received from the 2009 PPN. These 25 responses represent a less than 1% response rate. This was extremely low but may be indicative of the limited use of Currituck Sound in the vicinity of the proposed bridge crossing. A summary table of the PPN responses is included at the end of this report as Exhibit G. The responses cover 29 vessels.

For the 2020 PPN, a total of 147 responses were received. This also represents a less than 1% response rate. However, the 2020 mailing list did include persons with hunting and fishing licenses who may not be boat owners. Of the 147 responses, 25 persons provided no boating information. The remaining 122 responses contained boat information for 128 vessels. Recreational use was cited for 108 boats, commercial use for 4 boats, and a combination of recreational and commercial uses for 13 boats. Military use by the USCG was cited for 3 vessels. A summary table of the PPN responses is included at the back of this report as Exhibit H.

Several respondents to the 2020 PPN used the survey as a mechanism to either support or oppose the proposed bridge crossing. Of the 147 responses, 72 contained such an indication about the Mid-Currituck Bridge project. There were 53 respondents expressing support for the bridge project and 19 respondents indicating their opposition to the project.

Vertical Clearance

Of the 147 PPN responses in 2020, 18 of those responses indicated a desired vertical clearance for the Mid-Currituck Bridge. Two respondents indicated that the 15-foot vertical clearance indicated in the PPN should be adequate. Seven persons responded that vertical clearance should be greater than 15 feet but did not provide a specific height for the vertical clearance. One person called for a 20-foot vertical clearance. Likewise, a single respondent called for a 24-foot clearance and another for a 30-foot clearance. Four persons expressed a desire for the vertical clearance to be 35 feet which would match the Wright Memorial Bridge. One person requested a 40-foot vertical clearance to match the water depth. A single person asked that the bridge match the Coinjock Bridge (US 158 bridge over the AIWW) at 65 feet.

In the 2009 PPN responses, vessel heights ranged from a low of 4 feet to a high of 45 feet. All but six vessels were less than 15 feet in height. Those six vessels greater than 15 feet had vertical heights of 45, 32, 26.5, 26, 23.7, and 23 feet. Three of these vessels were commercial boats with drafts of 3.5 and 6 feet. The 6-foot draft was related to the vessel with the 45-foot height. The other two commercial vessels had 3.5-foot drafts (23- and 23.7-foot heights). The three recreational vessels included a sailboat, a catamaran, and a dory. The draft for the 26-foot-high sailboat was 4.5 feet. The draft for the 26.5-foot-high catamaran was less than a foot. The draft for the 32-foot-high dory class was 2 feet.

The 45-foot-high commercial trawler was moored in Wanchese, NC roughly 18 miles south of the southern limit of Currituck Sound. The respondent requested a 65-foot vertical clearance for the bridge like other bridges over inland waterways. From this comment, it appeared that the respondent was unclear on the location of the bridge as it would not cross the AIWW. This vessel had a reported draft of 6 feet. The respondent further requested consideration for shallow draft boats with masts such as catamarans.

The 32-foot-high recreational Crown Point Dory was moored near Manteo, NC. The respondent requested that the Mid-Currituck Bridge have the same vertical clearance as the Wright Memorial Bridge. He further indicated that he transited the narrows to access northern Currituck Sound. His vessel was a flat bottom boat with a draft of 2 feet.

The 26.5-foot-high recreational catamaran was moored in Currituck Sound at South Harbor View in Corolla, NC. This mooring location is immediately south (roughly 0.5 miles) of the east end of the proposed bridge crossing.

The 26-foot-high recreational sailboat was moored in Currituck Sound at Sea Ridge Drive in Corolla, NC. This mooring location, like the one above, is located south of the planned bridge (about 0.9 miles). This vessel had a reported 4.5-foot draft.

The 23.7-foot-high commercial vessel was moored near Poplar Branch at Duck, NC. This is in the southern portion of Currituck Sound south of the narrows and islands. Given the 3.5-foot draft on this vessel, it was unlikely that it would be able to access the northern portion of Currituck Sound through the narrows. Therefore, access to the northern portion of Currituck Sound and the bridge would be via the AIWW, an approximate 55-mile journey.

The 23-foot-high Sport Fisherman Charter Boat was moored at Pirates Cove Marina near Manteo, NC approximately 10 miles south of Currituck Sound. The respondent noted that due to the shallow water in the north end of Currituck Sound, the bridge would not impact his operations because the water depth is insufficient for his operation.

All the vessels represented by the responses from the 2009 PPN would appear to be able to generally operate in the vicinity of the bridge crossing of Currituck Sound. The 45-foot-high commercial vessel would seem to have operational challenges with the shallow areas of Currituck Sound given its 6-foot draft. The 26-foot-high recreational sailboat would also seem to have some difficulties with the shallow waters of Currituck Sound since this vessel has a draft of 4.5 feet. Retracting the keel would be required in areas of shallow water. There are a couple of additional commercial vessels that have a draft of 4 feet, and they could also find the water depths in Currituck Sound challenging.

In the 2020 PPN responses, vessel heights ranged from a low of 1.5 feet to a high of 47 feet. Vessel height was provided for 125 of the 128 boats represented in the survey responses. The average height of these 124 vessels is 10.6 feet with most in the 3-foot to 19-foot range in height. The 90th percentile height for the vessels reporting was 20 feet. The 95th percentile height was at 28.4 feet.

There are 15 responses with vessel heights of 20 feet or greater. The tallest boat, at 47 feet, indicated being in the area of the bridge once every two years. The next tallest vessel, at 40 feet, did not provide a frequency of transiting the bridge area and provided a very limited response to the survey. Two boats indicated never being at the bridge location (20-foot and 29-foot heights). There is a 28-foot boat that reported transiting the bridge area once a year and a 23-foot vessel that indicated being near the bridge crossing twice a year. The remaining 8 vessels ranged in height from 20 feet to 35 feet (20, 20, 24, 25,28, 28.5, 31, 33, and 35 feet) and reported transiting the bridge location more than twice a year.

The 20-foot-high Parker boat is moored at Maple, NC, in Coinjock Bay about 7 miles on the north side of the bridge crossing location. This boat owner reported being in the vicinity of the bridge about three times a week for both recreational and commercial purposes. The draft on this boat is reported as 1.5 feet, so easily capable of maneuvering in much of Currituck Sound.

The 20-foot-high Spud Barge owner reported regular use of the bridge crossing area for commercial purposes. No specific mooring location was provided; however, the owner operates out of Powells Point, NC, which is about 13 miles south of the bridge and south of the Big Narrows but is north of the Wright Memorial Bridge. The barges are reported to have a draft of 3 feet.

The 24-foot-high Flying Scot sailboat is moored in Southern Shores some 15 miles south of the bridge location in the southern portion of Currituck Sound, south of the Big Narrows and islands. This boat is reported to have a draft of 3.5 feet and to transit the bridge area from 3 to 8 times a year. The owner indicated that this boat is used for recreational and commercial purposes (sailing classes in Currituck Sound).

The 25-foot-high Hunter sailboat is moored in Corolla, NC, about 0.6 miles south of the east end of the bridge. The owner reported using the bridge location at various times throughout the spring, summer, and fall of the year for recreational purposes. The draft on this boat was reported to be 4.3 feet.

The 28-foot-high commercial and recreational fish/crab boat is moored at Knotts Island in northern Currituck Sound, roughly 11 to 15 miles from the bridge location. The owner reported the draft of the boat at 2.5 feet and that it transits the bridge location “10 month yearly” which is unclear as to frequency.

The 28.5-foot-high Hobie catamaran recreational sailboat is moored at Bells Island about 6 to 8 miles north of the bridge crossing location. The owner reported transiting the area of the bridge location during the summer recreationally. The boat has a shallow draft of less than 1 foot.

The 31-foot-high Nacra 580 catamaran sailboat indicated being in the vicinity of the bridge from 3 to 8 times a year for recreational and commercial purposes. The sailboat is moored at Southern Shores in the southern portion of Currituck Sound some 15 miles from the bridge location. The

owner indicated this boat has a draft of 2.5 feet and it is used for sailing classes in Currituck Sound.

The 33-foot-high sailboat is stored on a trailer in Moyock, NC about 11 miles from the bridge site. The owner reports being in the area of the planned bridge from 6 to 20 times a year for recreational activity. The reported draft on this sailboat is 6 feet with the keel extended but can be reduced to 1.25 feet by raising the keel.

The owner of the 35-foot-high sailboat reported transiting the bridge area about six times a year from the mooring location at Colington Island, NC, which is about five miles south of the Wright Memorial Bridge in Albemarle Sound. The reported draft is 6 feet but has a swing keel that can reduce the draft to 1.5 feet. At 35 feet in height, this sailboat might have issues navigating under the Wright Memorial Bridge. However, given its mooring location, it is possible that it could use the AIWW to access northern Currituck Sound and the bridge location.

Horizontal Clearance

In the responses to the 2009 PPN, vessel beam widths ranged from 3.5 feet to 15 feet. The three tall commercial vessels had beam widths of 12 to 15 feet. All other vessels in the survey had beam widths less than 10 feet.

Similar results were reported with the 2020 PPN with vessel beam widths ranging from 3 feet to 42 feet. The average beam width was 8 feet with most ranging from 4 to 12 feet. Ninety percent of the vessels in this survey had beam widths of 10 feet or less and 95 percent had beam widths of 12.4 feet or less. The six boats with greater than a 12.4-foot beam included widths of 14 feet (a pontoon boat, a Sabre yacht, and a sport fisher), 15 feet (B&D Boatworks motor yacht), 16.8 feet (USCG vessel), and 25 to 42 feet (spud barges). Of these, three reported never being in the area of the bridge crossing. The other three reported more regular transiting of the bridge location (14-foot pontoon boat, 16.8-foot USCG vessel, and 25- to 42-foot barges).

According to the USCG Bridge Administration Manual, the minimum horizontal clearance is typically set as a multiple of the beam width depending on currents, navigation aids, vessel traffic, and type of channel. For Currituck Sound, there is no defined navigational channel, and it is shallow water. Therefore, a larger multiplier will be required. Currents are typically dependent on wind speed and direction; however, normally currents in Currituck Sound are relatively low. Therefore, a lower multiplier will be required based on this factor. Vessel traffic is reported to be limited at this location. Therefore, one-way vessel operations would seem appropriate and would result in a lower beam multiplier. Based on these conditions, it would seem appropriate to use a 3.5 multiplier of beam width to determine the minimum horizontal clearance. Using the 25-foot beam width of the smaller spud barge in the 2020 PPN study would result in an 87.5-foot minimum horizontal clearance. Arguably, this minimum could be lower since most vessels from the two PPN surveys that navigate this area would have beam widths of 10 feet or less. At a 10-foot beam width, the minimum horizontal clearance would be 35 feet for one-way traffic. If two-way traffic is considered, the multiplier would increase to 5 times the beam width. However, the boating activity in Currituck Sound is light, and as such this should support one-way traffic considerations instead of two-way traffic.

BOATING INDUSTRY COORDINATION

A coordination meeting was held in 2009 with the Boating Industry Services Section of the North Carolina Small Business and Technology Development Center of North Carolina State University. This organization works to promote the boating industry in North Carolina and understands boating in North Carolina coastal waters such as Currituck Sound. A summary of the meeting discussion is attached at the back of the report as Exhibit I. Mr. Mike Bradley leads this section and is intimately familiar with the boating industry in North Carolina. The information from the 2009 PPN was reviewed with Mr. Bradley and the following summarizes the coordination meeting:

- Mr. Bradley encouraged the use of the Draft Environmental Impact Study (DEIS) Public Hearing process for further local input on the vertical and horizontal clearance needs of the boating community in Currituck Sound. He felt that the extent of previous efforts through the US Coast Guard's Preliminary Public Notice (PPN) process should be summarized so that the public would know what had already been happening.
- Mr. Bradley examined the responses to the PPN. The boats with vertical heights over 15 feet were reviewed. Because of the type of vessel or the location of the vessel, he felt that these boats could handle a bridge with less clearance than their vessel heights. The vessels either had a mast that lowered or could be reduced in sections to traverse under the bridge.
- Mr. Bradley noted that many of the boats in Currituck Sound may be "T" tops with a center console. As such the "T" top could be 15 feet above the water. Extending above the "T" top is the radio antenna. A bridge vertical clearance of 18 feet above water could likely accommodate these boats without the antenna having to be removed. He encouraged consideration of a navigational span of at least 18 feet vertical clearance for a portion of the bridge. The remainder of the bridge could have a lower 15-foot vertical clearance.
- Mr. Bradley agreed that the Big Narrows area in Currituck Sound south of the proposed bridge location is a restriction that will likely reduce the boating traffic through that area because of erratic and shallow water and reduced winds because of nearby islands. He saw the 35 recreational private docks along the west side of the Sound north of the Big Narrows and south of the proposed bridge crossing as an area for more detailed study through the Public Hearing process, involving property owners in this area. The other issue area is along the east side of Currituck Sound south of the bridge and the private recreational docks in this area. It is unclear if boats are using these docks and the size of these boats. The locations of these docks are north of the Big Narrows and south of the bridge location. More information is needed to determine the possible impacts of the project on these private docks and owners.
- Based on the available data, Mr. Bradley confirmed that a general 15-foot-high vertical clearance for the majority of the bridge with an 18-foot-high vertical clearance for the navigational span would be sufficient for the navigational needs of the area.

As suggested by Mr. Bradley, the opportunity for boaters to discuss the vertical and horizontal clearance under the bridge over Currituck Sound was afforded at each of the public meetings and hearings held for the Mid-Currituck Bridge DEIS in 2010. There were no persons who engaged in discussions about the bridge clearances.

In the 2020 PPN survey, the mailing was sent to property owners south and north of the proposed bridge location. This included those persons with private docks in Currituck Sound near the bridge to ascertain their thoughts on the bridge clearances.

ADDITIONAL DATA COLLECTION

The USCG developed a list of questions to conduct a survey of marinas in the Currituck Sound area in July and August of 2020. The results of this targeted survey were intended to add to the body of knowledge about boats that regularly use Currituck Sound in the area of the planned bridge crossing and their navigational needs. Unfortunately, none of the marina surveys were returned and therefore, no additional information was garnered through this additional effort.

PLANNED NEXT STEPS

CONTINUED COORDINATION

NCTA will continue to coordinate with the USCG throughout the project development and permitting process. While it appears that a 15-foot vertical clearance under the bridge should be adequate for most vessels, some vessels would require a higher clearance height. Based on the 2009 and the 2020 PPN responses, nearly all vessels that regularly transit the area of the bridge crossing could be accommodated by a 35-foot vertical clearance.

PREVIOUS NAVIGATION IMPACT REPORT

In December 2020, NCTA prepared and published a Navigation Impact Report for the project. This current document is an update of that prior report. The previous Navigation Impact Report was provided to the USCG, and as a result, a Preliminary Navigational Clearance Determination was issued by the USCG in February 2021. Given the extent of the prior Preliminary Public Notifications on this project, NCTA believes that no additional data collection is appropriate for this project at this time. Additionally, there have been no material changes in the existing project area that would alter the results of prior investigations. Access to Currituck Sound remains as previously indicated and existing conditions relative to boating in Currituck Sound remain.

PERMIT APPLICATION

NCTA is aware that the actual navigational clearances for the Mid-Currituck Bridge over Currituck Sound cannot be definitively established until a USCG bridge permit application is filed and the USCG permit process is completed. This process includes a public notice period for the receipt of comments and input on the project relative to reasonable navigational clearance needs.

Continued coordination with the USCG should provide NCTA with a relatively clear understanding of the navigational clearance requirements that will be required on this project. As a result of the PPN surveys and this updated Navigation Impact Report, NCTA will request the USCG to issue a new Preliminary Navigational Clearance Determination. This will help guide the project development process toward the USCG permit application.

CONCLUSIONS AND RECOMMENDATIONS

Based on the information available, NCTA and NCDOT have preliminarily determined that the minimum clearance requirements for the Mid-Currituck Bridge should be 15 feet vertical above Mean High Water and 40 feet horizontal. The 15-foot vertical clearance would be the minimum for most all spans across Currituck Sound, and the actual span widths would likely provide additional horizontal clearance above the 40-foot minimum.

A navigational span is anticipated with a maximum vertical clearance of 21 feet (20-foot vessel height plus 1-foot additional clearance as recommended in "Guide Specifications for Bridges Vulnerable to Coastal Storms" published by AASHTO in 2008) above Mean High Water and a minimum 40-foot horizontal clearance. The additional one foot of clearance provides a measure of safety for wave action during higher water conditions. The location of the navigational span would be in an area of deeper water and general alignment with a north-south corridor through Currituck Sound and the Big Narrows. There are no known plans of the US Army Corps of Engineers to complete a federal navigation project through Currituck Sound.

These conclusions are being recommended based on the following factors:

- The location of the proposed bridge across Currituck Sound is just north of an area of extremely shallow water that has numerous islands and is not conducive to most vessel traffic. Longitudinally traversing Currituck Sound is limited by boat because of the Big Narrows and island area. Therefore, meeting the same clearance requirements of the Wright Memorial Bridge would not seem to be a reasonable requirement for this proposed crossing.
- The AIWW is available for access to and from northern Currituck Sound. The southern portions of Currituck Sound are accessible from Albemarle Sound under the Wright Memorial Bridge. It is unlikely that a dredged channel through Currituck Sound would ever be proposed to increase vessel traffic through Currituck Sound in the area of the Big Narrows.
- The vast majority of respondents to the two PPN surveys could be accommodated by these recommended bridge clearances. There were very few respondents that could reasonably traverse Currituck Sound due to its water depths with vessel heights greater than the recommended 15-foot minimum clearance and 21-foot maximum clearance.
- The 21-foot vertical clearance for the navigational span would provide adequate clearance for most vessel types (90% of the survey respondents) in Currituck Sound in the vicinity of this crossing.

- The limited number of respondents to the PPN indicates that the users of this area of Currituck Sound are few. An extensive survey was distributed twice, and responses were received from a low percentage of those included in the survey.
- The shallow waters and erratic depths of Currituck Sound limit the types of vessels that can access the area. Vessels with a draft of around 4 feet or more would find navigating in Currituck Sound in the vicinity of the bridge crossing to be difficult because of the shallow and erratic water depths.
- The potential number of vessels affected by a 15-foot minimum and a 21-foot maximum vertical clearance would be limited, and it would be unreasonable to consider a greater vertical clearance and associated increased bridge cost for these few vessels.
- The presence of private docks and boat launches around the bridge location are indicative of access only and not vessel type and size. The shallow waters near the docks would tend to limit vessel size to some extent.
- The impacts to vessel owners potentially impacted by the 15-foot minimum vertical clearance and the 21-foot maximum vertical clearance could be mitigated by boat owners. This mitigation could involve mooring their vessel in a location unaffected by the bridge or reducing the height of the vessel for transiting the bridge area.
- The 15-foot minimum vertical clearance was included in the PPN as the anticipated clearance for the bridge, and the appropriateness of this clearance height was largely confirmed based on the responses to the PPN.
- Environmentally sensitive areas containing SAV in shallow water naturally limit boating activity in these areas near the east end of the bridge crossing.
- The 40-foot minimum horizontal clearance should be sufficient for one-way traffic for most of the vessels using Currituck Sound. Longer spans are likely for much of the bridge length. While accommodation for two-way traffic is not anticipated to be needed, these longer spans could likely provide sufficient horizontal distance for two-way traffic for these vessels, if needed.

EXHIBITS

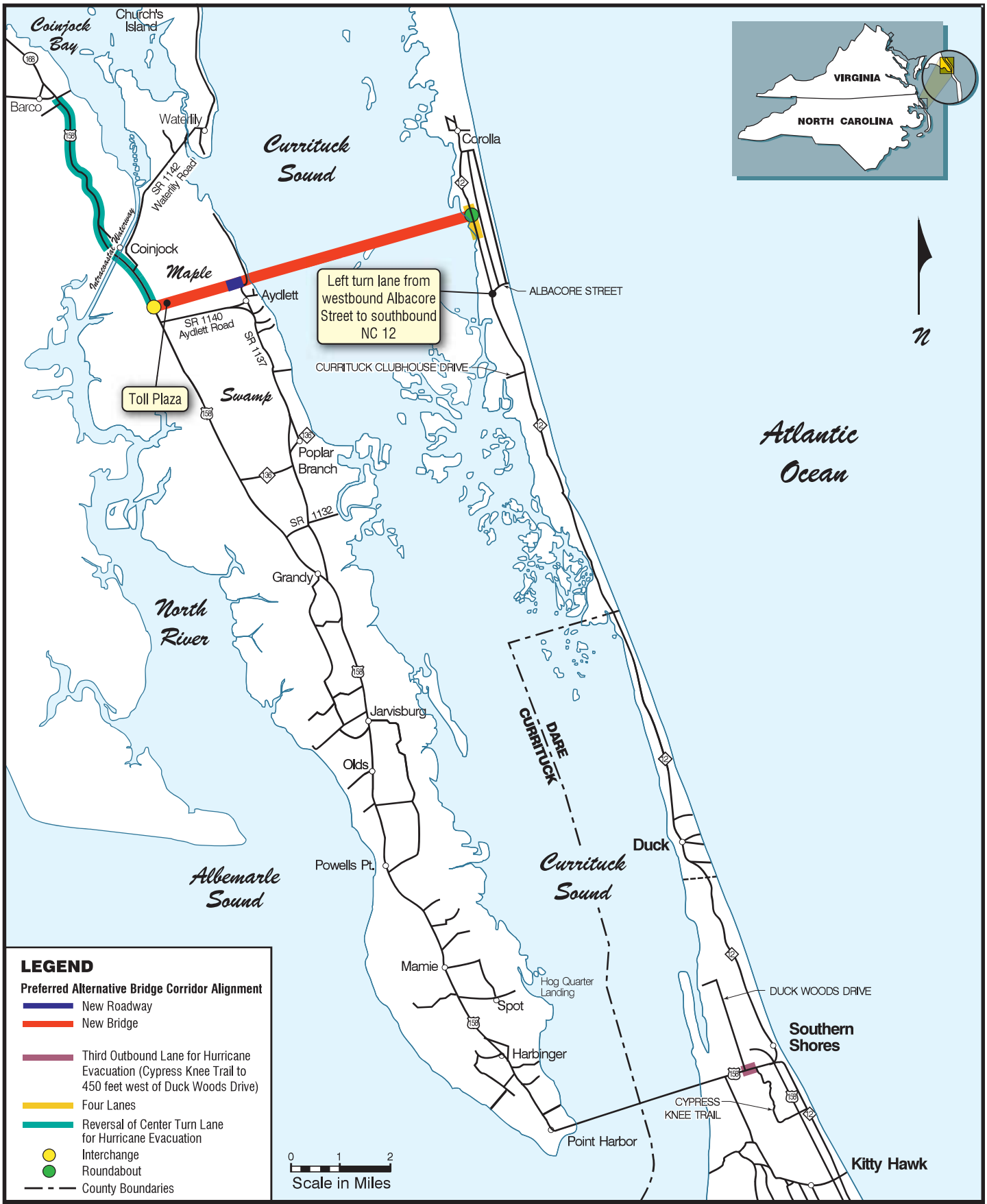


EXHIBIT A

Selected Alternative

NOAA encourages users to submit inquiries, discrepancies or comments about this chart at http://www.nauticalcharts.noaa.gov/staff/contact.htm.

Formerly C&GS 1229, 1st Ed., June 1913 D-1956-903 KAPP 527

SOUNDINGS IN FEET

12204

CAUTION
This chart has been corrected from the Notice to Mariners (NM) published weekly by the National Geospatial-Intelligence Agency and the Local Notice to Mariners (LNM) issued periodically by each U.S. Coast Guard district to the dates shown in the lower left hand corner. Chart updates corrected from Notice to Mariners published after the dates shown in the lower left hand corner are available at nauticalcharts.noaa.gov.

SOUNDINGS IN FEET

12204

Published at Washington, D.C.
U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SERVICE
COAST SURVEY

Currituck Beach Light to Wimble Shoals
SOUNDINGS IN FEET - SCALE 1:80,000

12204

Use NOAA electronic navigational charts for the most up-to-date information.

39th Ed., Jun. 2018. Last Correction: 10/8/2019. Cleared through:
LNM: 2020 (5/19/2020), NM: 2220 (5/30/2020)

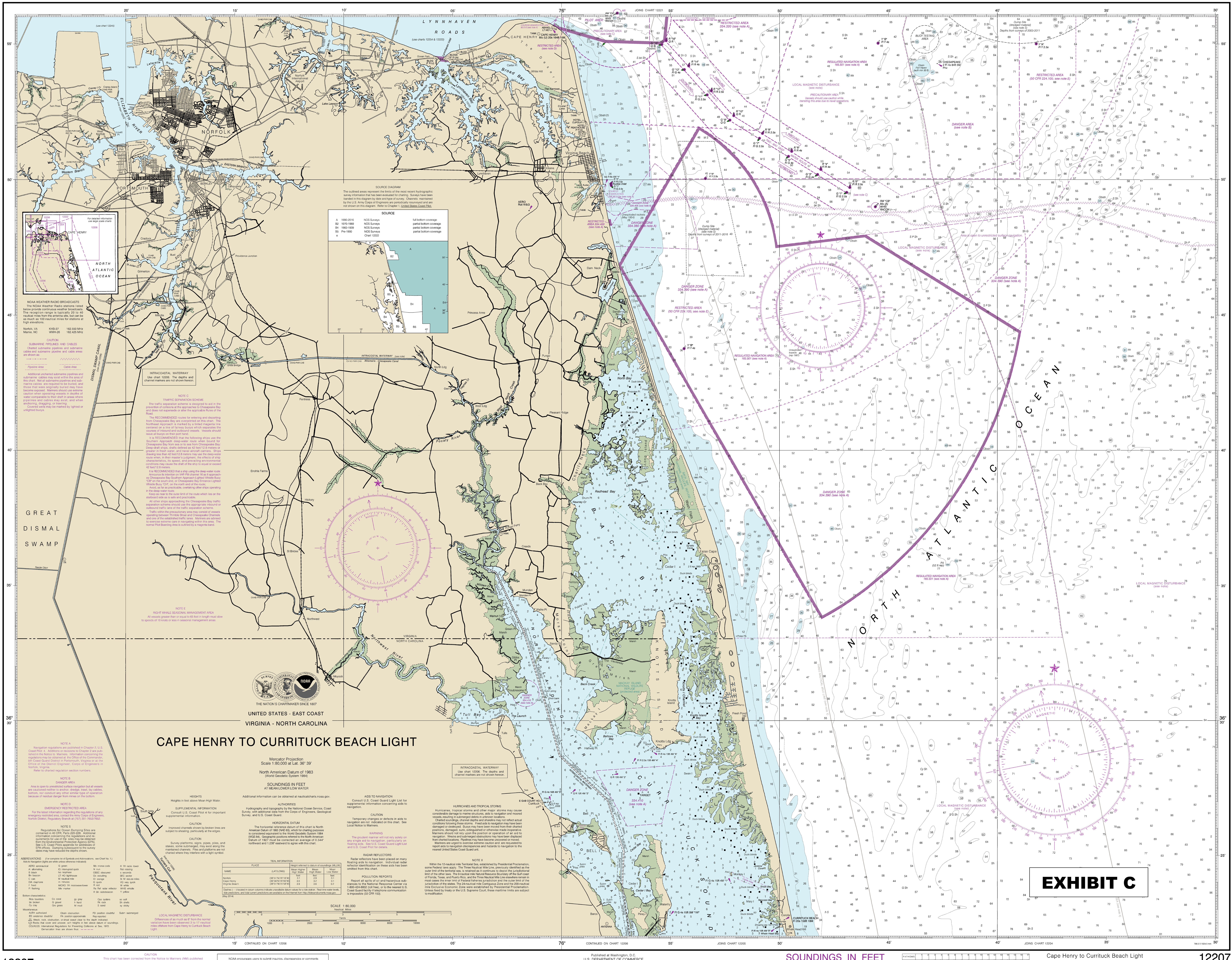
To ensure that this chart was printed at the proper scale, the line below should measure six inches (152 millimeters).
If the line does not measure six inches (152 millimeters), this copy is not certified safe for navigation.

(POD) providers fulfill a vessel's requirement to carry a navigational chart "published by the National Ocean Service" in accordance with federal regulations, including but not limited to 33 C.F.R. 164.33(a), 33 C.F.R. 164.72(b), and 46 C.F.R. 28.225(a). POD charts meet stringent print standards and can be recognized by an official certification of authenticity printed on the chart. A list of POD providers can be found at: nauticalcharts.noaa.gov/pod

SOUNDINGS IN FEET

12207

Formerly C&GS 1227, 1st Ed., Feb. 1913 V-1913-130 KAPP 548



NOAA WEATHER RADIO BROADCASTS

The NOAA Weather Radio stations listed below provide continuous weather broadcasts. The reception range is typically 20 to 40 nautical miles from the antenna site, but can be as much as 100 nautical miles for stations at high elevations.

Norfolk, VA	KHB-37	162.550 MHz
Mamie, NC	WWH-26	162.425 MHz

CAUTION
SUBMARINE PIPELINES AND CABLES

Charted submarine pipelines and submarine cables and submarine pipeline and cable areas are shown as:

Pipeline Area — Cable Area

Additional uncharted submarine pipelines and submarine cables may exist within the area of this chart. Not all submarine pipelines and submarine cables are required to be buried, and those that were originally buried may have become exposed. Mariners should use extreme caution when operating vessels in depths of water comparable to their draft in areas where pipelines and cables may exist, and when anchoring, dragging, or trawling.

Covered wells may be marked by lighted or unlighted buoys.

SOURCE DIAGRAM

The outlined areas represent the limits of the most recent hydrographic survey information that has been evaluated for charting. Surveys have been banded in this diagram by date and type of survey. Channels maintained by the U.S. Army Corps of Engineers are periodically resurveyed and are not shown on this diagram. Refer to Chapter 1, United States Coast Pilot.

SOURCE

A	1990-2016	NOS Surveys	full bottom coverage
B2	1970-1989	NOS Surveys	partial bottom coverage
B4	1900-1939	NOS Surveys	partial bottom coverage
B5	Pre-1900	NOS Surveys	partial bottom coverage
e		Chart 12222	

INTRACOASTAL WATERWAY
Use chart 12206. The depths and channel markers are not shown hereon.

NOTE C
TRAFFIC SEPARATION SCHEME

The traffic separation scheme is designed to aid in the prevention of collisions at the approaches to Chesapeake Bay and does not supersede or alter the applicable Rules of the Road.

The RECOMMENDED routes for entering and departing from Chesapeake Bay are overprinted on this chart. The Northeast Approach is marked by a tinted magenta line centered on a line of fairway buoys which separates the courses of inbound and outbound vessels. Vessels should leave all buoys on their port hand.

It is RECOMMENDED that the following ships use the Southern Approach deep-water route when bound for Chesapeake Bay from sea or to sea from Chesapeake Bay: Deep-draft ships, drafts defined as 42 feet/12.8 meters or greater in fresh water, and naval aircraft carriers. Ships drawing less than 42 feet/12.8 meters may use the deep-water route when, in their master's judgment, the effects of ship characteristics, its speed, and prevailing environmental conditions may cause the draft of the ship to equal or exceed 42 feet/12.8 meters.

It is RECOMMENDED that a ship using the deep-water route: Announce its intention on VHF-FM channel 16 as it approaches Chesapeake Bay Southern Approach Lighted Whistle Buoy "CB" on the south end, or Chesapeake Bay Entrance Lighted Whistle Buoy "CH", on the north end of the route;

Avoid, as far as practicable, overtaking other ships operating in the deep-water route;

Keep as near to the outer limit of the route which lies on the starboard side as is safe and practicable.

All other ships approaching the Chesapeake Bay traffic separation scheme should use the appropriate inbound or outbound traffic lane of the traffic separation scheme.

Traffic within the precautionary area may consist of vessels operating between Thimble Shoal and Chesapeake Channels and one of the established traffic lanes. Mariners are advised to exercise extreme care in navigating within this area. The normal Pilot Boarding Area is outlined by a magenta band.

NOTE E
RIGHT WHALE SEASONAL MANAGEMENT AREA

All vessels greater than or equal to 65 feet in length must slow to speeds of 10 knots or less in seasonal management areas.

THE NATION'S CHARTMAKER SINCE 1807

UNITED STATES - EAST COAST
VIRGINIA - NORTH CAROLINA

CAPE HENRY TO CURRITUCK BEACH LIGHT

Mercator Projection
Scale 1:80,000 at Lat. 36° 39'

North American Datum of 1983
(World Geodetic System 1984)

SOUNDINGS IN FEET
AT MEAN LOWER LOW WATER

NOTE A

Navigation regulations are published in Chapter 2, U.S. Coast Pilot 4. Additions or revisions to Chapter 2 are published in the Notice to Mariners. Information concerning the regulations may be obtained at the Office of the Commander, 5th Coast Guard District in Portsmouth, Virginia or at the Office of the District Engineer, Corps of Engineers in Norfolk, Virginia.

Refer to charted regulation section numbers.

NOTE B
DANGER AREA

Area is open to unrestricted surface navigation but all vessels are cautioned neither to anchor, dredge, trawl, lay cables, bottom, nor conduct any other similar type of operation because of residual danger from mines on the bottom.

NOTE D
EMERGENCY RESTRICTED AREA

For the latest information regarding the regulations of any emergency restricted area, contact the Army Corps of Engineers, Norfolk District, Regulatory Branch at (757) 201-7653/7652.

NOTE S

Regulations for Ocean Dumping Sites are contained in 40 CFR, Parts 220-229. Additional information concerning the regulations and requirements for use of the sites may be obtained from the Environmental Protection Agency (EPA). See U.S. Coast Pilots appendix for addresses of EPA offices. Dumping subsequent to the survey dates may have reduced the depths shown.

ABBREVIATIONS (For complete list of Symbols and Abbreviations, see Chart No. 1.)
Aids to Navigation (lights are white unless otherwise indicated):

AERO aeronautical; Al alternating; B black; Bn beacon; C can; DIA diaphone; F fixed; Fl flashing; G green; IQ interrupted quick; Iso isophase; LT HO lighthouse; M nautical mile; m minutes; MICRO TR microwave tower; Mkr marker; Mo morse code; N nun; OBSC obscured; Oc occulting; Or orange; Q quick; R red; Ra Ref radar reflector; R Bn radiobeacon; R TR radio tower; Rot rotating; s seconds; SEC sector; St M statute miles; VQ very quick; W white; WHIS whistle; Y yellow

Bottom characteristics:
Blds boulders; bk broken; Cy clay; Co coral; G gravel; Grs grass; gy gray; h hard; M mud; Oys oysters; Rk rock; S sand; so soft; Sh shells; sy sticky

Miscellaneous:
AUTH authorized; ED existence doubtful; Obstn obstruction; PA position approximate; PD position doubtful; Rep reported; Subm submerged

21 Wreck, rock, obstruction, or shoal swept clear to the depth indicated.
(2) Rocks that cover and uncover, with heights in feet above datum of soundings.
COLREGS: International Regulations for Preventing Collisions at Sea, 1972.
Demarcation lines are shown thus: ————

LOCAL MAGNETIC DISTURBANCE

Differences of as much as 6° from the normal variation have been observed 3 to 17 nautical miles offshore from Cape Henry to Currituck Beach Light.

HEIGHTS
Heights in feet above Mean High Water.

SUPPLEMENTAL INFORMATION
Consult U.S. Coast Pilot 4 for important supplemental information.

CAUTION
Improved channels shown by broken lines are subject to shoaling, particularly at the edges.

CAUTION
Survey platforms, signs, pipes, piles, and stakes, some submerged, may exist along the maintained channels. Piles and platforms are not charted where they interfere with a light symbol.

Additional information can be obtained at nauticalcharts.noaa.gov.

AUTHORITIES
Hydrography and topography by the National Ocean Service, Coast Survey, with additional data from the Corps of Engineers, Geological Survey, and U.S. Coast Guard.

HORIZONTAL DATUM
The horizontal reference datum of this chart is North American Datum of 1983 (NAD 83), which for charting purposes is considered equivalent to the World Geodetic System 1984 (WGS 84). Geographic positions referred to the North American Datum of 1927 must be corrected an average of 0.544" northward and 1.238" eastward to agree with this chart.

TIDAL INFORMATION

PLACE		Height referred to datum of soundings (MLLW)		
NAME	(LAT/LONG)	Mean Higher High Water	Mean High Water	Mean Low Water
		feet	feet	feet
Norfolk	(36°51'N/76°18'W)	3.1	2.9	0.1
Cape Henry	(36°56'N/76°00'W)	3.5	3.2	0.1
Virginia Beach	(36°51'N/75°58'W)	3.9	3.6	0.2

Dashes (- - -) located in datum columns indicate unavailable datum values for a tide station. Real-time water levels, tide predictions, and tidal current predictions are available on the Internet from http://tidesandcurrents.noaa.gov.

(May 2014)

AIDS TO NAVIGATION
Consult U.S. Coast Guard Light List for supplemental information concerning aids to navigation.

CAUTION
Temporary changes or defects in aids to navigation are not indicated on this chart. See Local Notice to Mariners.

WARNING
The prudent mariner will not rely solely on any single aid to navigation, particularly on floating aids. See U.S. Coast Guard Light List and U.S. Coast Pilot for details.

RADAR REFLECTORS
Radar reflectors have been placed on many floating aids to navigation. Individual radar reflector identification on these aids has been omitted from this chart.

POLLUTION REPORTS
Report all spills of oil and hazardous substances to the National Response Center via 1-800-424-8802 (toll free), or to the nearest U.S. Coast Guard facility if telephone communication is impossible (33 CFR 153).

HURRICANES AND TROPICAL STORMS
Hurricanes, tropical storms and other major storms may cause considerable damage to marine structures, aids to navigation and moored vessels, resulting in submerged debris in unknown locations.

Charted soundings, channel depths and shoreline may not reflect actual conditions following these storms. Fixed aids to navigation may have been damaged or destroyed. Buoys may have been moved from their charted positions, damaged, sunk, extinguished or otherwise made inoperative. Mariners should not rely upon the position or operation of an aid to navigation. Wrecks and submerged obstructions may have been displaced from charted locations. Pipelines may have become uncovered or moved.

Mariners are urged to exercise extreme caution and are requested to report aids to navigation discrepancies and hazards to navigation to the nearest United States Coast Guard unit.

NOTE X
Within the 12-nautical mile Territorial Sea, established by Presidential Proclamation, some Federal laws apply. The Three Nautical Mile Line, previously identified as the outer limit of the territorial sea, is retained as it continues to depict the jurisdictional limit of the other laws. The 9-nautical mile Natural Resource Boundary off the Gulf coast of Florida, Texas, and Puerto Rico, and the Three Nautical Mile Line elsewhere remain in most cases the inner limit of Federal fisheries jurisdiction and the outer limit of the jurisdiction of the states. The 24-nautical mile Contiguous Zone and the 200-nautical mile Exclusive Economic Zone were established by Presidential Proclamation. Unless fixed by treaty or the U.S. Supreme Court, these maritime limits are subject to modification.

SCALE 1:80,000

12207

CAUTION
This chart has been corrected from the Notice to Mariners (NM) published weekly by the National Geospatial-Intelligence Agency and the Local Notice to Mariners (LNM) issued periodically by each U.S. Coast Guard district to the dates shown in the lower left hand corner. Chart updates corrected from Notice to Mariners published after the dates shown in the lower left hand corner are available at nauticalcharts.noaa.gov.

NOAA encourages users to submit inquiries, discrepancies or comments about this chart at http://www.nauticalcharts.noaa.gov/staff/contact.htm.

Published at Washington, D.C.
U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SERVICE
COAST SURVEY

SOUNDINGS IN FEET

Cape Henry to Currituck Beach Light
SOUNDINGS IN FEET - SCALE 1:80,000

12207

Use NOAA electronic navigational charts for the most up-to-date information.

25th Ed., Aug. 2019. Last Correction: 5/22/2020. Cleared through:
LNM: 2020 (5/19/2020), NM: 2220 (5/30/2020)

To ensure that this chart was printed at the proper scale, the line below should measure six inches (152 millimeters).
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(POD) providers fulfill a vessel's requirement to carry a navigational chart "published by the National Ocean Service" in accordance with federal regulations, including but not limited to 33 C.F.R. 164.33(a), 33 C.F.R. 164.72(b), and 46 C.F.R. 28.225(a). POD charts meet stringent print standards and can be recognized by an official certification of authenticity printed on the chart. A list of POD providers can be found at: nauticalcharts.noaa.gov/pod

5/28/99

PROJECT REFERENCE NO.	SHEET NO.

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

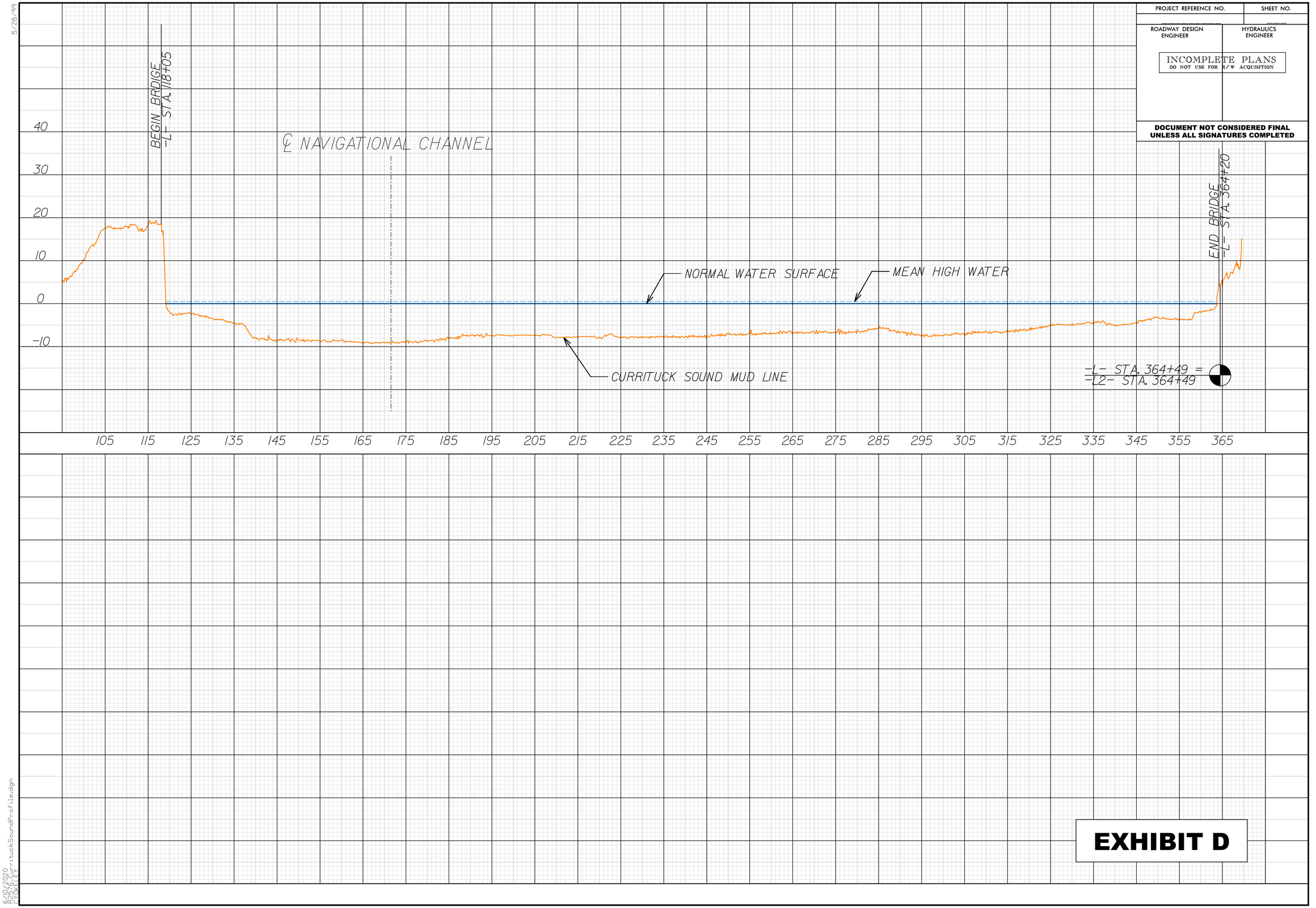

EXHIBIT D

6/10/2020
R2576_CurrituckSoundProfile.dgn
CJANKEY

U.S. Department of Homeland Security

United States Coast Guard

Commander
United States Coast Guard
Fifth Coast Guard District

431 Crawford Street
Portsmouth, Va. 23704-5004
Staff Symbol: (dpb)
Phone: (757) 398-6422
Fax: (757) 398-6334
Email: Bill.H.Brazier@uscg.mil

16591

Sept 28, 2009

PRELIMINARY PUBLIC NOTICE 5-1163

TO WHOM IT MAY CONCERN:

The purpose of this notice is to notify mariners, adjacent property owners, and government agencies that the North Carolina Turnpike Authority (NCTA), in coordination with the North Carolina Department of Transportation (NCDOT) and the Federal Highway Administration (FHWA) propose plans for a new bridge to be constructed across Currituck Sound.

WATERWAY AND LOCATION: Currituck Sound, approximately 18 miles from the Wright Memorial Bridge, in the vicinity of Aydlett on the mainland and Corolla on the Outer Banks in Currituck County, NC - Chart# 12205

CHARACTER OF WORK: NCTA, in coordination with NCDOT and FHWA, is currently studying alternatives for the location for the proposed new Mid-Currituck Bridge across Currituck Sound to improve traffic flow on area thoroughfares US 158 and NC 12. The information gathered as a result of this preliminary public notice will assist the Coast Guard in determining adequate minimum horizontal and vertical clearances for the proposed fixed-span bridge alternative crossing Currituck Sound. The type of vessel information needed includes the vessel types that transit the waterway, commercial or recreational usage, height, draft, length, beam, tonnage, and mooring locations in Currituck Sound. Please submit the attached form in response to this preliminary public notice. The proposed bridge will provide 15 feet of vertical clearance along its length across Currituck Sound and a horizontal clearance of 40 feet between piles.

SOLICITATION OF COMMENTS:

It is requested that anyone having an interest in this proposed project, from the standpoint of navigation, submit vessel information, comments, and recommendations on the enclosed form and comments will be received for the record at the office of Commander (dpb), Fifth Coast Guard District, 431 Crawford Street, Portsmouth, Virginia 23704-5004 through October 28, 2009

Waverly W. Gregory, Jr.

WAVERLY W. GREGORY, JR.
Chief, Bridge Administration Branch
By direction of the Commander
Fifth Coast Guard District

EXHIBIT E

Mid-Currituck Bridge
Preliminary Public Notice 5-1163
Response Form

Vessel Information	**Please provide all requested information:**
Vessel Type	
Use – Commercial or Recreational	
Vessel Height	
Draft	
Length	
Beam	
Tonnage	
Mooring Location	

Name (Optional): _____

Address (Optional): _____

Phone (Optional):

_____

Comments and Recommendations: _____

_____

_____

_____

_____

EXHIBIT E

U.S. Department of Homeland Security

United States Coast Guard

Commander
United States Coast Guard
Fifth Coast Guard District

431 Crawford Street
Portsmouth, VA 23704-5004
Staff Symbol: (dpb)
Phone: (757) 398-6422
Fax: (757) 398-6334
Email: Martin.A.Bridges@uscg.mil
CGDFiveBridges@uscg.mil

16591
21 FEB 2020

PRELIMINARY PUBLIC NOTICE D05PPN-04-2020

All interested parties are notified that the Commander, Fifth Coast Guard District has received a proposal from the North Carolina Turnpike Authority and North Carolina Department of Transportation with plans for construction of a new highway fixed bridge over a navigable waterway of the United States.

WATERWAY AND LOCATION: Currituck Sound, approximately 18 miles north of Wright Memorial Bridge, between Aydlett on the mainland and Corolla on the Outer Banks, in Currituck County, NC.

CHARACTER OF WORK: The proposed project is to construct a new bridge across Currituck Sound from the mainland to the Outer Banks. The proposed two-lane, fixed span bridge is approximately 4.7 miles long and will have a minimum vertical clearance of 15 feet above mean high water and 40 feet of horizontal clearance between piers. The navigation span will be placed over deepest water. The proposed bridge will extend from a point on the mainland just north of Aydlett to the Outer Banks near the Corolla Bay community just south of Great Beach Pond and Whale Head Bay. The purpose of the project is to substantially improve traffic flow on the project area's thoroughfares (US 158 and NC 12), reduce travel time for persons traveling between the Currituck County mainland and the Currituck County Outer Banks, and reduce hurricane clearance time for residents and visitors who use US 158 and NC 168 during a coastal evacuation.

MIMIMUM NAVIGATIONAL CLEARANCES:

Existing	***Proposed***
Vertical Clearance: N/A	Vertical Clearance: Fixed - 15 feet above mean high water
Horizontal Clearance: N/A	Horizontal Clearance: 40 feet between piers

North American Vertical Datum of 1988 (NAVD88)

EXHIBIT F

SOLICITATION OF COMMENTS:

Mariners are requested to provide navigational information, such as the sizes and types of vessels presently owned and operated on the waterway and nature of navigation (including the extent of nighttime navigation) on the waterway. Mariners are requested to comment on the navigational clearances and need for bridge protective systems, clearance gauges, and navigational lighting on the proposed bridge. Please submit the attached response form.

Interest parties are requested to express their views, in writing, on the proposed bridge project, giving sufficient detail to establish a clear understanding of their reasons for support of, or opposition to, the proposed project. Comments will be received for the record at the office of Commander (dpb), Fifth Coast Guard District, 431 Crawford Street, Portsmouth, VA 23704-5004 through ***March 24, 2020.***

HAL R. PITTS
Bridge Program Manager
By direction

Encl: (1) Response Form
(2) Location/Vicinity Map

EXHIBIT F

Mid-Currituck Bridge
approximately 18 miles north of Wright Memorial Bridge, between Coinjock on the mainland and Corolla on the Outer Banks, in Currituck County, NC.

Preliminary Public Notice *D05PPN-04-2020*

Response Form

It is requested that anyone having an interest in this proposed project, from the standpoint of navigation, submit vessel information, comments, and recommendations on this form to the office of Commander (dpb), Fifth Coast Guard District, 431 Crawford Street, Portsmouth, VA 23704-5004 by ***March 24, 2020.***

Vessel Information	Please provide all requested information:
Vessel Type	
Frequency of Transit	
Use - *Commercial and /or Recreational*	
Vessel Height	
Draft	
Length	
Beam	
Tonnage	
Mooring Location	

Name (Optional): _____

Address (Optional): _____

Phone (Optional): _____

Comments and Recommendations: _____

_____

_____

_____

_____

EXHIBIT F

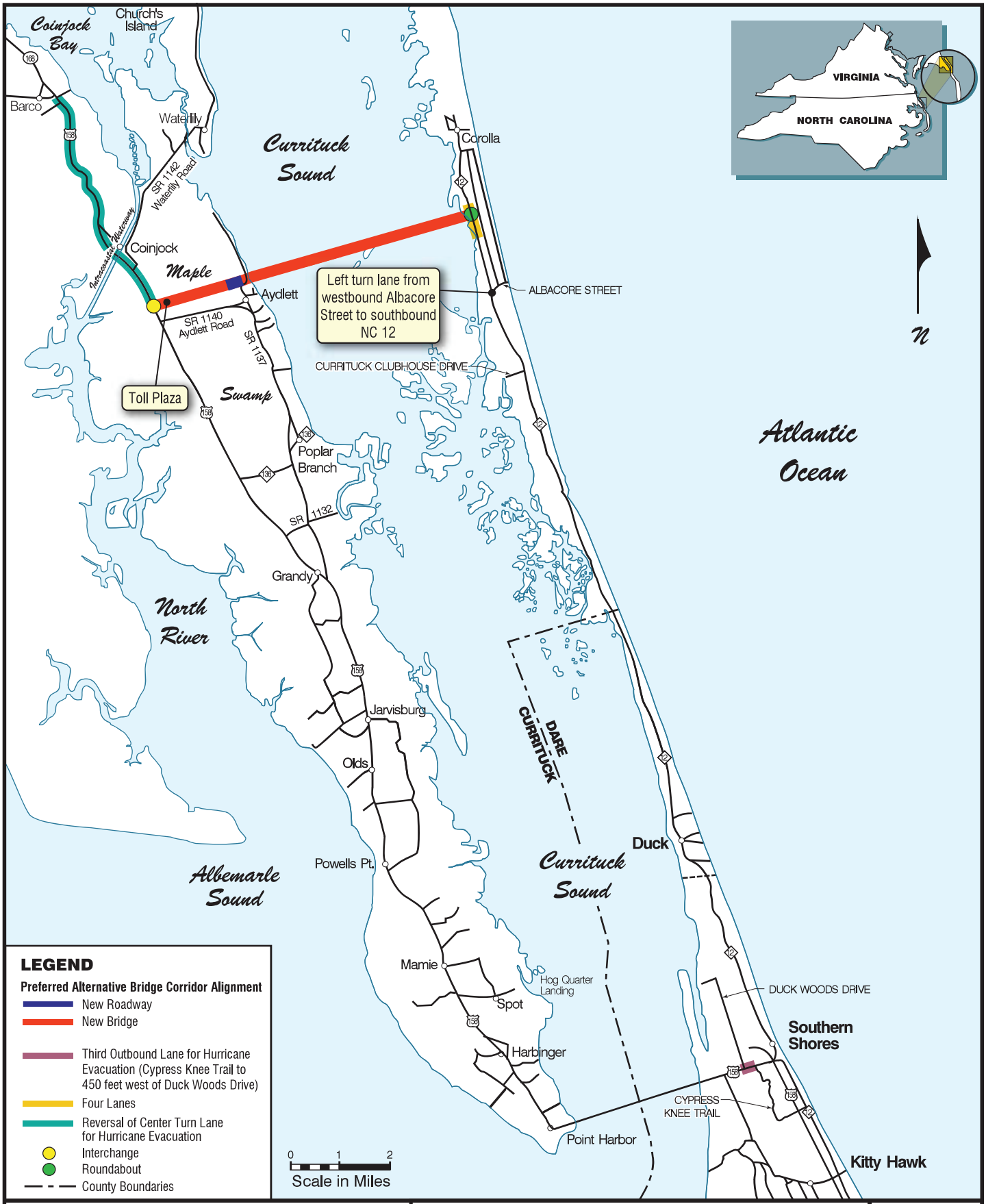

EXHIBIT F

Selected Alternative

Figure
1

No.	Name	Address	Phone	Vessel Information	Vessel Type	Use	Vessel Height	Draft	Length	Beam	Tonnage	Mooring Location
1	Frank James, Jr.	304 Park Ave; Piscataway, NJ 08854 41041 Channel Ct; Avon, NC 27915			Robalo 260	Recreational	8' - 3"	1' - 8"	26' - 5"	9'	6,075 lbs	Trailer
2	Sulivan Boat Woks & Charters	PO Box 91; Point Harbor, NC 27964	252-956-0953 cell 252-491-8570		Sport Fisherman Charter Boat	Commerical	23'	42"	33' - 7"	12' - 7"	8 Net Registered Tons	Pirates Cove Marina
3	Captain Emmett Smith, USN (Ret)	3875 Jefferson Blvd; Virginia Beach, VA 23455	252-617-5795		Searay 180DC w/outboard	Recreational	6'	30"	18'	7' - 6"	Dry Weight 1950 lbs	75% Virginia beach on Trailer 25% lift 101 Sandy Lane
4	C. P. "Buster" Nunemaker, III	2600 South Pilot Lane; Nags Head, NC 27959	252-305-1166		Wellcraft 250 Coastal	Recreational		2.5'	25' - 6"	8'	3,900 lbs	Trailer
5	Clyde D. Spruill	190 Tabernacle Lane; Aydlett, NC 27916	252-453-2084		Southwestern w/Evinrude 175hp outboard	Commerical primarily & recreational	7'	18"	25'	10'	1,500 lbs	Resident Dock Aydlett, NC 27916
6	Clyde D. Spruill	190 Tabernacle Lane; Aydlett, NC 27916	252-453-2084		Stumpknocker w/ 40 hp Mariner	Commerical & Recreational	4'	12"	17'	5 1/2'	800 lbs	Resident Dock Aydlett, NC 27916
7	Carl Talley	PO Box 37; Poplar Branch, NC 27965			Cat	Commerical	23' - 8"	3 1/2'	45'	15'	5	Popular Branch/Duck
8	John Geddie	131 Willow Ct; Duck, NC 27949			Roontoon Boat	Recreational	11'	30"	24'	8'	1	Currituck Sound Duck
9	Ben Kelley	211 Fentress Dr. Knotts Island, NC 27950	252-429-9213		Carolina Skiff	Recreational	12' Above waterline	12"	23' - 6"	8'		Knotts Island-Currituck Sound
10	Richard Schneider	938 S. Harbor View Corolla, NC 27927	443-250-4704		Hobie Getaway Catamaran	Recreational	26 1/2'	8"	16' - 7"	7' - 8"	390 lbs	938 South Harbor View Corolla, NC
11	F. Cross	137 Nautical Lane; Currituck, NC 27929	252-232-3079		23' Scout, Fishing/Pleasure	Recreational	7'	30"	23'	8' - 6"	not much	Coinjock Bay
12	George Banks	PO Box 367; Hatteras, NC 27943	252-986-2709		Carolina Skiff	Recreational	14'	1.5'	21'	8'	7	Hatteras, NC
13	Ervin E. Pickett	105 Poplar Bay Rd; Poplar Branch, NC 27965	252-207-3113		1. Fiberglass Inboard 2. Fiberglass Outboard	1. Commerical 2. Commerical	1. 7 1/2' 2. 2'	1. 2 1/2' 2. 1'	1. 30' 2. 19'	1. 8 1/2' 2. 6'	1. 2 1/2 ton 2. 1 ton	Poplar Branch Currituck, NC
14	David J. Chappelle, Sr	106 Dana Street; Moyock, NC 27958	252-232-2429		Starcraft	Recreational			16'		700 lbs	106 Dana Street Moyock, NC
15	Lamar Salterfield	PO Box 422; Rodanthe, NC 27968	252-987-1515		21' Center Console	Both	5'	4'	21'	7'	1	Rodanthe, NC
16	Joe Moran	1154 Harbourview Dr; KDH, NC 27948	252-207-9861		19' Renken	Commerical	8'	4'	19'	8'	1	Collington Harbour
17	Graham Wagner	3016 Robin Lane; Havertown, PA 19083	610-446-2300 (graham @wagnerrealestate.com)		Hunter 170 Sailboat	Recreational	26'	4' 6"	17'	7'	500 lbs	Monterey Shores-Sound Front 910 Sea Ridge Dr Corolla, NC 27927
18	R. S. Meekins, Jr.	PO Box 398; Wanchese, NC 27981	252-473-3283		Commerical Trawler	Commerical	45'	6'	42'	12'	12	Wanchese, NC
19	Horace Whitfield	42 Honeysuckle Ln; S. Shores, NC 27949	252-216-5245		30' Crown Point Dory	Recreational	32'	2'	30'	8'	2	Manteo, NC
20	Nancy Swisstack	PO Box 754; Buxton, NC 27920			Motor boat	Recreational			24'			
21	Marion West Ambrose, Jr	279 Waterlilly Rd; Coinjock, NC 27923			1. Jones Bros. 2. HM Juniper Skiff	Recreational	1. 6' 2. 3'	1. 2' 2. 2'	1. 19' 2. 18'	1. 7' 2. 7'		Coinjock, NC
22	W. M. Pace	9920 Cherokee Road; Richmond, VA 23235	804-380-3603		Runabout	Recreational	4'	8"	17'	3.5'	500 lbs	Southern Shore and Slip
23	Terry Lynn	205 Owens Beach Rd; Harbinger, NC 27941			25' Parker / 18' Parker / 15' Skiff	Commerical	12' / 6'	2' / 15"	25' / 18' / 15'	9.6' / 5'	1.5 tons / 3/4 tons	Jarvisburg / Harbinger
24	Jimmie Roberts	PO Box 156; Aydlett, NC 27916			Centerconsole Fiberglass	Recreational	8'	2'	23'	8'	1/2	Aydlett Shore, Currituck
25	Ches Tyson	147 Pinewood Acres; Powell Point, NC 27906	252-202-8468		Look Out	Both	13' 7"	22'	26'	10' 4"	4.5	Kitty Hawk

No.	Name	Address	Phone	Vertical Clearance	Bridge Support	Vessel Information	Vessel Type	Frequency of Transit	Use	Vessel Height	Draft	Length	Beam	Tonnage	Mooring Location
1	Guy Johnson	113 Baggy Davis Lane; Currituck, NC 27929	252-232-3900 252-202-7776	>15'			Catamaran Hobie 16	Summer	Recreational	28'-6"	10"	16'-7"	7'-11"	320 lbs	Bells Island
2	Mike Bryant	3194 Adam Keeling Road; Virginia Beach, VA 23454		>15'			Sport Fishing	2 time a year	Recreational	23'	3'	32'	10'-2"		Virginia Beach, VA
3	Hardy Peters	323 N. Dogwood Trail; Southern Shores, NC	252-489-3491	35'			Nacra 580 Sailboat	3-8 times a year	Commercial and Recreational	31'	2.5'	19'	8'	< 1 ton	Southern Shores
3	Hardy Peters	323 N. Dogwood Trail; Southern Shores, NC	252-489-3491				Flying Scot Sailboat	3-8 times a year	Commercial and Recreational	24'	3.5'	20'	6'	1.5 ton	Southern Shores
4	Graham Wagner	910 Sea Ridge Drive; Corolla, NC	610-761-7612	30'			Hunter Sailboat	Spring, Summer, Fall	Recreational	25'	52"	18'-4"	7'-2"	836 lbs	Monteray Shores
5	Mark Miller	836 Buccaneer Village; Manteo, NC	910-476-3144	>15'			Contender Center Console	Infrequent	Recreational	17'	2.5'	28'	8'-9"	5 ton	Wanchese
6	Stonewall Pittman	316 Narrow Shore Road; Aydlett, NC	252-453-2351	35'											
7			252-453-4522	24'											
8	Joseph Simpson	140 Edgewater Drive; Grandy, NC 27939	252-491-9232	>15'			Pontoon	6-8-times a year	Recreational	9'	18"	24'	8"	1.5 tons	Grandy
9	E. Wayne Clark	177 E Ridge Road; Moyock, NC 27958	757-617-7137				Fiberglass Boat	+20 times a year	Recreational	12'	2'	21'	8'		
10				40'						40'	3'				
11					No										
12	Calvin R Umphett	118 Woodhouse	252-202-3681				Pleasure Craft	0 - in dry dock	Recreational	13'	2'	28'	10'		
13					Yes		Center Console	Seldom	Recreational	5'	1.5'	21'	7.5'	1.5 tons	Southern Shores
14	Michael H. Payment	117 Barefoot Lane; Grandy, NC 27939	757-763-8110		Yes		Cuddy Cabin (Key West)	Summer	Recreational	5'	3'	20'	6'		Trailer
15	Steve Hatchman	297 Sea Oats; Southern Shores, NC	612-716-3991	>15'			Runabout with outboard	16 times a year	Recreational	6'-6"	2'-6"	19'	8'	1 ton	Trailer
16	George Kendall	1216 Harbour View Drive; Kill Devil Hills, NC	252-449-8658				Motor	4 times a year	Recreational	12'	3'	35'	9'	4 tons	Colington Harbour
17	Arthur Hepler	Manteo, NC			Yes										
18	Raymond Kutzer	102 Duchess Court; Kill Devil Hills, NC 27948	814-440-8590		Yes										
19	Dave Stormont	6036 Currituck Road; Kitty Hawk, NC 27949	252-207-2422		Yes		Outboard Motor Vessel	6 times a year	Recreational	6'	2'	20'	7'		Kitty Hawk
20	Glenda Gaskill	Kill Devil Hills, NC			Yes										
21	Robert Gilliam	2127 Sandfiddler Road; Corolla, NC 27927	919-428-1089				Yamaha Jet Boat	1-2 times a week in summer	Recreational	12'	1.5'	24'	8'	3500 lbs	Carova Beach
22	Jim Huitt		804-339-3013				Pro Sport 2200 WA	3-4 times a year	Recreational	10'	2'	22'	8.5'	1 ton	Martins Point Kitty Hawk
23	Larry Thompson	211 Amberjack Court; Nags Head, NC	757-650-2235		Yes		Center Console	4 times per year	Recreational	7'-8"	12"	20'-11"	8'-5"	2300 lbs	Nags Head
24	Edgar O'Neal	3537 Caratoke Highway; Maple, NC 27956	252-455-0833		Yes		Open Skiff	Weekly	Recreational	4'	8"	16'	58"		Maple
25	William S. Arnoult	270 Hillcrest Drive; Kitty Hawk, NC 27949	301-980-8422				Day Sail	1 time per year	Recreational	25'	3'	18'	6'	500 lbs	
26	Adam Herman	210 W Lost Colony Drive; Nags Head, NC 27959			Yes		Polar Center Console	Rare - once in 19 years	Recreational	8'	1.5'	18'	5'	2500 lbs	
27	Don M. Roberts	204-236 Narrow Shore Road; Aydlett, NC	757-944-1322				Center Console - V Bottom	Daily May - September	Recreational	7'-2"	22"	18'	6'-4"	1 ton	Aydlett

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28	Wallace Pittman	205 Poyners Road; Moyock, NC 27958	757-434-9452		Yes		Skiff	10 times a year	Recreational	6'	1'	19'	6'	1 ton	Trailer
29	Marion H. Whitaker, Jr.	219 Mariners Way; Moyock, NC 27958													
30	Brian Bollager	152 Poteskeet Loop; Southern Shores, NC	252-715-0225				Sailboat	Infrequent	Recreational	15'	18"	10'	3.5'		Southern Shores
31	James Barnes	212 Moyock Landing Drive; Moyock, NC 27958			Yes		Pontoon	1-2 times per year	Recreational	10'	2'-6"	24'	8'	0.5 ton	Mainland Currituck County
32					Yes		Center Console - Outboard	Seldom	Recreational	5'	2.5'	22'-10"	102"		Colington
33	J. Kenneth Edsal	1335 Waterlily Road; Coinjock, NC 27923	252-453-3169		No		Cuddy Cab	Multiple times daily	Commercial and Recreational	13'	3'	34'	10'	2 tons	Waterlily and Poplar Branch
33	J. Kenneth Edsal	1335 Waterlily Road; Coinjock, NC 27923	252-453-3169				Open Skiff	Multiple times daily	Commercial and Recreational	7'	2.5'	20'	8.5'	1 ton	Waterlily and Poplar Branch
33	J. Kenneth Edsal	1335 Waterlily Road; Coinjock, NC 27923	252-453-3169				Skiff with Scissors Rig	Multiple times daily	Commercial and Recreational	8'	2.5'	23'	8.5'	1 ton	Waterlily and Poplar Branch
34		101 Cooper Landing Drive; Aydlett, NC 27619	540-270-0708		No		Pontoon	50-60 times a year	Recreational	8'	18"	20'	8'	2 tons	Aydlett
35	John Atwood	P.O. Box 35	757-705-7383 252-429-3295				Fish/Crab	10 Month Yearly	Commercial and Recreational	28'	30"	30'	10'-3"	9 tons	Knotts Island
36	Murray Elliott	198 Elliott Road; Aydlett, NC 27916	252-809-2275		No		Motorboat	Varies	Recreational	8'	1'	18'	6'	1 ton	Aydlett
37	Richard Connell	109 Wood Duck Drive; Currituck, NC 27929			Yes		Scout	3-4 times a year	Recreational	5'	3'	14.5'	5'	1 ton	Bells Island
38	Steve Hankins		603-828-4139				Cruiser	<20 times a year	Recreational	4'	18"	15'		0.5 ton	
39							Fiberglass/Outboard	Once a month	Commercial and Recreational	8'	3'	28'	8'		Duck
40	Officer-in-Charge USCG ANT Wanchese, NC	908 Harbor Road; Wanchese, NC 27981	252-473-1531				Military	2 times a year	Military	14'-7"	5'-11"	55'	16'-10"	74066 lbs	Wanchese
40	Officer-in-Charge USCG ANT Wanchese, NC	908 Harbor Road; Wanchese, NC 27981	252-473-1531				Military	2 times a year	Military	9'	2'-4"	29'-7"	8'-4"	9700 lbs	Wanchese
41					Yes		Pontoon	4 times a year	Recreational	10'	2'	22'	8'	1.5 tons	Kitty Hawk
42							Center Console Planning Hull	Weekly	Commercial and Recreational	10'	24"	21'	8.5'	<5 tons	Kitty Hawk
43							Center Console Planning Hull	Weekly	Commercial and Recreational	10'	24"	21'	8.5'	<5 tons	Kitty Hawk
44	Margaret L. Harrell	128 North Point Blvd; Moyock, NC	252-267-3774		Yes										
45							Key West 2020cc	2-3 times a week	Recreational	9'	17"	20'-6"	7'		Trailer
46							Sail Hunter	Once every two years	Recreational	47'	4'	30'	8'		Oriental
47	Lynn Tadlock	11575 Avondale Drive, Fairfax, VA	703-278-0164				Godfr Hurrican deck boat	Daily in summer	Recreational	13'		23'		8000 lbs	
48	Ed Holmes	106 Canal Court; Grandy, NC 27939	252-267-4332				Pontoon Boat	weekly	Recreational	15'	3'	20'		3 tons	Grandy
49	Robert Kirk	121 Tabernacle Lane; Aydlett, NC 27916	252-202-6654		No										
50	Jerry Shepherd	106 Teal Drive; Currituck NC	703-595-9305				Fish and Ski	3 times per year	Recreational	4'	18"	21'	6'	1 ton	Currituck
51	Russ K. Hampton	105 Annettes Court; Aydlett, NC 27916	252-453-2264		No		Open Skiff	Weekly in season	Recreational	6'	6"	19'	6'		Trailer
51	Russ K. Hampton	105 Annettes Court; Aydlett, NC 27916	252-453-2264				Ski Boat	Weekly in season	Recreational	6'	18"	20'	7'		Trailer

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52	William Brumsey	115 Goose Castle Terrace; Currituck, NC 27929	252-207-2035		Yes		Center Console	6-8 times per year	Recreational	8'	12"	21'	8'-6"	3.8 tons	Bells Island
53	Pete McClintock	114 Tulls Bay Drive; Moyock, NC 27958	757-421-0929	>15'			Center Console, Outboard	6 times per year	Recreational	10'	16"	19.2'	6.4'		Moyock
54	TJ Crum	4006 Parker Street; Kitty Hawk, NC			No										
55	Jim Davis	242 Broadway Drive; Kill Devil Hills, NC 27948	252-441-3810		Yes		Bayliner	Never	Recreational			24.5'			
55	Jim Davis	242 Broadway Drive; Kill Devil Hills, NC 27948	252-441-3810				Tartan Sailboat	Never	Recreational			33'			
56	James Leeds	Bells Island			Yes		Deck Boat	2 times per week	Recreational	4'	1'	21'			
57	Donna Holcomb	101 Seahawk Court; Grandy, NC 27939	757-805-7205				Fisher Marine	10 times per year	Recreational	7'	6"	15'	3'-6"		Grandy
58	Amy Thomas	108 Bayside Drive					Center Console	<10	Recreational	7.5'	19"	23'	8'-6"	3800 lbs	Rivers Edge
59	Michael P. Lanman	131 Martin Lane; Duck, NC 27949	561-445-5501				Pontoon Boat	3 times weekly in summer	Recreational	7'-3"	14"	27'	8.5'	2.5 tons	Duck
60	George Fockler	7017 Martins Point Road, Kitty Hawk, NC 27949					Center Console, Outboard	Never	Recreational	9'	13"	22.5'	8'-6"	2300 lbs	Kitty Hawk
61	Thomas Herman	104 Weir Point Drive; Manteo, NC 27954					Sea Ray Power Cruiser		Recreational	4.5'	3'	26'-8"	8'-6"	4680 lbs	Manteo
62	Kevin M Carroll	7001 Currituck Road; Kitty Hawk, NC 27949	727-698-6963				Nautic Star Legacy Center Console	Rarely	Recreational	9'	18"	23'	8'-2"	4500 lbs	Kitty Hawk
63		2144 Drake Road	757-335-1573				2472 Sea Ark	Monthly	Recreational	8'	1.5'	24'	8'		Knotts Island
64	Jerry W. Wright	204 Jerry's Way; Jarvisburg, NC 27947	256-491-8303				Inboard	10-15 trips per year	Commercial and Recreational	12'	2.5'	30'	12'	3 tons	Jarvisburg
65	Bradley Nash	128 Quail Run; Moyock, NC	252-305-5447				Center Console	1-2 times a month	Commercial and Recreational	13'	16"	21'	8'	3000 lbs	Camden
66	David Hoare	6389 Caratoke Highway	252-207-2336		Yes		Stingray i/o drive	2-3 times a month	Recreational	7-8'	2'	20'	8'		Trailer
67	Steve West	1005 Brookedale Court; Chesapeake, VA 23322			Yes		Scout Sport Fisher	on and off	Recreational	5'	18"-24"	18'	5'	2500 lbs	Grandy
68	Charlie Beasley	62 Deer Path Lane; Kitty Hawk, NC 27949	252-261-3045	15'	Yes		Parker Privateer Carolina Skiff	Never	Commercial	5'	2.5'	25'	9'		Colington Island
69				65'			Center Console	2 times per year	Recreational	10'	2'				Trailer
70	William Grover	2166 Teal Road; Corolla, NC 27927			Yes		Fishing & Cruising	Regular	Recreational	10'	1'	24'	8'	1.5 tons	Carova
71	Henry & Nancy Marcussen	135 Duck Woods Drive; Southern Shores, NC 27949	252-715-2738		Yes		Bayliner Element E18	Once a month	Recreational	84"	24"	18'-2"	7'-5"	1 ton	Southern Shores
72	G Kaputa	145 Lea Court; Kill Devil Hills, NC 27948	252-489-9211				Cabin Shamrock Plaining	Weekly	Recreational	10'-5"	3'	25.5'	10'	2 tons	Carlington Harbour
73	Melinda Hubert	Kitty Hawk, NC			Yes										
74							Cuddy Cabin inboard/outboard	Hardly ever	Recreational	8'	3'-6"	20'-3"	6'-6"	1 ton	Moyock
75	Ray Hedgepeth	1617 Princess Ann Road; Kill Devil Hills, NC 27948		20'	Yes										
76					Yes		Scout	Once a month	Recreational	7'	2'	18'-6"	8'		Dare County
77	Bob Bernhard	296 Woodleigh Road; Knotts Island, NC 27950	757-613-0478				Honda PWC-ARX1200T3	2 times a week in summer	Recreational	42"	24"	126"	49"	791 lbs	Trailer
78							Boston Whaler Outrage	1 time per month	Recreational	10'	12"	18'-6"	7'-2"	2500 lbs	Jean Guite Creek

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79							Sailboat	6 times a year	Recreational	35'	6'	26'	8'-6"	5000 lbs	Colington
80	Christopher Durham		252-204-1254		No		Carolina Skiff		Recreational	8'	18"	19'	8'	1800 lbs	Multiple
81							Pro Craft Competitor Bass Boat	10 times a year	Recreational	3'	2'	17.6'		1200 lbs	Trailer
82							Mako 238 WA	2 times per month	Recreational	14'	14"	23'	8'-6"	3000 lbs	Jean Guite Creek
83					Yes		Propulsion	Never	Commercial and Recreational	3'	1'	16'	7'	1600 lbs	
84							Center Console	5 times a year	Recreational	11'-7"	20"	28'-4"	9'-8"		Kill Devil Hills
85	R. Gusler	Wanchese, NC			Yes		Outboard	Once a year	Recreational	3'	2'	15'	5'		
86					Yes		Jon Boat	Very Infrequent	Recreational	5'	6"	14'	5'	<1 ton	Kill Devil Hills
87					No										
88	Daniel Leggett	70 Hickory Tail					Boston Whaler	1 time per month	Recreational	6'	1'	17'	7'	0.25 tons	Jean Guite Creek
89	Tammy Johnson	1 Sailfish Drive; Manteo, NC 27954			Yes										
90	Hunter Crum				No										
91	Amanda Evans	134 E Canvasback Drive; Currituck, NC 27929	757-288-6290		No		Jet Skis	Weekly	Recreational	3'	1'	11'	3'	1100 lbs	Currituck
92	Lloyd G. Brinson	100 Gadwell Drive; Currituck, NC			No		Stingray Bow Rider	4 times a month	Recreational	6'	18"	21'	6'	3400 lbs	Bells Island
93	Linda Brinson	100 Gadwell Drive; Currituck, NC 27927	336-816-8503		No		Stingray Bowrider	3-4 times a month	Recreational	6'	18"	21"	6"	3400 lbs	Currituck, NC
94	Joseph Pruden	305 Harbinger River Road; Harbinger, NC 27941			Yes										
95	Terry G Seaks	2000 Brassfield Road; Greensboro, NC 27410	336-288-9048		Yes		Tide Runner fishing boat	Rarely	Recreational	2.5'	1.5'	10'-5"	5'	250 lbs	Kitty Hawk
96							Carolina Skiff	2-3 times a year	Recreational	5'	1'	19'	5'	0.5 ton	Colington Harbour
97							Catamaran Twin Vee with Tower	4 times per year	Recreational	15'	2'	22'	9.5'	2.5 tons	Southern Shores
98							Kayak - Hobie	Local fishing	Recreational	3'	10"	14'	3'		Trailer
99	Richard Anderson	59 Deer Path Lane	261-5511	15'			Carolina Skiff	Infrequent	Recreational	2'	6"	14'	5'		Southern Shores
100	Mark Hellmon	2001 Creek Road; Kitty Hawk, NC 27949	513-582-8889				Pontoon	Occasionally	Recreational	8'	2'	24'	8.5'	3500 lbs	Trailer
101							Key West	Rarely	Recreational	6'	2.5'	17'	6'	1 ton	Trailer
102	William B Cornett	319 Whitestone Road	704-400-4871				Outboard	2-4 times per year	Recreational	8'	2'	23'	8'	<1 ton	Wanchese
103	W. Ouzts, Sr.	103 Donna Court; Moyock, NC 27958	757-620-1914				Pontoon Boat	4 times per season	Recreational	12'	4'	20'	14'		Trailer
104	Chris Coleman	8443 Caratoke Highway; Powells Point, NC 27966	252-491-9223				Spud Barges	Regular use	Commercial	20'	3'	45'	25'-42'	60 tons	
105	Michael H Glover				Yes		Recreational Boat		Recreational			15'			
106	Randy Reale	237 Kitty Hawk Bay Drive; Kill Devil Hills, NC 27948					Sports Boat	2-3 times a season	Recreational	7'-2"	16'	21'-4"	8'-4"	1.2 tons	Kitty Hawk Bay

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107	Lillie Button Daniels	PO Box 24; Wanchese, NC 27981			Yes										
108	Harry D Hill	101 Goose Castle Terrace; Currituck, NC 27929	252-435-4599		Yes		Pontoon	4-6 times yearly	Recreational	7'	8"	21"	8.5"	2000 lbs	Bells Island
109	Capt. Romulus A. Whitaker	PO Box 150; Hatteras, NC 27943	252-986-1031	35'			Sport Fisher	Never	Commercial	29'	4.5'	53'	14'	27 tons	Hatteras
110	CH Garczynski	1033 Martins Point Road; Kitty Hawk, NC 27949	252-261-0673		No		Carolina Skiff J-16	Infrequent	Recreational	4'	1'	15'-8"	4'	<1 ton	Kitty Hawk
111	Brenda Gale	101 Cooper Landing Drive; Aydlett, NC 27619	571-276-0064		No		Pontoon	50-60 times a year	Recreational	8'	18"	20'	8'		Aydlett
112	Sean Jennings	143 Sound Shore Drive	757-630-2206		Yes		Center Console	2-3 times a week	Recreational	8'-3"	16"	23'	8.5	2 tons	Currituck on the Sound
113	Edward Horner	149 Yaupon Terrace; Southern Shores, NC	347-739-5257		Yes										
114	Victoria Hampton	105 Annettes Court; Aydlett, NC 27916			No										
115	Jeff Thompson	PO Box 166: Wanchese, NC 27981	252-473-6395		No		Fiberglass		Commercial	15'	32"	32'	12'		Wanchese
116	James Storey	108 Quoric Court; Kill Devil Hills, NC 27948													
117	Sam Brinson	134 E Canvasback Drive; Currituck, NC 27929			No		C-Hawk Sport Cabin	Weekly	Recreational	8'	2'	25'	5'	3500 lbs	Pier
118					Yes		Boston Whaler	Never	Recreational	4'	2'	17'	8'	2000 lbs	
119	Mike Glover	16 Yacht Club Court; Manteo, NC					Sabre	Never	Recreational	17'	4'	42'	14'	15 tons	Manteo
120					Yes		Boston Whaler	Never	Recreational	4'	2'	17'	8'	2000 lbs	
121	J Aydlett	1716 Bay Drive; Kill Devil Hills, NC 27948	252-202-9393		Yes		Skiff	12 times a year	Recreational	18'	12"	13'-10"		128 lbs	Residence
122	Michael Schutzer	864 Drifting Sands Drive; Corolla, NC 27927	732-407-6973		Yes		Yamaha 1925X Jet Boat	15-20 times per year	Recreational	3.5'	12.8"	19'	8'	2156 lbs	Residence
123							185 Bayliner	2-3 times a year	Recreational	7'	3.5'	19'	6.5'		Coinjock
124	George LB Grinnan	106 Quail Way; Duck, NC 27949	252-261-1921		Yes		Carolina Skiff	Once a week	Recreational	5'-6"	6-8"	19'	5'		Residence
125					Yes										
126	Brian P Innes	136 Pats Way; Barco, NC 27917	252-207-5100		Yes		C-Dory	Few times a year	Recreational						Residence
127	Jessiebeth Geddie	131 Willow Court; Duck, NC	252-207-8525		Yes		Southern Skimmer	Monthly	Recreational	5'	8"	16'	4'		Duck
128	Bernsten	141 N Holly Trail; Southern Shores 27949	252-564-4142				Donzi Power	3-4 times a year	Military	10'	2'	23'	9'	4500 lbs	Southern Shores
129	William Knoch	574 Ocean Trail; Corolla, NC 27927	252-207-8907		No		Kencraft	40 days a year	Recreational	5'	10"	16'	5'	800 lbs	Trailer
130	Katherine A Roche	111 Shore Drive; Jarvisburg, NC 27941	252-491-6527		Yes										
131	J Troutman	Nags Head, NC			Yes		Center Console	Limited	Recreational	9'	20"	20'	8'		Nags Head
132	Rey Smith	6076 Currituck Road; Kitty Hawk, NC 27949					Robalo	Twice a year	Recreational	15'	20	26'	8.5'	1000 lbs	
133	John Geddie	131 Willow Court; Duck, NC 28409	252-261-4273		Yes		Pontoon	Monthly	Recreational	8'	1.5'	21'	8'		Duck
134	Rodney W Perry	81 S Dogwood Trail; Southern Shores, NC 27949	252-261-3574		Yes		Center Console	Several times a year	Recreational	7'	18"	21'	8'		Southern Shores

No.	Name	Address	Phone	Vertical Clearance	Bridge Support	Vessel Information	Vessel Type	Frequency of Transit	Use	Vessel Height	Draft	Length	Beam	Tonnage	Mooring Location
135				>15'			Parker	3 times a week	Commercial and Recreational	20'	18"	23'	9'		Maple
136							Albemarle Express	Daily in season	Recreational	10'	2'	24'	8'	7000 lbs	Colington
137	Moakley	Wanchese, NC			Yes		B&D Motor Yacht	Never	Recreational	20'	6'	60'	15'		Pirates Cove
138					Yes										
139							Skiff	During duck season	Recreational	5'	8"	18'	7'		
140							Deck Boat	4 times a week	Recreational	10'	3'	22'	8'	4000 lbs	Tulls Creek
141							Hobie Tandem Island Sailboat	3 times a week	Recreational	19'	1'	18'-6"	10'	600 lbs	
142							Center Console	Occasionally	Recreational	10'		21'	102"	2200 lbs	
143							Outboard powered boat	>6 times a year	Recreational	5'-6"	2'-6"	22'	7'	2.5 tons	Point Harbor
144	William P Blackwell	203 Augusta Drive; Grandy, NC 27939			Yes										
145	Michael Kelly	PO Box 1089; Nags Head, NC 27959	252-202-4116				Hurricane Deck Boat	1-3 times a year	Recreational	12'	2'	23'	8'	1 ton	
146	Franklin Shelby	11910 Millbrooke Court; Monrovia, MD 21770	301-865-1314		Yes		Pleasure - fishing boat	Rarely	Recreational	10'	3'	28'	10.5'	6 tons	Kill Devil Hills
147	Jonathan Keffer	175 Riversedge Drive; Moyock, NC 27958	252-548-0955	35'			Sailboat	6-20 times a year	Recreational	33'	15" to 6'	28'-5"	8'-4"	3800 lbs	Trailer

NORTH CAROLINA Turnpike Authority

Attachment II

Bridge Clearance Coordination Meeting Summary

Date: February 8, 2010

Attendees: Tracy Roberts, HNTB
Jose Luque, ACS Infrastructure Development
Roy Bruce, Lochner MMM LLP
Mike Bradley, Small Business and Technology Development Center (SBTDC) – Boating Industry Services

Location: SBTDC Conference Room – 5 West Hargett Street, Raleigh, NC

Notes by: Roy Bruce (edits by Tracy Roberts)

Subject: Mid-Currituck Bridge – Bridge Clearance Coordination Meeting

Following introductions and explanations of project roles, Tracy gave an overview of the project to date and the work already done on the bridge clearance requirements. The following summarizes the discussions at the meeting and the decisions made:

Subject	Action	To Be Completed by
1. Bridge Clearance Issues		
1.1 Mike encouraged strong use of the Draft Environmental Impact (DEIS) Public Hearing process for further local input on the horizontal and vertical clearance needs of the boating community in Currituck Sound. He felt that the extent of previous efforts through the US Coast Guard's Preliminary Public Notice (PPN) process should be summarized so that the public knows what has already been happening.		
1.2 The 45 foot high commercial trawler from the PPN responses is not likely to be in Currituck Sound according to Mike because of the 6 foot draft of the boat and the erratic and shallow water depths in Currituck Sound. This vessel cannot get under the Wright Memorial Bridge (due to a vertical clearance of only 35 feet) to the deepest water. This vessel can only access Currituck Sound via the Intracoastal Waterway near the north end of the Sound.		

EXHIBIT I

Subject	Action	To Be Completed by
1.3 The 32 foot high Crown Point Dory boat is also not likely to traverse Currituck Sound, particularly through the Big Narrows area due to the shallow water depth and limited winds. According to Mike this boat can lower its mast in sections to traverse under a 15 to 18 foot high bridge. The owner of this boat is the captain of the State owned Elizabeth II that is moored in Manteo at the State Museum. The Crown Point Dory is an old type of commercial fishing vessel. This one is being used for recreational purposes only.		
1.4 The 23 foot 8 inch commercial cat vessel has the mast at the bow. This is a traditional oyster fishing boat. It is likely an antique according to Mike as these types of vessels are not used much today. The mast on this vessel can be lowered to traverse under restricted clearances. Since this boat is located south of the Big Narrows, Mike expects that it is using southern Currituck Sound and exiting to Albemarle Sound under the Wright Memorial Bridge. Mike does not expect that this vessel is heading north in Currituck Sound because of the shallow water and limited winds in the Big Narrows.		
1.5 The 26.5 foot Hobie Catamaran could be an issue for C1 more so than C2 because of the mooring location of this boat on the east side of Currituck Sound between these two corridors. Deeper sailing water is north of the C1 corridor rather than south of the C2 corridor. Mike noted that this boat can also take down its mast at restricted vertical clearance locations. He also does not expect this boat to traverse the Big Narrows area because of water depths and limited winds.		
1.6 The 26 foot high Hunter 170 Sailboat is similar to the above boat with a mooring on the east side of Currituck Sound between the C1 and C2 corridors. This sailboat has a larger draft (4.5 feet) than the catamaran (8 inches) and will find Currituck Sound more challenging given the shallow water depths. Mike indicated that this boat would not likely traverse the Big Narrows area because of shallow water and limited winds.		
1.7 The 23 foot high sport fisherman charter boat would not likely be in Currituck Sound because of the boat draft (3.5 feet) and shallow waters according to Mike. This is confirmed by the boat owner in their response to the PPN.		

Subject	Action	To Be Completed by
1.8 Mike noted that many of the boats in Currituck Sound may be "T" tops with a center console. As such the "T" top could be 15 feet above the water. Extending above the "T" top is the radio antenna. A bridge vertical clearance of 18 feet above water could likely accommodate these boats without the antenna having to be removed. Mike encouraged consideration of a navigational span of at least 18 feet vertical clearance for a portion of the bridge. The remainder of the bridge could have a lower 15 foot vertical clearance.		
1.9 Mike asked about any crab pots that are in Currituck Sound. Laws require that these pots be set up with a buoy and be out of the navigational channel. Since there is no formal navigational channel in Currituck Sound, these pots could be a hindrance to navigation in the Sound.		
1.10 Mike asked about "shrimping" in Currituck Sound. His concern was relative to the width of the commercial trawlers with the outriggers extended going under the bridge. Once Mike knew that the proposed bridge spans would be around 100 feet in the deeper water, he saw no problems with horizontal clearances for fishing vessels.		
1.11 Mike agreed that the Big Narrows area in Currituck Sound is a restriction that will likely reduce the boating traffic through that area because of erratic and shallow water and reduced winds because of nearby islands. He saw the 35 recreational private docks along the west side of the Sound north of the Big Narrows and south of C1/C2 as an area for more detailed study through the Public Hearing process with property owners in this area. The other issue area is along the east side of Currituck Sound between the C1 and C2 alignments and the private recreational docks in this area. It is unclear if boats are using these docks and the size of these boats. The locations of these docks are north of the Big Narrows and south of one or both bridge corridors. More information is needed to determine possible impacts of the project on these private docks and owners.		
1.12 Based on the available data, Mike saw no reason why a 15 to 18 foot high vertical bridge clearance could not be provided over Currituck Sound in this area.		

Subject	Action	To Be Completed by
1.13 Mike encouraged us to meet with the US Coast Guard and show them the bathymetric map of Currituck Sound used in the meeting today. Tracy explained that this would be done once the DEIS Public Hearing process is completed for the project and more data is known about boating in Currituck Sound.		