

*HARKERS ISLAND BRIDGE
REPLACEMENTS PROJECT
CONCURRENCE POINT 2
TIP PROJECT B-4863*

June 2016
Carteret County, NC

RS&H



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Carteret County, NC

Prepared by RS&H, Inc. at the
direction of the North Carolina
Department of Transportation (NCDOT)

RS&H



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1.0 INTRODUCTION

1.1 Concurrence Point 2 Meeting Purpose

The North Carolina Department of Transportation (NCDOT) is requesting concurrence on Detailed Study Alternatives (DSA) to be carried forward (alternatives which satisfy the purpose and need of the project) for the State Transportation Improvement Program (STIP) project number B-4863. These alternatives will be studied and evaluated in sufficient detail to ensure a good transportation and permit decision-making process. This report will provide a brief description of the No Build Alternative, the non-traditional transportation alternatives, and the functional design alternatives studied. This report will be utilized by the NEPA/404 Merger Team for discussions during the formal Concurrence Point 2 (CP 2) meeting – Detailed Study Alternatives Carried Forward.

1.2 Project Description

NCDOT proposes to replace the existing Harkers Island Bridges (Bridge No. 73 and No. 96) on SR 1332/1335 (Harkers Island Road) in Carteret County. NCDOT has initiated studies for this bridge replacements project in accordance with the requirements set forth in the National Environmental Policy Act (NEPA) of 1969, as amended.

The 2012 bridge inspection report for Bridge No. 73 indicates that the bridge is in poor condition with a sufficiency rating of 29 out of 100 and a status of structurally deficient. The 2013 bridge inspection report for Bridge No. 96 indicates that the bridge is in good condition with a sufficiency rating of 47 out of 100, but has a status of functionally obsolete.

Replacement of Bridge No. 73, also known as the Earl C. Davis Memorial Bridge, entails removal of the existing moveable swing span bridge and replacement of Bridge No. 96 entails the removal of the existing fixed span bridge. Together these bridges provide the only vehicular access across The Straits waterway to Harkers Island. Both bridges are proposed to be replaced with either one or two fixed span bridge(s). The project location is shown on Figure 1 and the study area is shown on Figure 2. All figures are included in Appendix A.

1.3 Merger Process History (Concurrence Point 1)

On February 18, 2016, the NEPA/404 Merger Team met to discuss concurrence on Purpose and Need and Study Area Defined for the referenced project – Concurrence Point 1 (CP 1). During the meeting, existing conditions, the project study area, the project's need, and the project's purpose were presented. Subsequent to the presentation and discussions, the NEPA/404 Merger Team reached a consensus and signed the formal Concurrence Point 1 Agreement – Purpose and Need and Study Area Defined. Under this agreement, the purpose and need of the project was defined as follows:

Purpose of Proposed Action

- Improve bridge safety and functionality

Need for Proposed Action

- Structurally deficient, functionally obsolete bridges

Study Area Defined

- The study area is as shown on Figure 2 (see Appendix A).

1.4 Public Involvement Leading-Up to Concurrence Point 2

The first public outreach step was conducted on March 14, 2016 with a Local Officials Meeting followed by the first Public Meeting (PM #1). Forms of communication announcing PM #1 included the NCDOT public meetings website, a newsletter that was mailed to over 1,230 addresses, as well as media announcements.

The PM #1 was held at the Core Sound Waterfowl Museum on Harkers Island. Upon arrival, attendees were directed to a voice-over PowerPoint presentation that repeated every ten minutes. The PowerPoint station was followed by a series of maps displayed on tables showing the four functional design alternatives. The maps included both plan views and artistic renderings of profile views.

Over 60 citizens attended PM #1, from which over 25 questionnaire / comment cards were collected. An additional 25 citizens sent their comments via phone calls, email, or regular mail after the meeting. A summary of the comments and a copy of the newsletter announcing Public Meeting #1 are included in Appendix B of this document.

2.0 EXISTING ENVIRONMENTAL CONDITIONS

2.1 Historic Properties

An April 2009 scoping response letter from the NC State Historic Preservation Office (SHPO) indicated that Archaeological Site 31CR76 is located at the northern end of Bridge No. 73, at the mainland landing. The letter recommended relocation and assessment of the site prior to any ground-disturbing activities. An archaeological survey and evaluation was submitted to SHPO in January 2012. The survey found that Site 31CR76 is a subsurface prehistoric-historic multi-component archaeological site that appears to have some semblance of site integrity and has already demonstrated significant data returns; however, due to the number of modern and past disturbances in the project's Area of Potential Effects (APE) and the relatively large artifact assemblage collected during the site investigation, the evaluation concluded that additional excavations within the APE would be unlikely to produce significant data sets. Therefore, the portion of the site contained within the project's APE was recommended as not eligible for listing on the National Register of Historic Places (NRHP). Avoidance of this archaeological resource was recommended.

No structures of historical or architectural importance were identified within the project study area.

2.2 Natural Resources & Environmental Features

A Natural Resources Technical Report (NRTR) was prepared by NCDOT in April 2011. The following is a summary of the findings of this report.

One water resource, The Straits, was identified in the study area. The Straits has been designated as a tidal salt water for shellfishing for market purposes (SA classification). In addition, The Straits has been designated as a High Quality Water (HQW). The NC Division of Marine Fisheries has requested an in-water work moratorium from April 1st through September 31st. Two types of jurisdictional wetlands, tidal and riparian, were identified within the study area.

Two different types of Coastal Area Management Act (CAMA) Areas of Environmental Concern (AEC), Public Trust Water and CAMA coastal marsh wetlands, were identified in the study area. The Straits is a designated Public Trust Water with CAMA coastal marsh present at twelve (12) different wetland sites. A CAMA permit from the NC Division of Coastal Management will be required for all impacts to designated AEC's within the study area.

Thirteen federally protected species were identified for Carteret County (Table 1). The biological conclusions for eight out of these thirteen species were categorized as not required, no effect, or may affect – not likely to adversely affect. The biological conclusions for the five species of sea turtles are unresolved. Due to lack of nesting habitat, the biological conclusion for each of these species is no effect as far as the U.S. Fish and Wildlife Service (USFWS) is concerned. NCDOT is coordinating with the NC Department of Marine Fisheries to determine the biological conclusion from an aquatic viewpoint.

It should be noted that Submerged Aquatic Vegetation (SAV) habitat could be located in the Straits. However, no SAV surveys for this project have been completed at this time.

Table 1: Federally Protected Species Listed for Carteret County

Scientific Name	Common Name	Federal Status	Habitat Present	Biological Conclusion
<i>Alligator mississippiensis</i>	American alligator	T (S/A)	Yes	Not required
<i>Chelonia mydas</i>	Green sea turtle	T	Yes	Unresolved
<i>Eretmochelys imbricata</i>	Hawksbill sea turtle	E	Yes	Unresolved
<i>Lepidochelys kempii</i>	Kemp's ridley sea turtle	E	Yes	Unresolved
<i>Dermochelys coriacea</i>	Leatherback sea turtle	E	Yes	Unresolved
<i>Caretta caretta</i>	Loggerhead sea turtle	T	Yes	Unresolved
<i>Charadrius melodus</i>	Piping plover	T	No	No Effect
<i>Picoides borealis</i>	Red cockaded woodpecker	E	No	No Effect
<i>Sterna dougallii dougallii</i>	Roseate tern	T	No	No Effect
<i>Acipenser brevirostrum</i>	Shortnose sturgeon	E	Yes	No Effect
<i>Trichechus manatus</i>	West Indian manatee	E	Yes	MA-NLAA
<i>Lysimachia asperulasfolia</i>	Rough-leaved loosestrife	E	No	No Effect
<i>Amaranthus pumilus</i>	Seabeach amaranth	T	No	No Effect

E – Endangered; T – Threatened; T(S/A) – Threatened due to similarity of appearance; MA-NLAA – May Affect – Not Likely to Adversely Affect

2.3 Community Facilities

Community facilities in and around the project study area are shown on Figure 3. Notable facilities within the project study area include a state-owned NC Wildlife Resources Commission (NCWRC) boating access, the Straits public fishing pier (owned by the state and maintained by Carteret County), and a Carteret County public beach access. This project is now state funded – Section 4(f) is no longer applicable.

2.4 Land Use

Current land uses in the project area consist primarily of residential development. Businesses on the island are small and cater to vacation and recreational related activities. Major industries on the island include fishing, boat building/repair, and tourism. Tourist attractions on the island include the Core Sound Waterfowl Museum and the Cape Lookout National Seashore Park, both located at the eastern end of the island. Daily ferry service from the east end of Harkers Island is a principal means of tourist access to Cape Lookout and Shackleford Banks.

3.0 CONCURRENCE POINT 2 STUDY ALTERNATIVES

3.1 No Build Alternative

Under the No Build Alternative, the existing bridges would remain in place. It is expected that within a few years the movable sections of Bridge No. 73 (the swing span bridge) will be in disrepair, resulting in closure of the crossing location. This alternative would result in no new construction costs; no impacts to streams, wetlands or other natural or cultural resources; and no residential or business relocations. However, this alternative would result in increased maintenance costs for a period of a few years prior to complete bridge closure. The eventual closure would result in complete loss of vehicular access to and from Harkers Island, which would have significant impacts to the local economy and the safety of Harkers Island residents. **The No Build Alternative would not meet the purpose of the proposed project to improve bridge safety or functionality.** The No Build Alternative provides a basis for comparing the adverse impacts and benefits of the study alternatives.

3.2 Non-Traditional Alternatives

Improve Existing Facility and Rehabilitation of Existing Bridges – The possibility exists that the swing bridge span and supports of Bridge No. 73, as well as the concrete span and supports of Bridge No. 96, could be rehabilitated to extend the life of the existing bridges; however, rehabilitation would require a temporary detour to be constructed while the existing bridges are rehabilitated. The rehabilitation and temporary detour would result in significant costs and significant impacts to the adjacent properties. In addition, NCDOT is no longer designing swing span structures due to the high long-term maintenance costs. **These costs and impacts would be incurred without meeting the purpose to improve the safety or functionality of the existing bridge crossing.**

Alternative Modes of Travel – Any transit service between the mainland and the island would require bridge replacements, leading to the same purpose and need for the project as stated above. A ferry system in lieu of a bridge crossing would be impractical given the volume of traffic crossing the bridges. In addition, a ferry system would not provide adequate access in the event of a hurricane evacuation. **A ferry system would not meet the purpose of the project to improve the safety or functionality of the existing bridge crossing.**

Traffic Management – No traffic management alternatives exist that would reduce the volume of traffic to a level where a bridge crossing is not required.

3.3 Build Alternatives

Design Criteria – The build alternatives were developed using AASHTO and NCDOT guidelines for a major collector facility using a 50 mph design speed. The centerlines are shown on Figure 3. Two 12-foot lanes, one in each direction, will be provided with four-foot paved shoulders on each side. Typical sections are presented on Figure 4.

Navigational Clearance – A vessel height survey (*TIP Project B-4863 Vessel Height Survey Report*, September 2015) was conducted for B-4863 to obtain height and frequency information for vessels passing through the existing swing span bridge (Bridge No. 73). During the 30-day survey over a 6-month period between May and October 2014, a total of 1,765 vessels were observed, with an average of 3.4 vessels per day requiring an average of 2.9 bridge openings per

day. Most vessels traveling beneath the Harkers Island Bridge are for recreational use (96.1%) and 99.9% of the vessels observed were 40 feet in height or less. Based on the results of the vessel height survey, NCDOT is recommending 45 feet of vertical navigational clearance (VNC) for the new bridge. NCDOT is coordinating with the US Coast Guard and approval of the 45-foot VNC is pending.

Alternatives Presented at Public Meeting #1 – Four preliminary study alternatives have been developed by the project team and presented to the public, as shown on Figure 3 and described below:

- **Alternative 1** – Two new fixed span bridges, each located to the west of the existing bridges, with 45-foot VNC at Bridge No. 73
- **Alternative 2** – Two new fixed span bridges, one located to the east of Bridge No. 96 and one located to the west of Bridge No. 73, with 45-foot VNC at Bridge No. 73
- **Alternative 3** – Two new fixed span bridges, each located to the east of the existing bridges, with 45-foot VNC at Bridge No. 73
- **Alternative 4** – One new fixed span bridge, located to the east of the existing bridges, with 45-foot VNC at Bridge No. 73

4.0 ALTERNATIVES SCREENING

4.1 Preliminary Impacts and Costs

A preliminary impact analysis has been prepared for each of the four alternatives. Impacts to the human environment for each alternative are shown on Figures 5 through 8 and listed in Table 2. Impacts to the natural environment for each alternative are shown on Figures 9 through 12 and listed in Table 3. Wetland impact area calculations have assumed a 25' construction buffer from the proposed roadway footprint (slope stakes). During final designs, it is expected that these buffer areas can be reduced, resulting in smaller impact areas than those provided herein.

Table 2: Preliminary Impacts to Community Resources

Alternative No.	Impacts to Carteret County Beach (acres)	Impacts to Straits Fishing Pier (acres)	Impacts to NCWRC Boat Ramp (acres)
Alt 1	0.64	0.11	0.36
Alt 2	0.64	0.40	0.06
Alt 3	0.29	1.13	0.05
Alt 4	0.20	1.05	0.05

Note: Impacts based on preliminary right of way for each alternative.

Table 3: Preliminary Impacts to Jurisdictional Resources

Alternative No.	Riparian Wetland Impacts (acres)	CAMA Wetland Impacts (acres)			Total Wetland Impacts (acres)
	WA*	WB*	WC*	WD*	
Alt 1	0.06	0.12	0.63	0.23	1.04
Alt 2	-	0.07	0.31	0.23	0.61
Alt 3	0.08	0.05	0.23	0.91	1.27
Alt 4	0.06	0.05	-	0.75	0.86

*See Figure 2 for wetland locations and names.

Note: Impacts based on slope stakes plus 25 feet.

4.2 Community Input

As previously mentioned, over 50 PM #1 questionnaire responses were received. These responses have been summarized and are included in Appendix B. These results can be seen in Table 4.

Table 4: Public Preferences for Alternatives

Alternative No.	Best Option (46 responses)	Worst Option (47 responses)
Alt 1	0% (0)	43% (20)
Alt 2	0% (0)	34% (16)
Alt 3	50% (23)	6% (3)
Alt 4	50% (23)	17% (8)

In addition, the Carteret County Board of Commissioners has expressed their support of Alternative 4. A letter stating this support is also included in Appendix B.

4.3 Alternative Comparison

A summary comparison of the four alternatives is shown in Table 5 on the following page.

Table 5: Functional Design Alternatives Comparison Matrix

Category	Alt 1	Alt 2	Alt 3	Alt 4
Project Description				
Project Length (miles)	0.85	0.85	0.89	0.85
Bridge Length (Bridge No. 73/96 in feet)	2,030/760	1,880/790	1,550/800	3,020
Human Environment Impacts				
Community Facilities Impacted (number)	3	3	2	2
Carteret County Beach	Medium	Medium	None	None
Straits Fishing Pier	High	High	High	High
NCWRC Boat Ramp	High	Low	Medium	Medium
Total Residential Relocations (number)	0	0	0	0
Total Business Relocations (number)	0	0	0	0
Property Only (number)	9	9	12	10
Archeological Sites (number)	1	1	1	1
Natural/Physical Environment Impacts				
Wetlands: CAMA/Riparian (acres)	0.98/0.06	0.61/0.00	1.19/0.08	0.80/0.06
Straits Stream Crossings (Bridge No. 73/96 in feet)	1,500/650	1,400/550	1,400/600	1,400/850
Public Feedback (from Public Meeting #1)				
Public Preference for Best Option	0%	0%	50%	50%
Costs				
Right-of-Way Costs	\$1,298,000	\$1,303,000	\$1,444,000	\$1,245,000
Utility Costs	\$191,000	\$191,000	\$203,000	\$203,000
Construction Costs	\$29,800,000	\$29,000,000	\$27,500,000	\$32,300,000
Total Costs	\$31,289,000	\$30,494,000	\$29,147,000	\$33,748,000
Miscellaneous*				
Constructability Concerns	Medium	High	Medium	Medium
Splash Zone Concerns	High	High	High	Low
Evacuation/Flooding Concerns (potential for issue on center island)	High	High	High	None
Utility Impacts (no. of poles impacted)	5	5	6	6
Represents alternative with least impacts/costs in each category				
Represents alternative with highest impacts/costs in each category				

*Impacts shown for miscellaneous categories are qualitative based on known issues/challenges.

Notes: 1) No impacts to non-riparian wetlands, historic sites, superfund sites, or ponds are expected. Therefore, these impact categories are not provided.

2) Impacts are based on functional design right-of-way, slope stakes, and easement limits.

4.4 Recommended Detailed Study Alternatives

Based on the alternatives impacts/costs analysis, and feedback from the citizens, Alternatives 3 and 4 have manageable impacts/costs and are supported by project stakeholders.

NCDOT is requesting concurrence from the NEPA/404 Merger Team to eliminate Alternatives 1 and 2, and to carry forward Alternatives 3 and 4. A listing of each of the study alternatives and reasons for eliminating or carrying forward are provided below.

- **Alternative 1 – Reasons to Eliminate:**
 - Minimal Support - 0% of respondents chose this as the best alternative; 43% of respondents chose this as the worst alternative.
 - Impacts to all three community facilities (Harkers Island Beach Access, Straits Fishing Pier, and Straits Boat Landing Area).
 - Higher functional design costs (2nd highest)
 - Higher splash zone concerns
- **Alternative 2 – Reasons to Eliminate:**
 - Minimal Support - 0% of respondents chose this as the best alternative; 34% of respondents chose this as the worst alternative.
 - Impacts to all three community facilities (Harkers Island Beach Access, Straits Fishing Pier, and Straits Boat Landing Area).
 - Higher constructability concerns
 - Higher splash zone concerns
- **Alternative 3 – Reasons to Carry Forward:**
 - High Support - 50% of respondents chose this as the best alternative; only 6% of respondents chose this as the worst alternative.
 - Lower impacts to community facilities.
 - Lowest expected cost and shortest bridge alternative.
- **Alternative 4 – Reasons to Carry Forward:**
 - High Support - 50% of respondents chose this as the best alternative; only 17% of respondents chose this as the worst alternative. Local officials prefer this alternative.
 - Lower impacts to community facilities.
 - Lower splash zone concerns, resulting in potentially lower maintenance costs.

5.0 PROJECT SCHEDULE

The proposed project schedule is as follows:

- Selection of LEDPA (CP 3) – Fall 2016
- State EA/FONSI – Spring 2017
- Right-of-Way – Fall 2017
- Construction – 2019

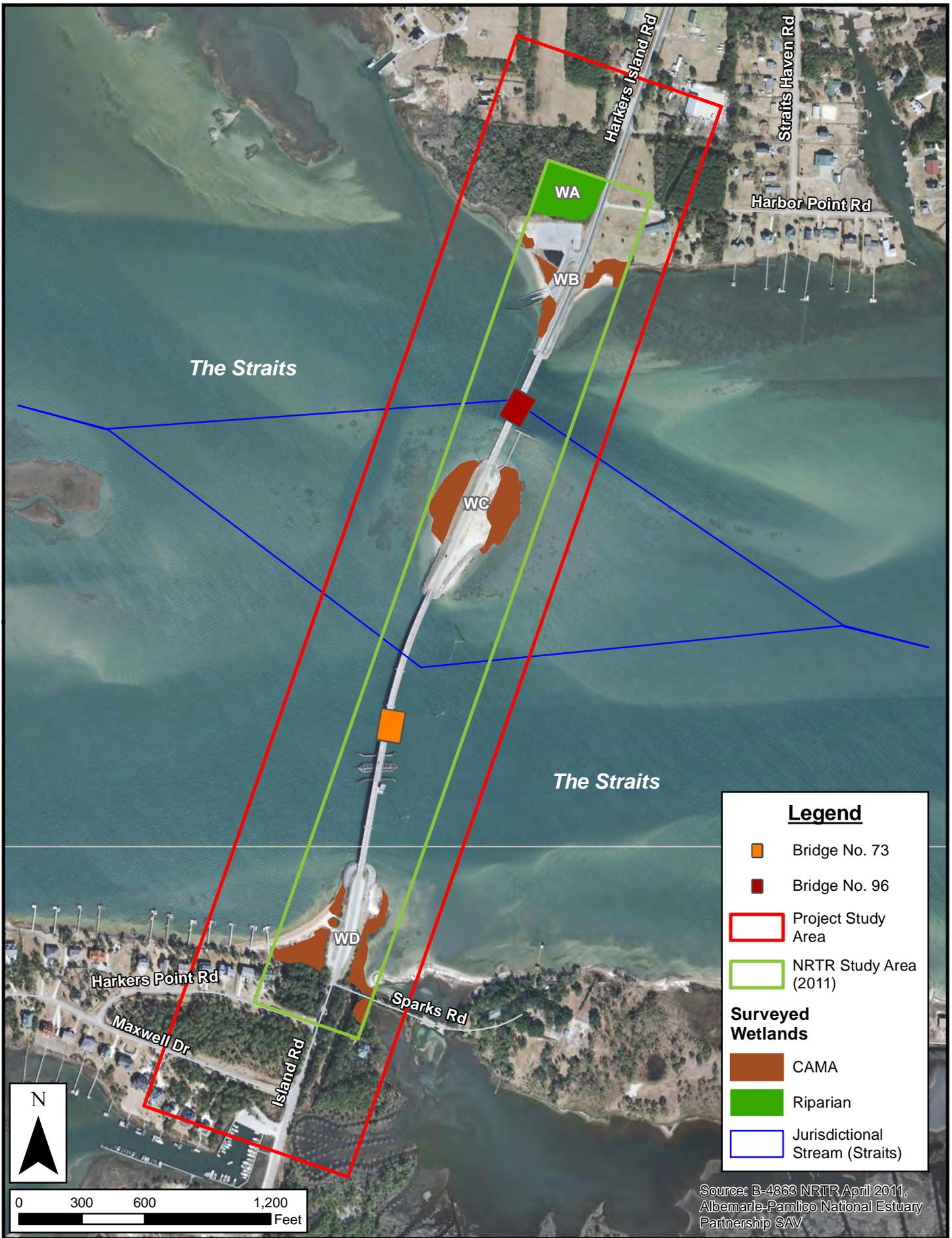
**Appendix A
Figures**



Harkers Island Bridge Replacements Project
 Bridge No. 73 and No. 96 over
 The Straits - SR 1335

TIP No. B-4863
 Division: 2

Figure 1:
 Vicinity Map
 June 2016



Legend

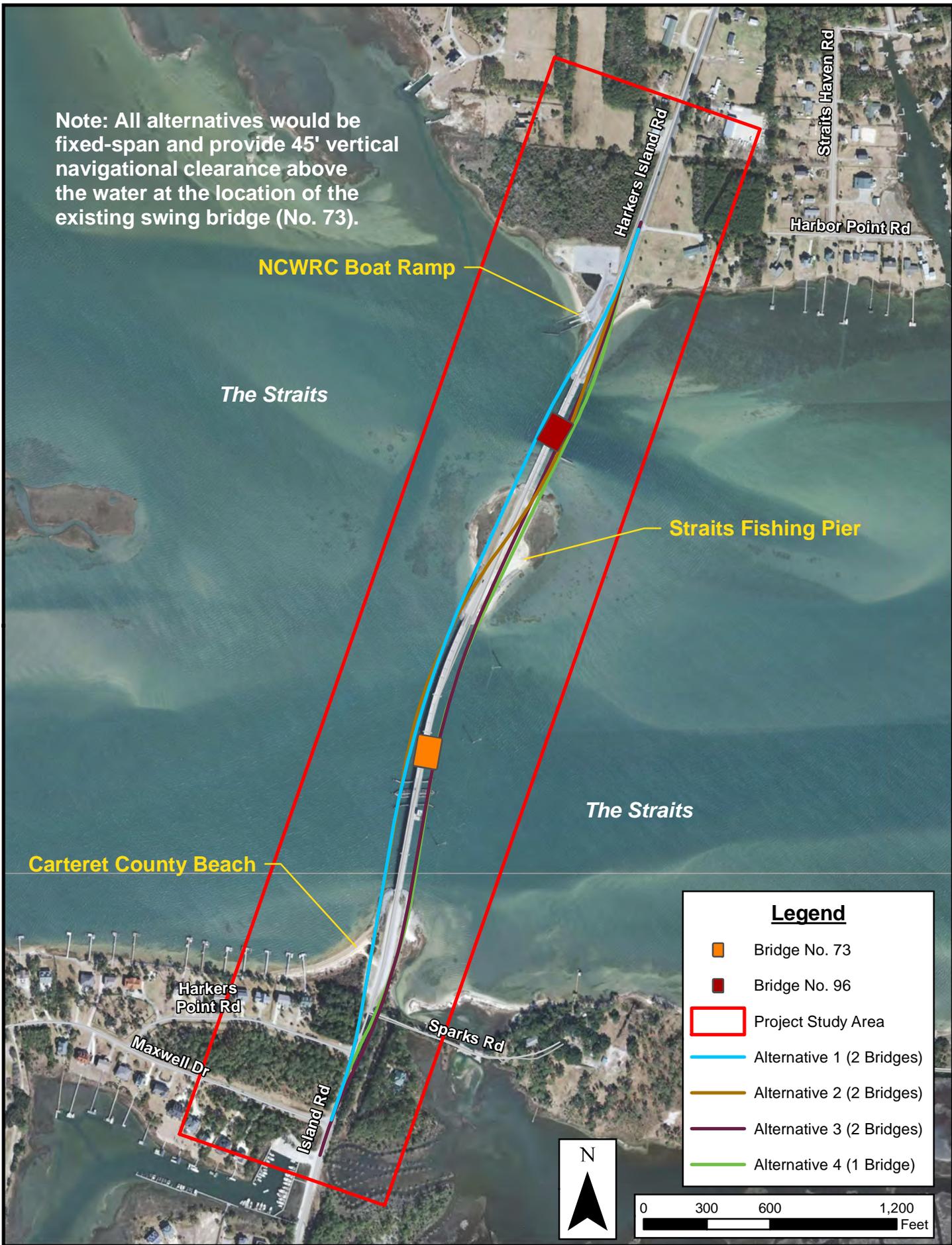
- Bridge No. 73
- Bridge No. 96
- Project Study Area
- NRTR Study Area (2011)

Surveyed Wetlands

- CAMA
- Riparian
- Jurisdictional Stream (Straits)

Source: B-4863 NRTR April 2011, Albemarle-Pamlico National Estuary Partnership SAV

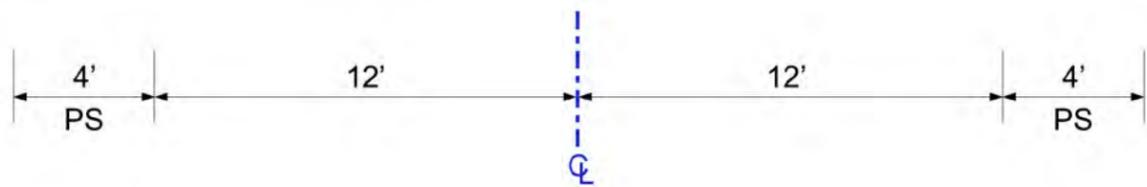
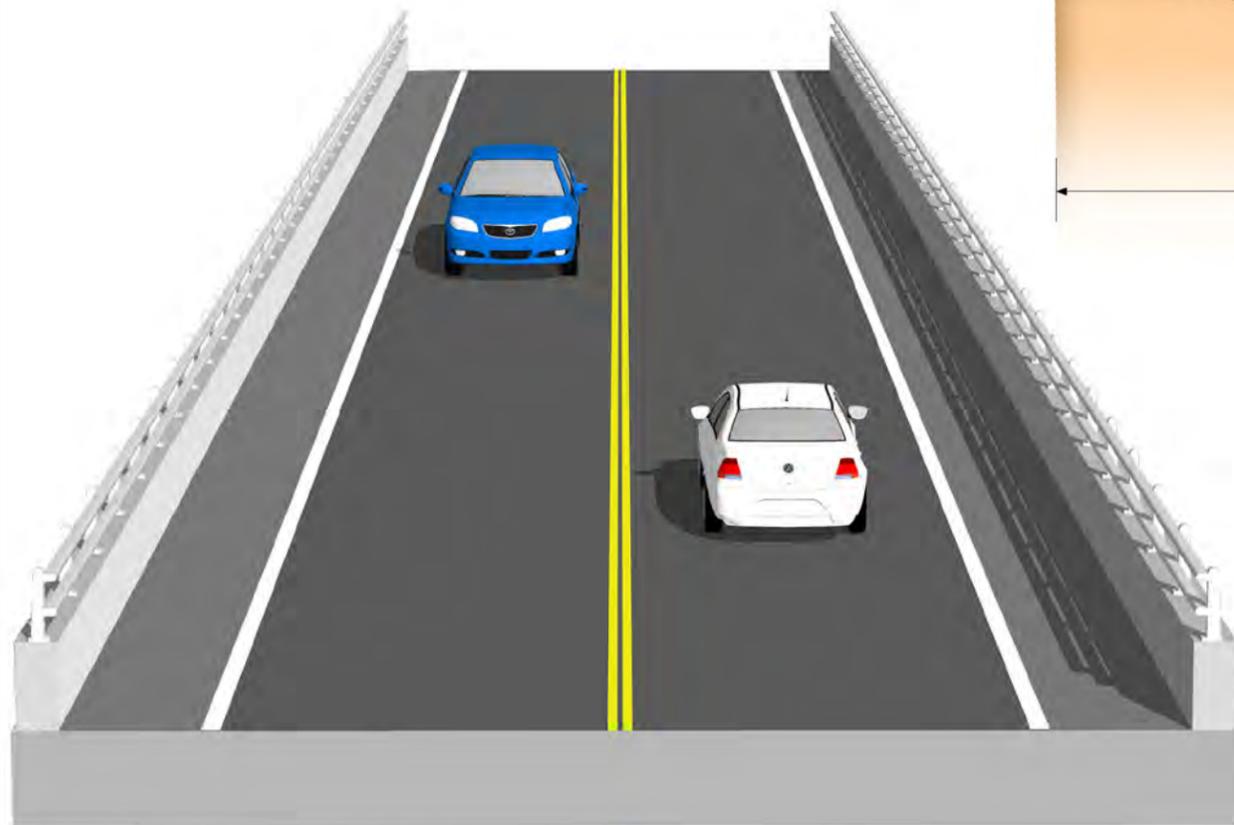
Note: All alternatives would be fixed-span and provide 45' vertical navigational clearance above the water at the location of the existing swing bridge (No. 73).



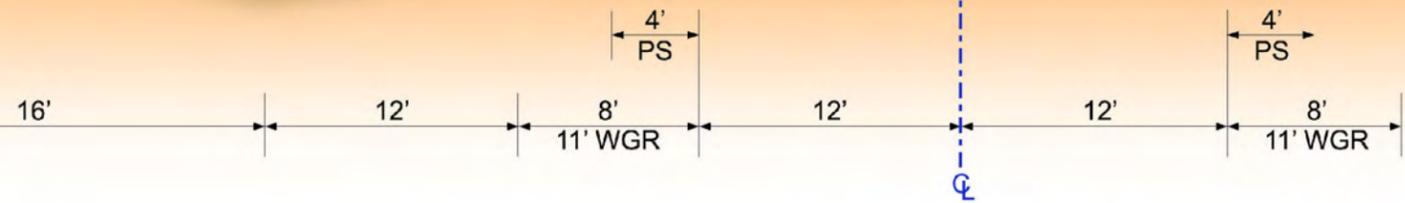
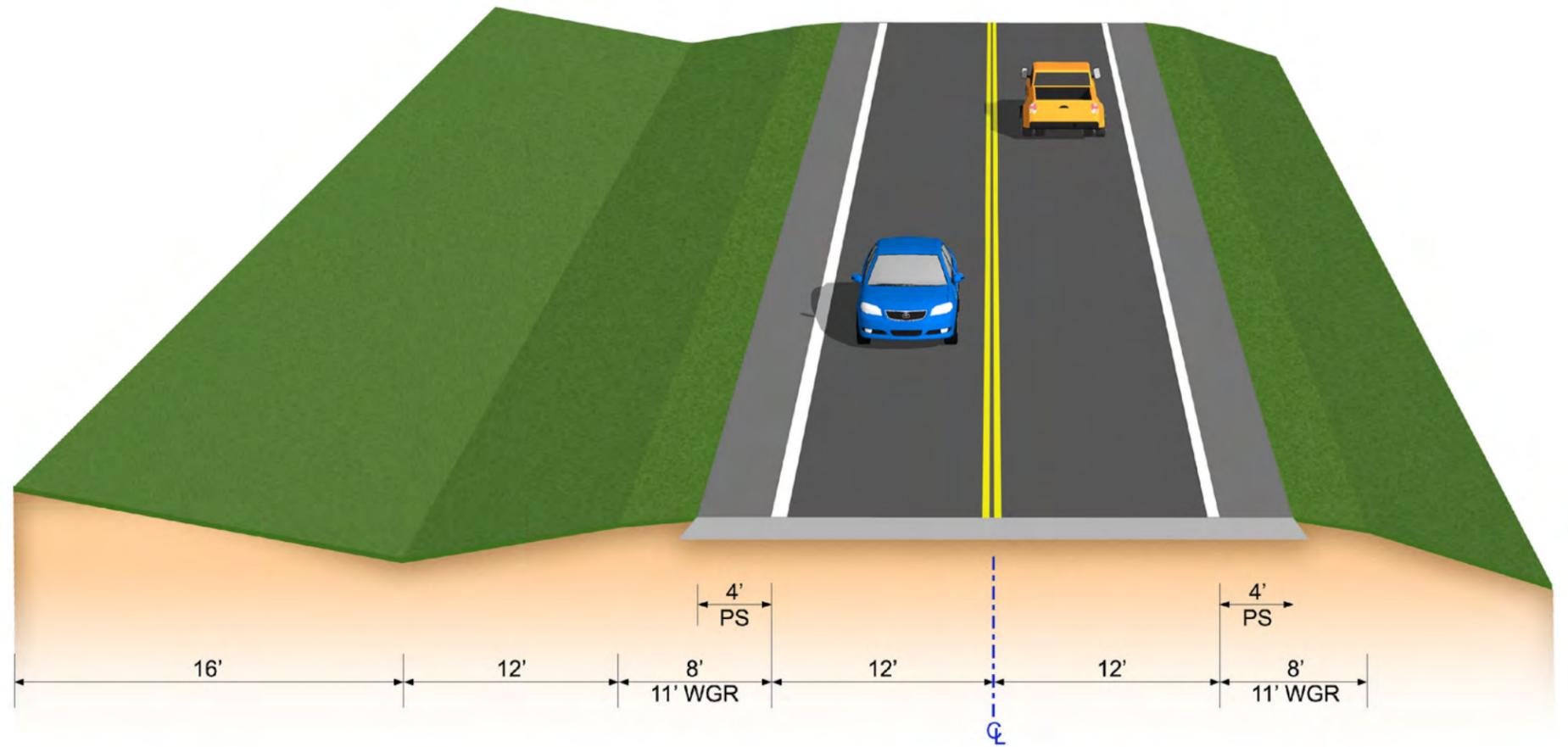
Harkers Island Bridge Replacements Project
 Bridge No. 73 and No. 96 over
 The Straits - SR 1335

TIP No. B-4863
 Division: 2

Figure 3:
 Alternatives
 June 2016



Bridge Typical Section



Roadway Typical Section

Typical Sections		
		
<p>Harkers Island Bridge Replacements Project TIP No: B-4863 Bridge No. 73 and No. 96 over The Straits - SR 1335</p>		<p>Figure 4 June 2016</p>



NCWRC Boat Ramp
Impacts - 0.36 ac

End Bridge
Sta. 48 + 75.00

The Straits

Straits Fishing Pier
Impacts - 0.11 ac

Begin Bridge
Sta. 41 + 15.00

End Bridge
Sta. 37 + 50.00

The Straits

County Beach Access
Impacts - 0.64 ac

Begin Bridge
Sta. 17 + 20.00

Legend

- Alternative 1
- Right-of-Way Alt 1
- - - Transmission Line
- Transmission Pole
- ▭ Recreational Resource
- ▭ Impacted Area

**Alternative 1
Affected Human Environment**



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Carteret County, Div 2

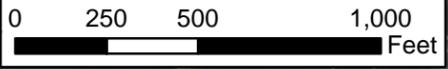
**Harkers Island Bridge
Replacements Project**

TIP No: B-4863

Bridge No. 73 and No. 96 over The Straits - SR 1335

Figure 5

June 2016





NCWRC Boat Ramp
Impacts - 0.06 ac

The Straits

End Bridge
Sta. 49 + 25.00

Straits Fishing Pier
Impacts - 0.40 ac

Begin Bridge
Sta. 41 + 35.00

End Bridge
Sta. 36 + 00.00

The Straits

County Beach Access
Impacts - 0.64 ac

Begin Bridge
Sta. 17 + 20.00

Legend

- Alternative 2
- Right-of-Way Alt 2
- Transmission Line
- Transmission Pole
- Recreational Resource
- Impacted Area

**Alternative 2
Affected Human Environment**

Carteret County, Div 2

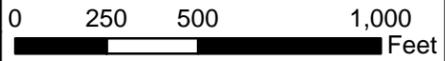
**Harkers Island Bridge
Replacements Project**

TIP No: B-4863

Bridge No. 73 and No. 96 over The Straits - SR 1335

Figure 6

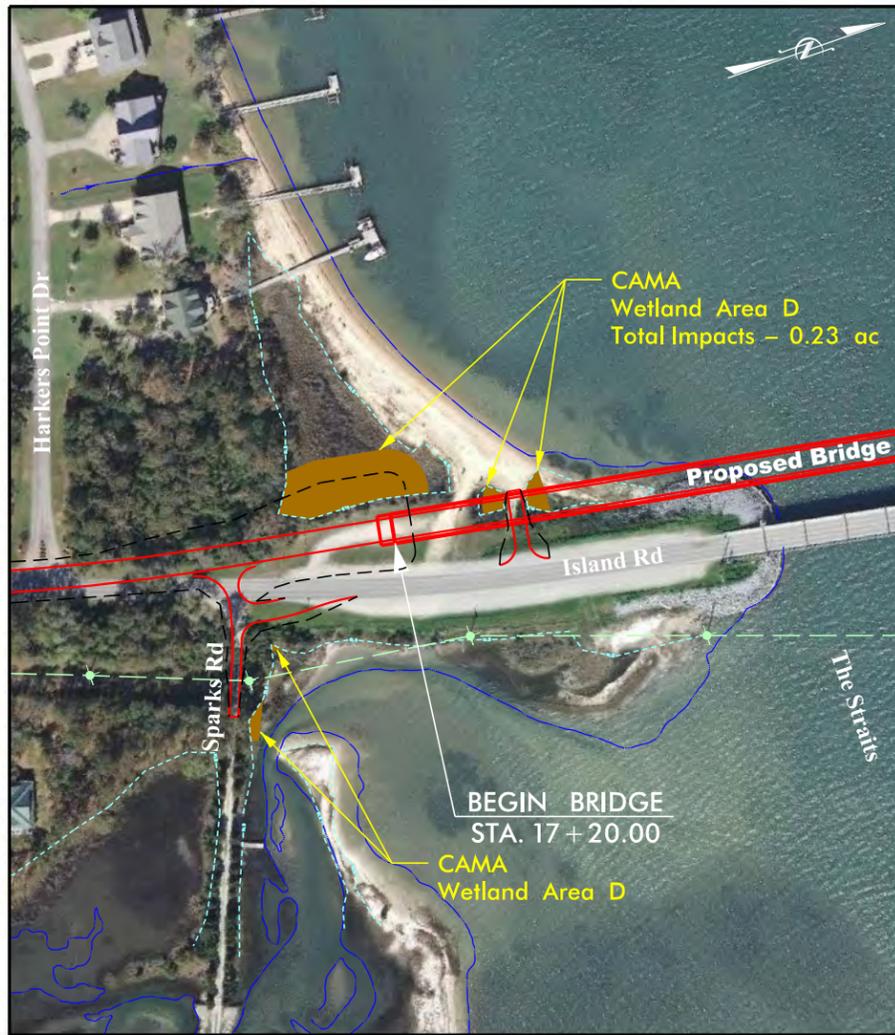
June 2016



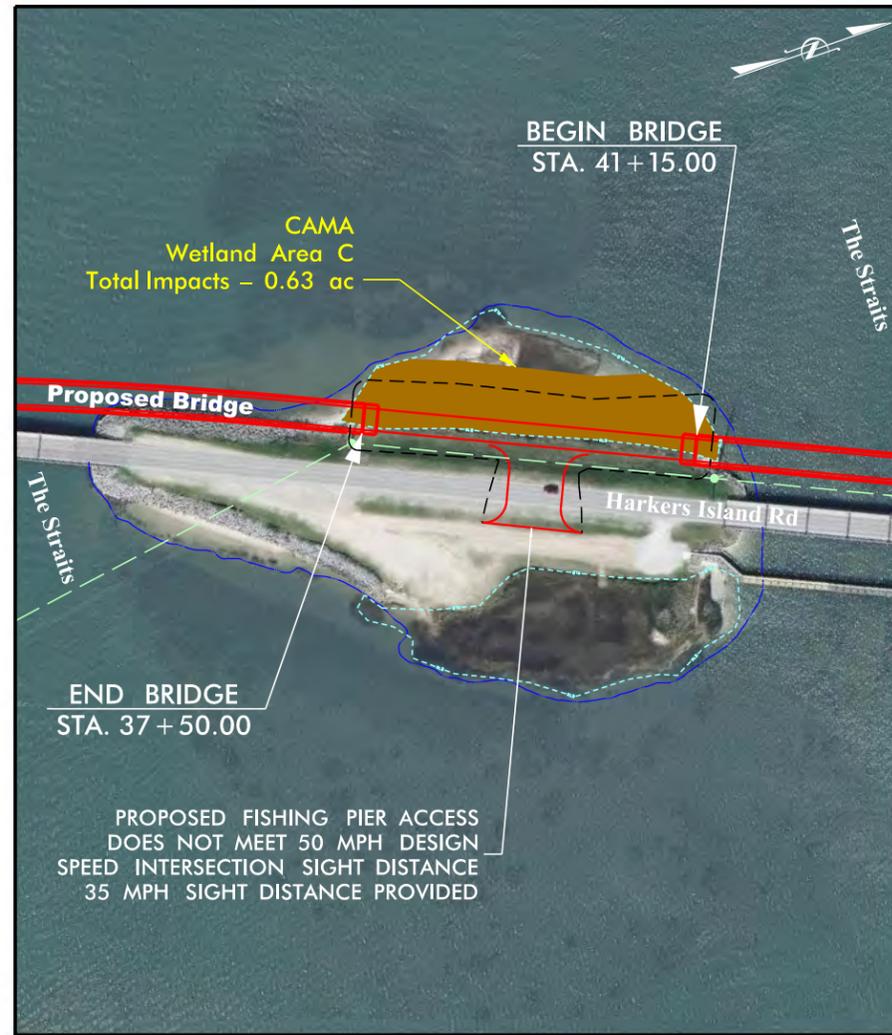




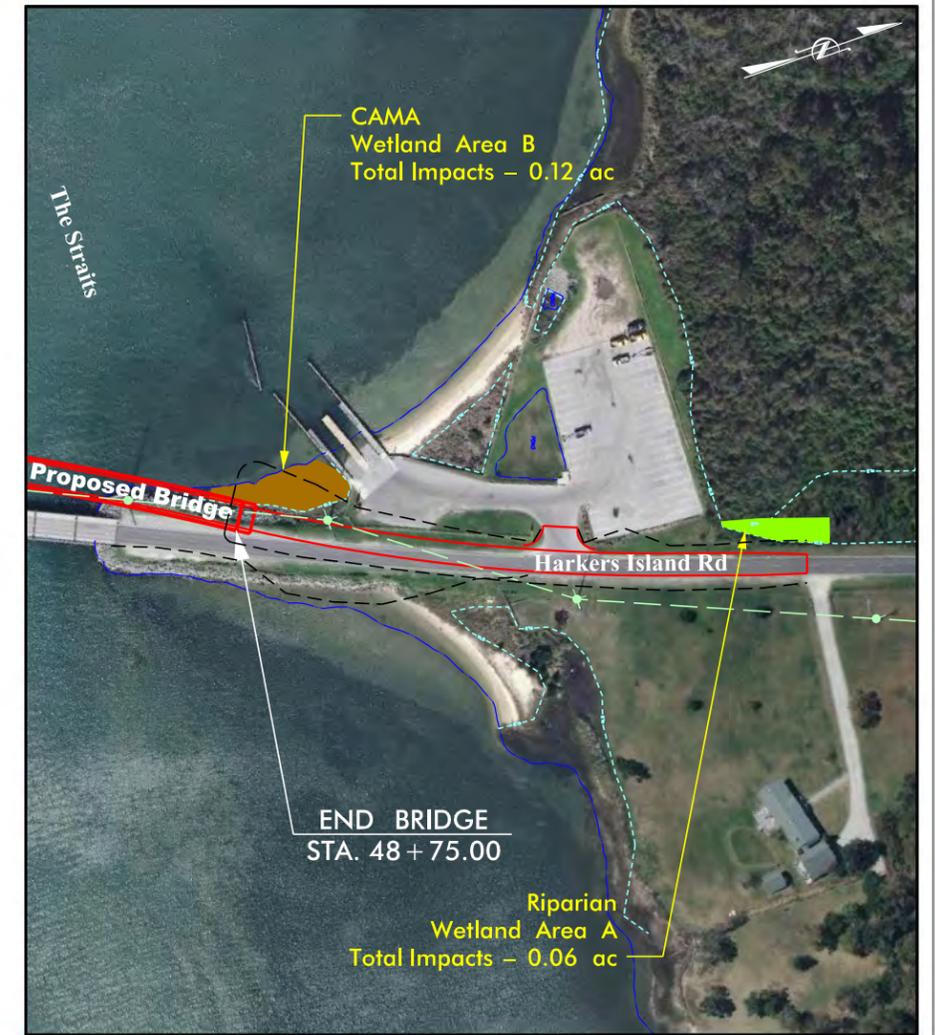
Alternative 4 Affected Human Environment		
		 Carteret County, Div 2
Harkers Island Bridge Replacements Project TIP No: B-4863 Bridge No. 73 and No. 96 over The Straits - SR 1335		Figure 8 June 2016



Island



Fishing Pier Island



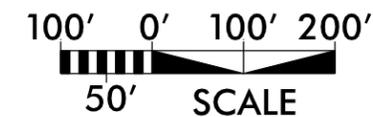
Mainland

Legend

	Riparian Wetland Impacts
	CAMA Wetland Impacts
	Temporary Widening Wetland Impacts
	Wetland Boundary
	Roadway Footprint (Slope Stakes)
	Overhead Power Distribution Line

Total Riparian Wetland Impacts = 0.06 acres
 Total CAMA Wetland Impacts = 0.98 acres

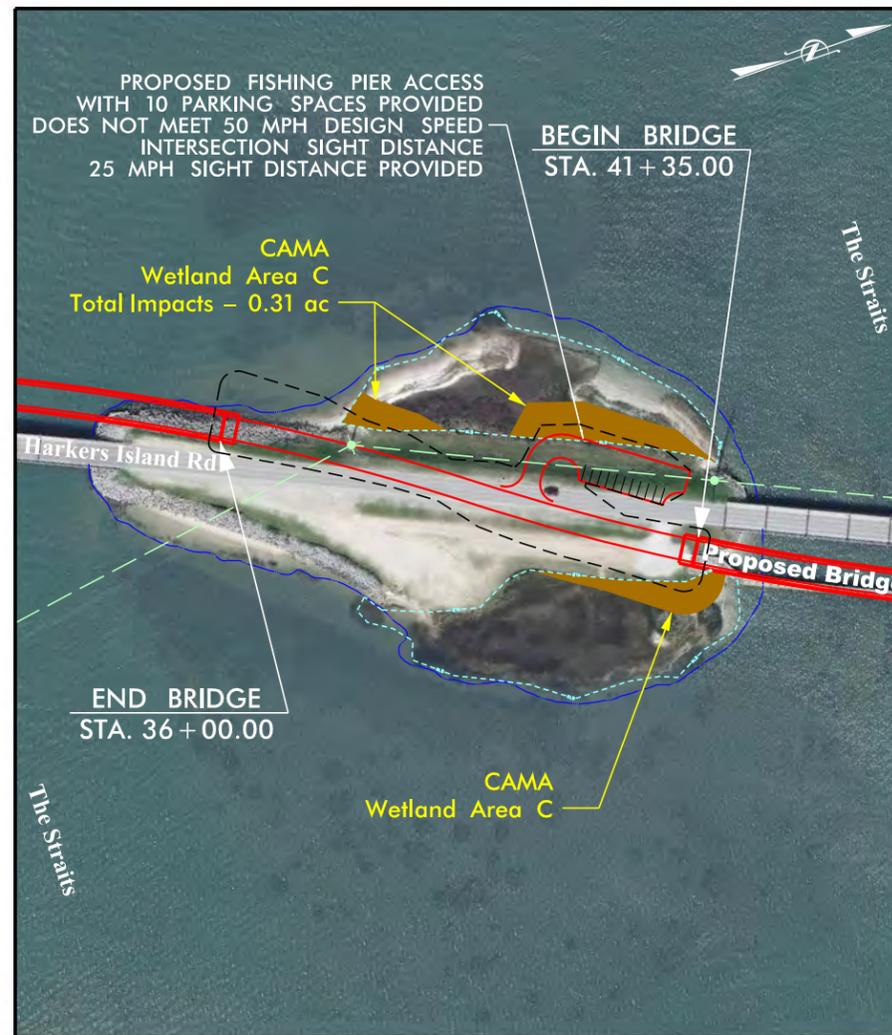
PRELIMINARY PLANS
 DO NOT USE FOR CONSTRUCTION



Alternative 1		
Affected Natural Environment		
Carteret County, Div. 2		
Harkers Island Bridge Replacements Project		Figure 9
TIP No: B - 4863		June 2016
Bridge No. 73 and No. 96 over The Straits - SR 1335		



Island



Fishing Pier Island



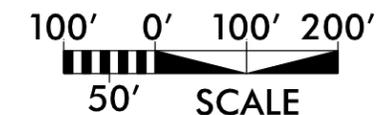
Mainland

Legend

- Riparian Wetland Impacts
- CAMA Wetland Impacts
- Temporary Widening Wetland Impacts
- Wetland Boundary
- Roadway Footprint (Slope Stakes)
- Overhead Power Distribution Line

Total Riparian Wetland Impacts = N/A
 Total CAMA Wetland Impacts = 0.61 acres

PRELIMINARY PLANS
 DO NOT USE FOR CONSTRUCTION



**Alternative 2
 Affected Natural Environment**



Harkers Island Bridge
 Replacements Project

TIP No: B - 4863

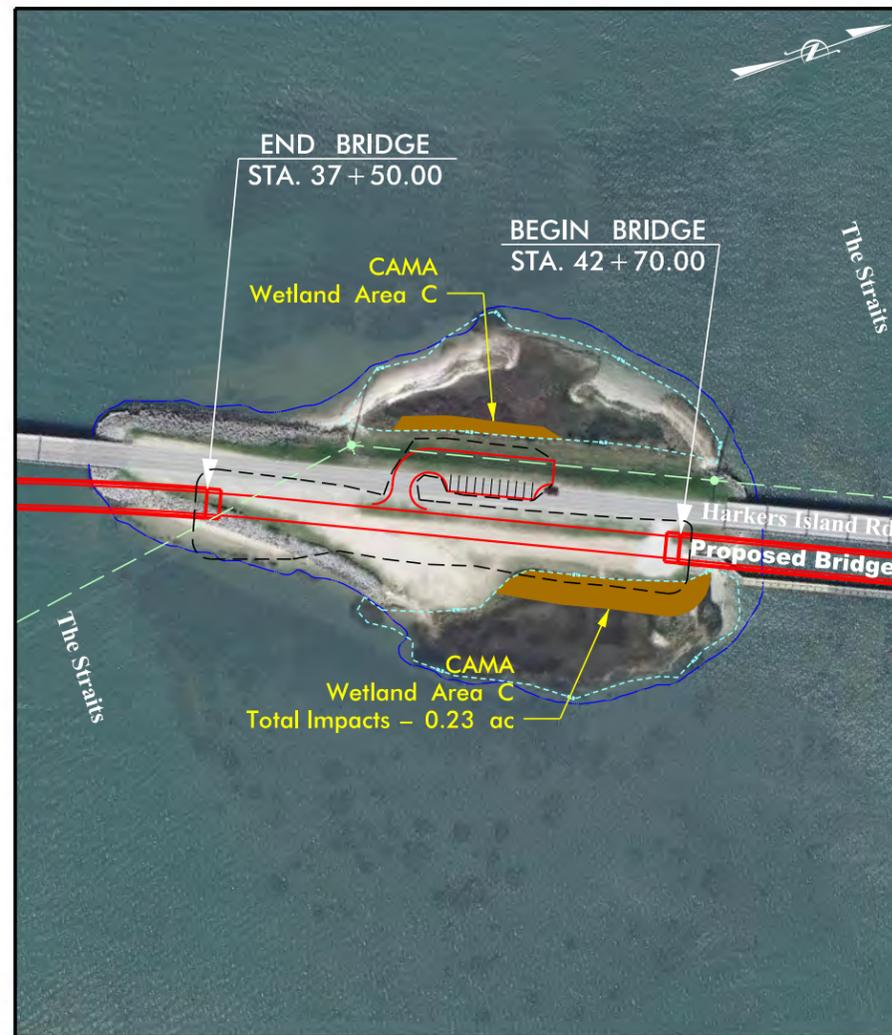
Bridge No. 73 and No. 96 over The Straits - SR 1335

Figure 10

June 2016



Island



Fishing Pier Island



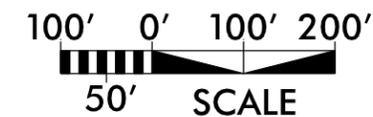
Mainland

Legend

- Riparian Wetland Impacts
- CAMA Wetland Impacts
- Temporary Widening Wetland Impacts
- Wetland Boundary
- Roadway Footprint (Slope Stakes)
- Overhead Power Distribution Line

Total Riparian Wetland Impacts = 0.08 acres
 Total CAMA Wetland Impacts = 1.19 acres

PRELIMINARY PLANS
 DO NOT USE FOR CONSTRUCTION



**Alternative 3
 Affected Natural Environment**



**Harkers Island Bridge
 Replacements Project**

TIP No: B - 4863

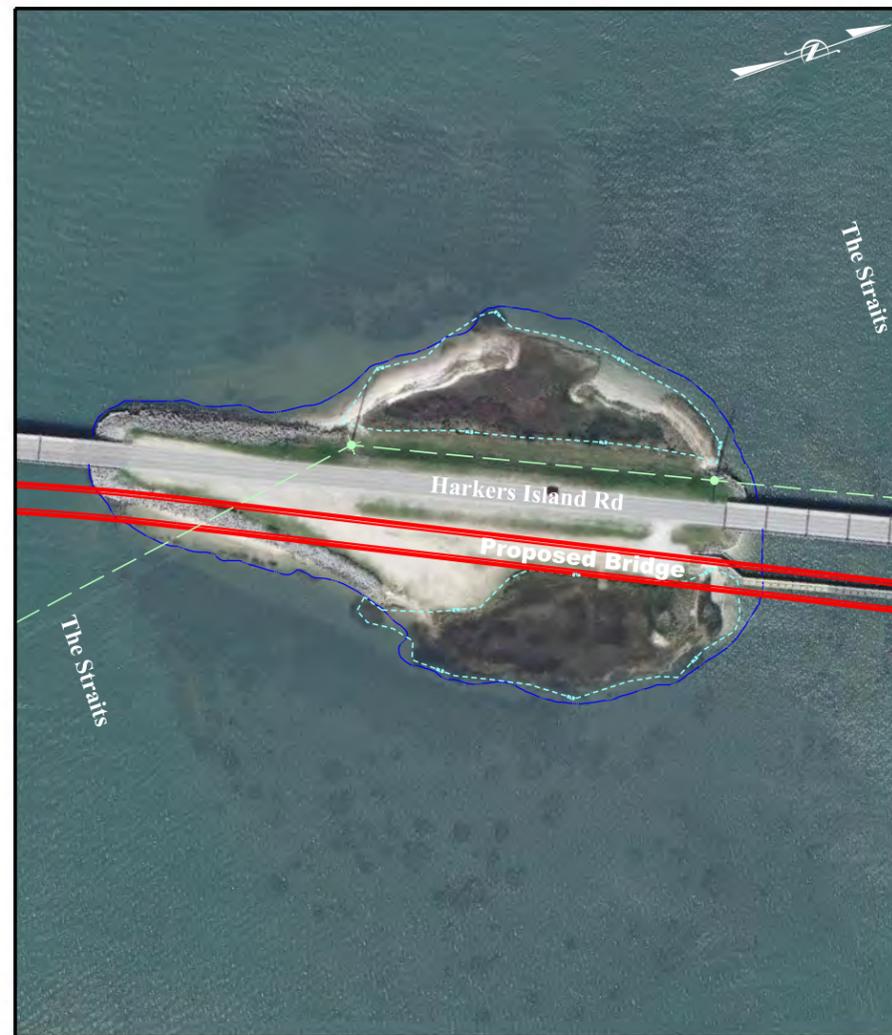
Bridge No. 73 and No. 96 over The Straits - SR 1335

Figure 11

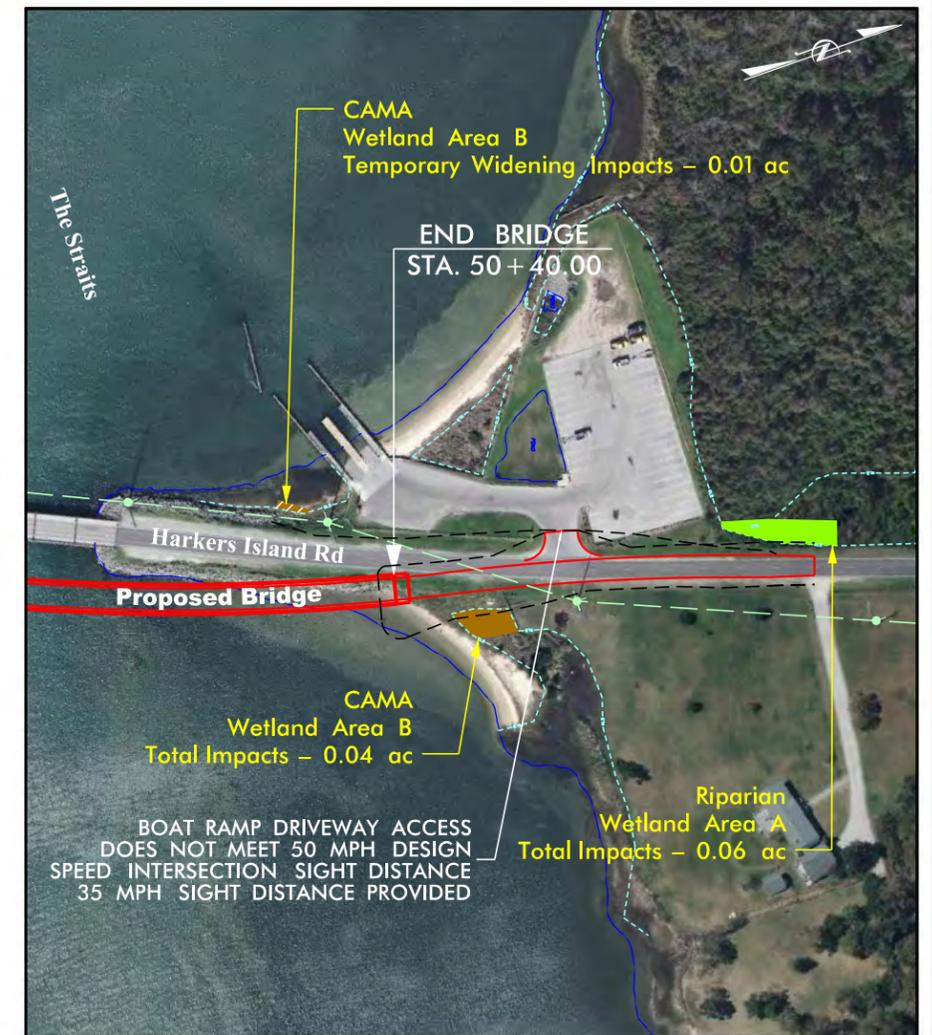
June 2016



Island



Fishing Pier Island



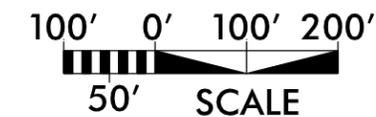
Mainland

Legend

- Riparian Wetland Impacts
- CAMA Wetland Impacts
- Temporary Widening Wetland Impacts
- Wetland Boundary
- Roadway Footprint (Slope Stakes)
- Overhead Power Distribution Line

Total Riparian Wetland Impacts = 0.06 acres
 Total CAMA Wetland Impacts = 0.80 acres

PRELIMINARY PLANS
 DO NOT USE FOR CONSTRUCTION



Alternative 4
Affected Natural Environment



Carteret County, Div. 2

Harkers Island Bridge
Replacements Project

TIP No: B - 4863

Bridge No. 73 and No. 96 over The Straits - SR 1335

Figure 12

June 2016

**Appendix B
Community Input Summary**



HARKERS ISLAND BRIDGE REPLACEMENTS PROJECT TEAM

(STIP No. B-4863)

1520 South Boulevard, Suite 200
Charlotte, NC 28203



HARKERS ISLAND

BRIDGE REPLACEMENTS PROJECT

Issue 1 - March 2016

STIP No. B-4863

PROJECT SCHEDULE

March 2016 //
Public Meeting

Fall 2016 // Selection of
Preferred Alternative

Spring 2017 //
Environmental Document
(Categorical Exclusion)
Complete

2017 // Right-of-Way
Acquisition Begins

2019 // Construction Begins

PROJECT OVERVIEW

The North Carolina Department of Transportation (NCDOT) proposes to replace the two bridges over The Straits on Harkers Island Road (SR 1332/1335) that provide access to Harkers Island. Currently, one bridge is fixed-span and one is a drawbridge.

PURPOSE AND NEED OF THE PROJECT

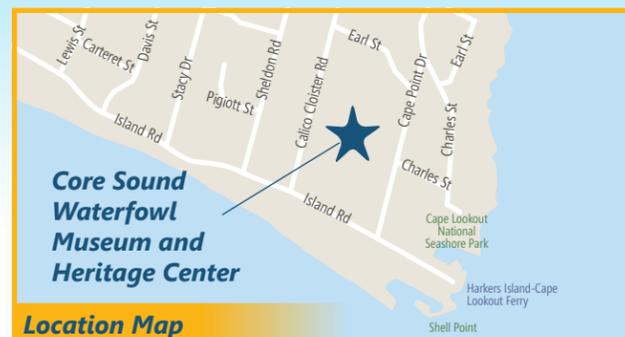
The existing bridges (No. 73 and 96) were built in the 1960's and 1970's and are due for replacement. The new bridge(s) will address the existing need to improve the structural integrity of the bridge and provide sufficient accommodation for emergency access and evacuation on Harkers Island Road.

PUBLIC MEETING

WHERE: Core Sound Waterfowl Museum
and Heritage Center
1785 Island Road Harkers Island, NC 28531

WHEN: Monday, March 14, 2016

TIME: 4 PM to 7 PM



CONTACT US

NCDOT is seeking your input! Comments are welcomed and may be submitted via mail or e-mail by March 28, 2016. Any questions can be submitted via telephone, mail, or e-mail to:

Michele James
NCDOT Project Development
1516 Mail Service Center,
Raleigh, North Carolina 27699-1516
E-mail: mjames@ncdot.gov
Phone: (919) 707-6027

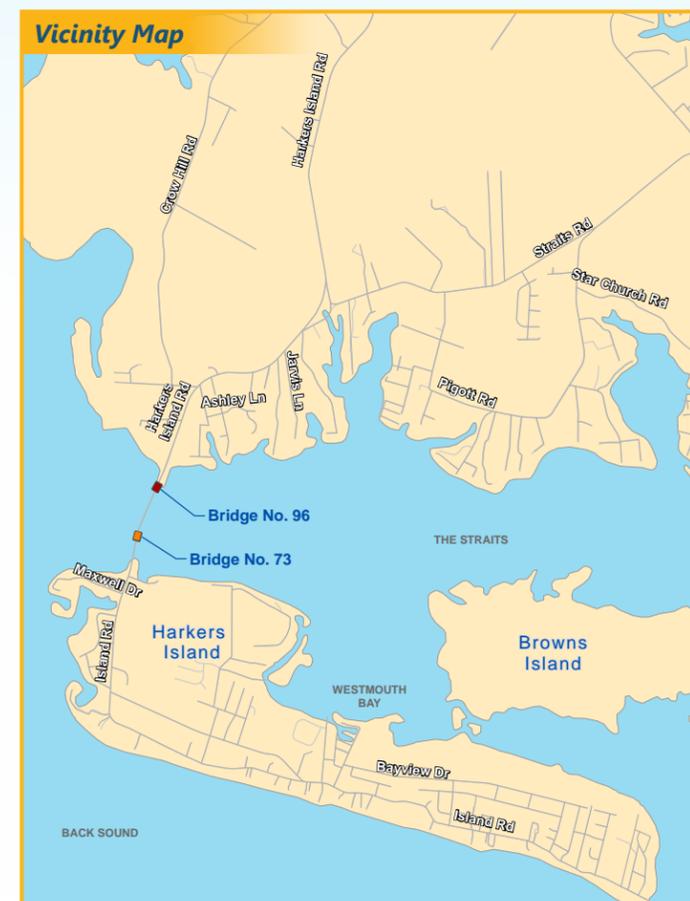
Edith Peters, PE
RS&H
1520 South Boulevard, Suite 200
Charlotte, North Carolina 28203
E-mail: edith.peters@rsandh.com
Phone: (704) 940-4712

In accordance with the Americans with Disabilities Act, NCDOT will provide auxiliary aids and services for disabled persons who wish to participate in this meeting. Persons requiring these services are requested to call Ms. Anamika Laad at (919) 707-6072 as early as possible so that arrangements can be made. Persons who speak Spanish and do not speak English, or have a limited ability to read, speak or understand English, may receive interpretive services upon request prior to the hearing by calling 1-800-481-6494.

1,400 copies of this public document were printed at a cost of \$1.07 each.

PUBLIC MEETING TO BE HELD

The NCDOT will hold a Public Meeting on March 14, 2016 between the hours of 4 and 7 PM at the Core Sound Waterfowl Museum and Heritage Center. The purpose of this meeting will be to listen to the community's issues, concerns, ideas and comments regarding the project and to introduce the NCDOT project team. The meeting will be an informal open house and citizens may drop in anytime during the meeting hours. The NCDOT project team will be available for questions, and detailed maps will be shown for the design alternatives. If you are unable to attend in person, information can be found online at <http://www.ncdot.gov/projects/publicmeetings/>.



Connecting people, products, and places safely and efficiently with customer focus, accountability and environmental sensitivity to enhance the economy and vitality of North Carolina.

STUDY ALTERNATES

Four alternates have been proposed. They are shown on the map as follows:

- **Alternate 1** – Two fixed bridges, each located to the west of the existing bridges, with 45-foot Vertical Navigational Clearance (VNC) at Bridge No. 73.
- **Alternate 2** – Two fixed bridges, one located to the east of Bridge No. 96 and one located to the west of Bridge No. 73, with 45-foot VNC at Bridge No. 73.
- **Alternate 3** – Two fixed bridges, each located to the east of the existing bridges, with 45-foot VNC at Bridge No. 73.
- **Alternate 4** – One fixed bridge, located to the east of the existing bridges, with 45-foot VNC at Bridge No. 73.

WE NEED YOUR INPUT

Your input on the following topics will help the NCDOT team as they move forward with project development:

- Frequency of driving on the existing bridges
- Frequency of boating in The Straits under the bridges
- Types of property you own or use on Harkers Island
- Locations of community amenities
- Ideas you have for the new bridges
- Questions you have about the project

Now is the time for you to talk with the planners and engineers responsible for the proposed replacement project you use every day. We encourage you to bring your ideas to the public meeting and we will have comment cards available for your use. Comments may be left at the workshop, mailed in, emailed, or called in by March 28, 2016.



WHAT'S NEXT?

After the meeting, the project team will review the comments received to determine the community's highest concerns, preferences, and ideas. These items will be taken into consideration during the design process.

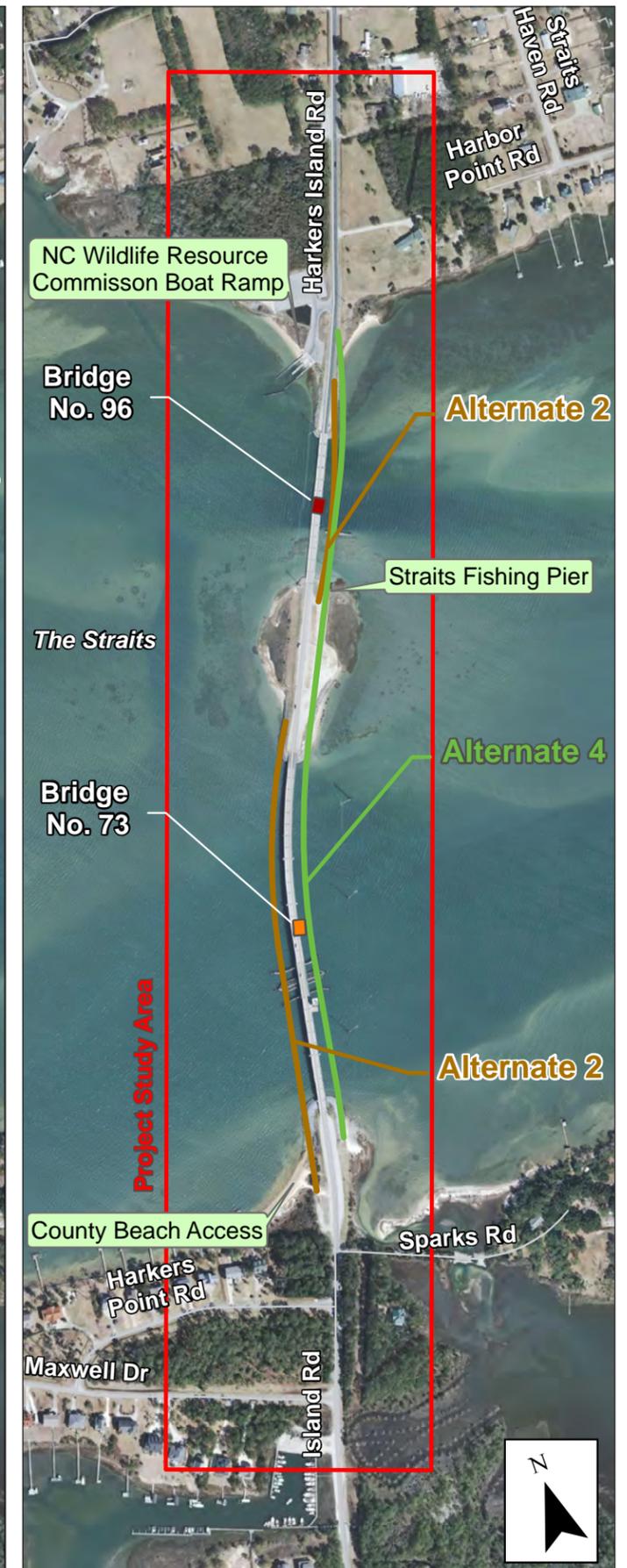
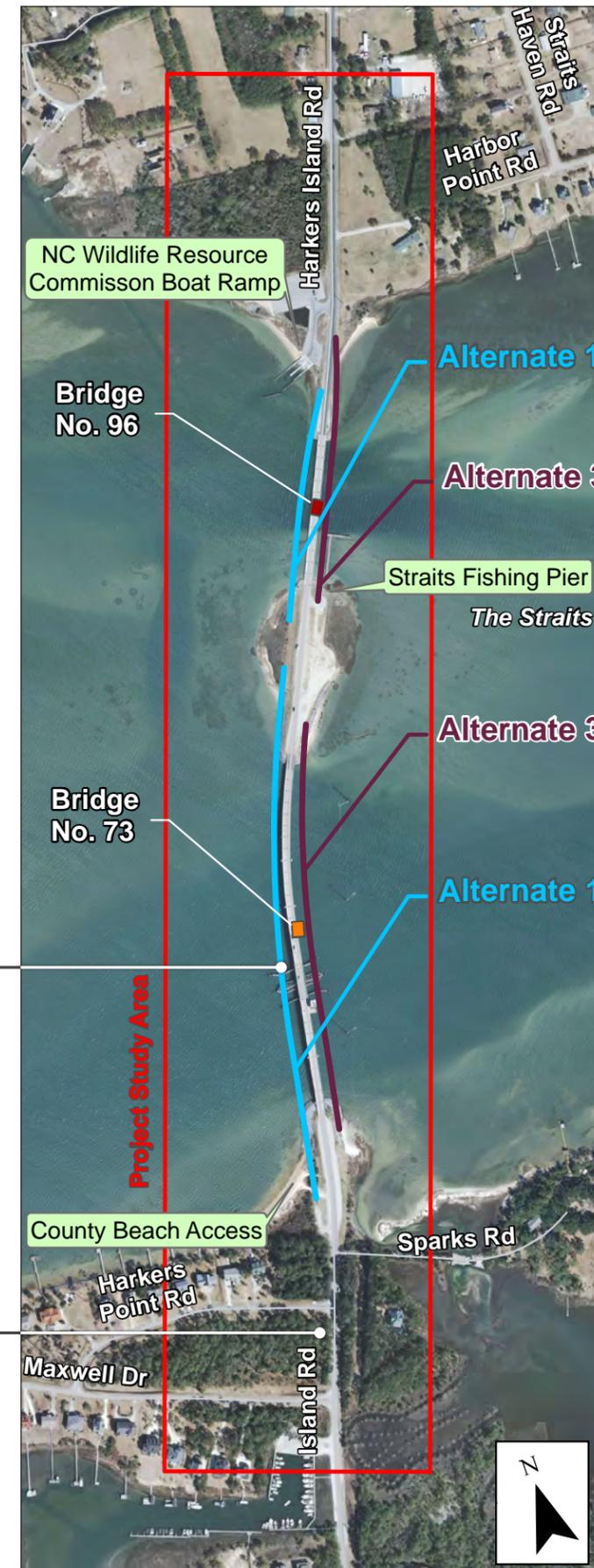
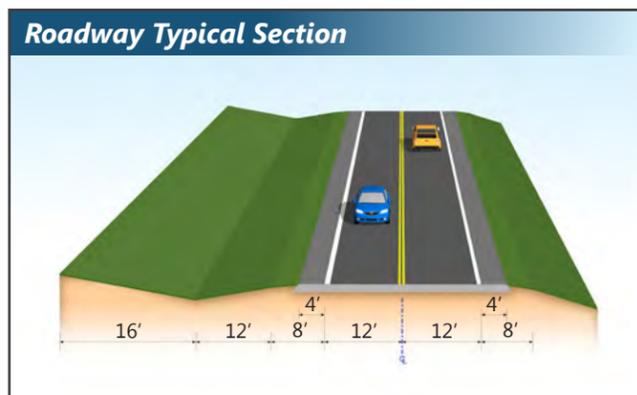
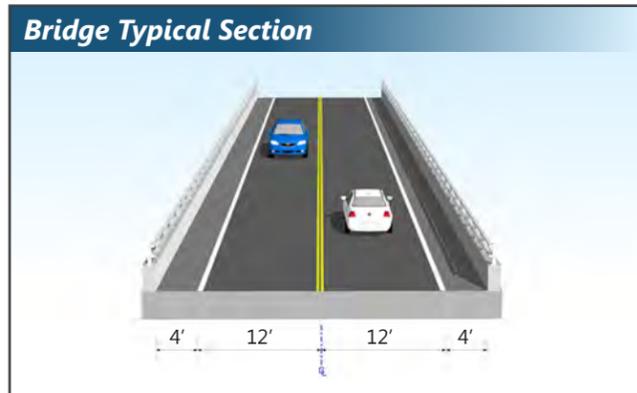


Figure B-1

HARKERS ISLAND BRIDGE REPLACEMENTS

BRIDGE NO. 73 AND NO. 96 OVER THE STRAITS - SR 1332/1335

STIP B-4863

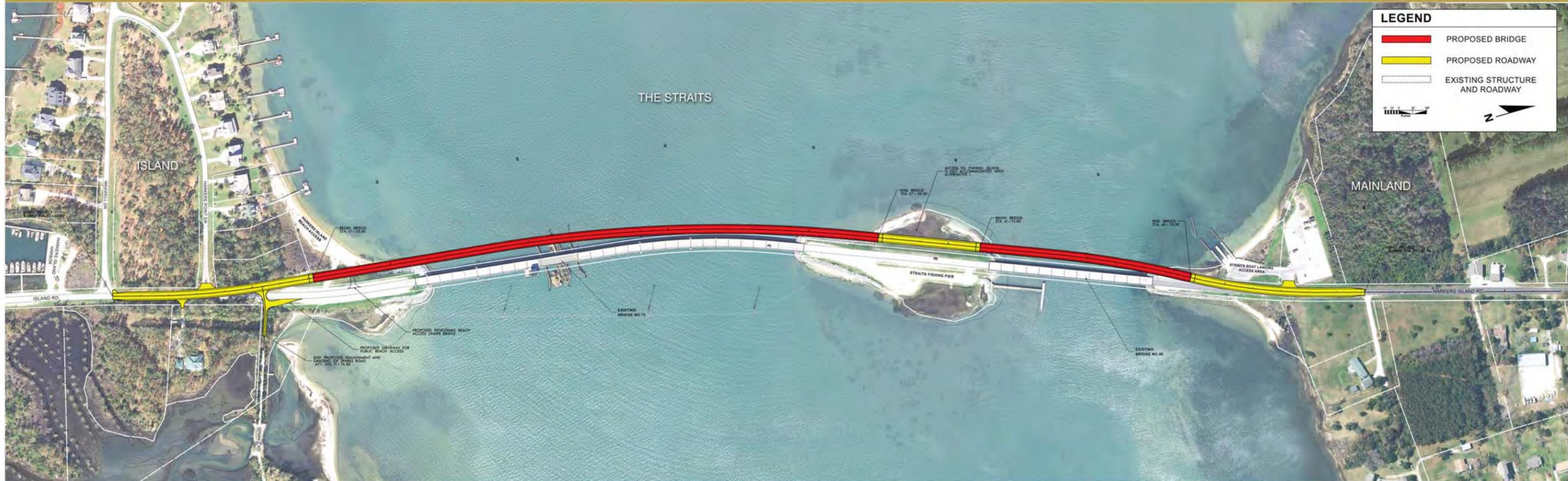
ALTERNATIVE 1

PUBLIC MEETING MAP

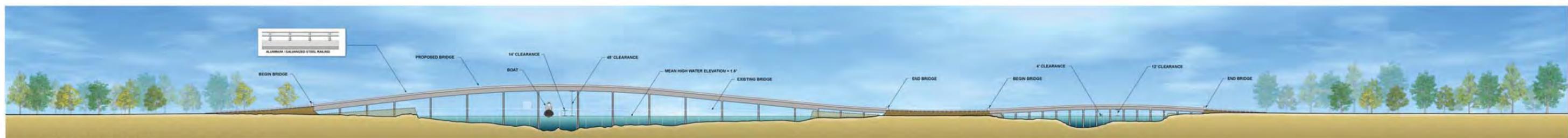
MARCH 14, 2016



RS&H



PLAN VIEW



PROFILE VIEW (1:2 exaggeration)

Figure B-2

HARKERS ISLAND BRIDGE REPLACEMENTS

BRIDGE NO. 73 AND NO. 96 OVER THE STRAITS - SR 1332/1335

STIP B-4863

ALTERNATIVE 2

PUBLIC MEETING MAP

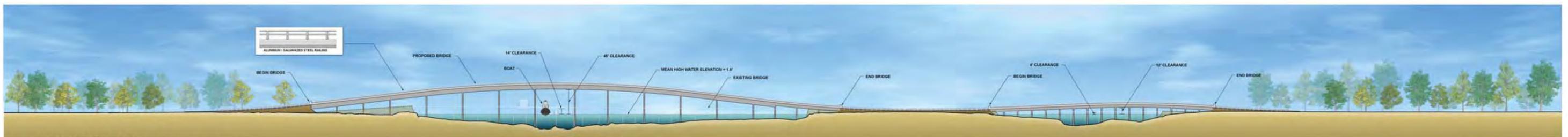
MARCH 14, 2016



RS&H



PLAN VIEW



PROFILE VIEW (1:2 exaggeration)

Figure B-3

HARKERS ISLAND BRIDGE REPLACEMENTS

BRIDGE NO. 73 AND NO. 96 OVER THE STRAITS - SR 1332/1335

STIP B-4863

ALTERNATIVE 3

PUBLIC MEETING MAP

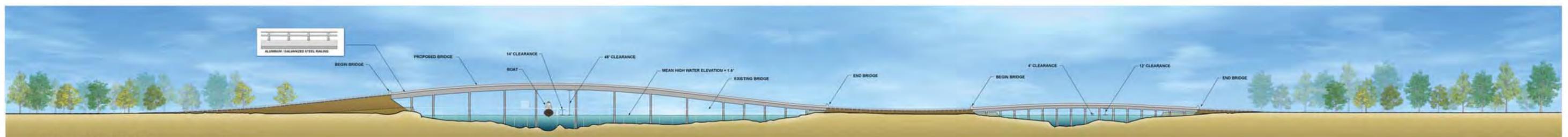
MARCH 14, 2016



RS&H



PLAN VIEW



PROFILE VIEW (1:2 exaggeration)

Figure B-4

HARKERS ISLAND BRIDGE REPLACEMENTS

BRIDGE NO. 73 AND NO. 96 OVER THE STRAITS - SR 1332/1335

STIP B-4863

ALTERNATIVE 4

PUBLIC MEETING MAP

MARCH 14, 2016



RS&H



PLAN VIEW



PROFILE VIEW (1:2 exaggeration)



Public Meeting #1 Comments Summary

1) Where do you live? (50 responses)

Harkers Island	34	68%
Straits	9	18%
Beaufort	0	0%
Morehead City	0	0%
Other	7	14%

2) How often do you travel on the Harkers Island bridges? (42 responses)

Rarely	4	10%
1-3 days per week	7	17%
>3 days per week, but not every day	10	24%
Daily	21	50%

3) How often do you travel under/through the Harkers Island bridges? (42 responses)

Rarely	28	67%
1-3 days per week	8	19%
>3 days per week, but not every day	6	14%
Daily	0	0%

4) Do you have property within the project study area? (53 responses)

Yes	19	36%
No	34	64%

4) If yes, what is your property's use? (25 responses)

Residential	22	88%
Business	2	8%
Industrial	0	0%
Recreational	1	4%
Other	0	0%

5) Which alternatives are best and worst for the Harkers Island Bridge Replacements Project? (47 responses)

Best - Alt. 1	0	0%
Best - Alt. 2	0	0%
Best - Alt. 3	23	50%
Best - Alt. 4	23	50%
Worst - Alt. 1	20	43%
Worst - Alt. 2	16	34%
Worst - Alt. 3	3	6%
Worst - Alt. 4	8	17%

6) How often do you use the following amenities: (38 responses)

Harkers Island Beach Access

Daily	4	10%
Weekly	11	28%
Monthly	8	21%
Rarely	12	31%
None	4	10%

Straits Fishing Pier

Daily	2	5%
Weekly	9	24%
Monthly	6	16%
Rarely	12	32%
None	9	24%

Straits Boat Landing Access

Daily	3	8%
Weekly	12	32%
Monthly	6	16%
Rarely	14	37%
None	3	8%

7) Were display maps and handouts easy to read and understand? (35 responses)

Yes	34	97%
No	1	3%



March 14, 2016

Public Meeting #1 Comments Summary

Harkers Island Bridge
Replacements Project (STIP)

8) Were the Project Team members helpful and clear in their explanations? (33 responses)

Yes	31	94%
No	2	6%

9) Do you have any additional issues or specific ideas that you would like to share concerning the replacement of the Harkers Island Bridges? (31 responses)

Yes	26	84%
No, Provided	5	16%

Workshop

- Glad the replacement process is starting. Thank you!
- The Island really needs the project. Looking forward to seeing any of the alternatives built.
- Different answers were given by different representatives for the same questions asked. Representatives were ill informed. Meeting seemed to be thrown together as a means to completing a task/goal.
- Project Team members could only discuss 45' clearance, they could not discuss other height options or reasons for why those heights were not used.

Bridge

- Vertical Navigational Clearance should be > 45 feet .(x2)
- Raise span to 65' to allow for boats with 65' outriggers to pass underneath. (x6)
- Lower span to <45' to both save money and force larger vessels to go around Harkers Island the long way. (x2)
- Why does Bridge No. 96 need replacing. It was rebuilt a few years ago.
- Alternative 3 creates too much fill on the mainland side that unnecessarily impacts adjacent properties. (x2)
- Has the USCG approved the 45' VNC? (x2)

Straits Fishing Pier

- Keep it at/near the Straits Island Channel!!
- Build a new fishing pier.
- Relocate the pier to the west side of the island. (x5)
- Relocate the pier to the southwest side of the island. Rotate current position 180 degrees.
- Remove the pier completely. Use money for 65' bridge.
- Relocate the pier to the west or east side of the bridge landing on the mainland side.

Harkers Island Beach Access

- All designs should avoid impacts to the beach. (x10)

Cost Concerns

- Move up the funding for the bridge. It is badly needed. (x2)
- Replace current bridge with another drawbridge. Cheaper and more aesthetically pleasing.
- Use alternative that would create the shortest bridge possible to save money.

Pedestrian/Bicyclist Concerns

- The pedestrian & bike lanes are welcomed. (x3)
- Concerned that the design has not focused on pedestrians and bicyclists enough.
- Island bridge is heavily used by locals on Holidays (foot traffic).
- Official bicycle lanes should be implemented on official bike route.
- Provide sidewalk for older community users and walkers.
- Historically, Harkers Island is a Mormon community with many bicyclists crossing the bridge daily.
- Bicycle and Pedestrian access over bridge does not seem to have been considered. (x2)

Ideas

- Leave Bridge No. 96 for access to the Straits fishing pier and parking. (x6)
- Wider lanes should be used to accommodate boat trailers.
- Incorporate a vegetative buffer between the project and residential properties to the south.
- Leaving Bridge No. 96 would benefit the Down East area by offering a "tourist" destination.
- The spoil island should be removed during construction as it is causing property flooding during storms and hurricanes. (x2)
- Consider updating the design to use Bridge 96 as a work bridge. Existing shoals around bridge will make constructability a significant issue as work barges will likely be unable to approach this bridge.



March 14, 2016

Public Meeting #1 Comments Summary

Harkers Island Bridge
Replacements Project (STIP)

Environmental Concerns

- Janes Creek outlet - drainage, sediment, and erosion concern (x3)
- Shoaling and sediment are already an issue.
- Concerned with roadway clearance of the trees on both sides of the future roadway landing on Harkers Island.
- Minimize cutting of Oak Trees during construction clearance.

Traffic and Safety

- Sight distance from channel span to vehicle access area at island could be a safety issue.
- Rescue calls when the bridge is held open is not good.
- Why is there a need for such a large looking incline at landings? Why are there differences between alternatives?
- Overflow boat trailers park in the fishing pier lot and any open space, including residential lawns.
- Contact Sheriff Asa Buck to inquire as to speeding tickets and speed-related crashes in the area.
- Concerned with the driving speeds at which people will travel along the bridge. (x2)

Residential and Business Concerns

- Worried about public trespassing on property depending on alternative chosen. (x4)
- Noise from bridge will directly affect southeast/southwest quadrant properties. (x3)
- Personal property impact due to project. (x4)
- Restriction of my right to build the residence of my choice on my lots to the west of the existing bridge due to Alts 1 and/or 2. Also, the noise associated with Alts 1 and/or 2 would significantly affect the use and enjoyment of said residential lots.
- Steps should be taken to avoid work stoppage in the light of the moratorium on the North River bridge.
- Property owners want to know right-of-way impacts so that they may make comments/respond. (x2)
- Significant drug activity occurs at the boat launch parking lot. Design should take this into account.

Board of Commissioners

Robin V. Comer, Chair
Mark Mansfield, Vice-Chair
Elaine O. Crltnton
Jimmy Farrington
Terry Frank
Jonathan Robinson
Bill Smith



County Manager
W. Russell Overman

Clerk to the Board
Rachel B. Hammer

April 18, 2016

Ms. Michele James
NCDOT Project Development
1516 Mail Service Center
Raleigh, North Carolina 27699-1516

RE: Harkers Island Bridge Replacement Project

Dear Ms. James:

We applaud the North Carolina Department of Transportation (NCDOT) in their decision and proposal to replace the fixed-span bridge and drawbridge over The Straits on Harkers Island Road. The Carteret County Board of Commissioners hereby expresses their support of *Alternate 4* for the Harkers Island Bridge Replacement Project. We understand that *Alternate 4* would allow for one fixed bridge to be located to the east of the existing bridges, with a 45-foot Vertical Navigational Clearance (VNC) at Bridge Number 73.

In further support of *Alternate 4*, we also request that Bridge Number 96 remain in place and either be turned over to Carteret County or leased to our County for non-vehicular traffic. Our intentions are that this bridge could be used either for fishing and/or recreational purposes, as well as providing access to the island between Bridges 73 and 96.

We feel that *Alternate 4* will not only improve structural integrity, but will also reduce congested traffic and provide sufficient accommodation to and off the Island.

We appreciate your consideration.

Sincerely,

A handwritten signature in black ink, appearing to read "Robin V. Comer".

Robin V. Comer, Chairman
Carteret County Board of Commissioners

Meeting Notes Memorandum



Meeting Date: March 14, 2016

Subject: B-4863 Harkers Island Bridge Replacements
Local Officials Meeting

Location: Core Sound Waterfowl Museum & Heritage Center

Attendees: Local Officials

Present:

Eugene (Gene) Foxworth, Carteret County Planning Director
Russell Overman, Carteret County Manager
William Pittman, Carteret/Craven County EMC
Stephen Rea, Carteret County EMS
Patrick Flanagan, Down East RPO

Project Team

Present from NCDOT:

Michele James, PDEA
Sam St. Clair, Roadway
Gary Lovering, Roadway
Anamika Ladd, HES-PI
Mani Shahidi, HES
Herman Huang, HES-CS
Ed Eatmon, Division 2
Maria Rogerson, Division 2
Jeffery Cabaniss, Division 2
John Rouse, Division 2
Randy Hall, Division 2
Elbert Pitman, Division 2
Construction
Bert Whitehurst, Right-of-Way

Present from RS&H:

Edith Peters, RS&H
Radha Swayampakala, RS&H
Meredith Van Duyn, RS&H
Jennifer Farino, RS&H
Drew Morrow, RS&H
Nick Matthews, RS&H
Samantha Schober, RS&H

The purpose of this meeting was to discuss the Harkers Island Bridge Replacements Project and the upcoming public involvement with local officials from the Town of Harkers Island and Carteret County. After introductions, the project team presented the Voice Over PowerPoint presentation, handouts, and mapping to be presented at the open-house public workshop scheduled to follow the local officials meeting from 4:00pm- 7:00pm. The following is a summary of the items discussed in the meeting:

Local Officials' Questions/Comments

- What were the traffic management options (mentioned in the PPT)?
 - None are feasible. For example, transit, carpooling, ferry, etc. were all considered, but from an experience standpoint.
- What alternatives is the County in favor of/not in favor of?

- County is not interested in any alternatives that would eliminate the fishing pier or beach access (county owned property). County has no objections to replacing or relocating the fishing pier.
- Under alternative 4, can Bridge No. 96 remain for pedestrian/bicycle access to the pier?
 - NCDOT prefers not to.
- Where can the fishing pier be located?
 - It gets a large amount of use now, though not as much as the boat launch.
 - Relocating nearby may be alright.
- How frequently are these three public amenities used?
 - All three public resources are used regularly.
- Have there been any issues with emergency vehicles being delayed by the bridge opening?
 - Generally, no. EMS has a good working relationship with DOT. No major delays foreseen.
- Vessel Survey study – how many weekends vs. weekend days were tracked?
 - Each survey session included one weekend over the span of the 5 months. The Project Team explained the process of how these days were chosen.
- What is the depth of the channel?
 - 20 feet
- What is the span length?
 - At least 120 feet wide
- The public will mention wanting a 65-foot clearance. They are very adamant about that.
- Is there a particular time of day/year that is best for Harkers Island residents?
 - This is reasonable (Today). Summer would draw in more second home residents/visitors.
- How long will public comments be accepted for?
 - Comments will be received until March 28, 2016. The Project Team can provide officials with extra copies of the comment form or electronic versions.
- Carteret County Board meeting to be held on March 21, 2016. More feedback expected to come after this meeting.

**Appendix C
Project Photographs**

**CONCURRENCE POINT 2
DETAILED STUDY ALTERNATIVES CARRIED FORWARD**



Bridge No. 73 (Swing Span Bridge)



Bridge No. 96 (Fixed Bridge)



NCWRC Boat Ramp in Northwest Bridge Quadrant



Parking Area for NCWRC Boat Ramp



Straits Fishing Pier



Carteret County Public Beach Access

**CONCURRENCE POINT 2
DETAILED STUDY ALTERNATIVES CARRIED FORWARD**



Public Beach Access Parking Area



Southern Bridge Approach from Harkers Island



Northern Bridge Approach from Mainland



Power Transmission Lines on East Side of Bridges

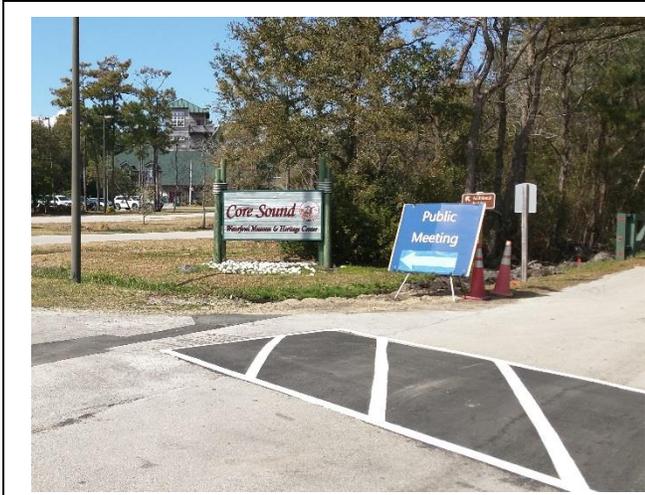


Sparks Road near Southeast Bridge Quadrant



Deck of Bridge No. 73

**CONCURRENCE POINT 2
DETAILED STUDY ALTERNATIVES CARRIED FORWARD**



Public Meeting (PM) #1 held at Core Sound Waterfowl & Heritage Center on Harkers Island, NC



Study Alternative and Comment Card station at PM #1



Project Team Members discussing the study alternatives with citizens at PM #1



Local Officials and Town Representatives listening to the voiceover PowerPoint presentation at PM #1



Citizen and Project Team Member discussion



Citizens discuss study alternatives with Project Team Members

**Appendix D
Proposed Design Criteria**

PROPOSED DESIGN CRITERIA

WBS ELEMENT: 40212.1.1
F. A. PROJECT: BRSTP-1335 (3)
COUNTY: CARTERET **DIVISION:** 2
PROJECT DESCRIPTION: REPLACE BRIDGES 73 & 96 OVER THE STRAITS AT HARKERS ISLAND
ON SR 1335 (ISLAND ROAD)

TIP: B-4863
PAGE: 1 of 2
DATE: 1/25/2016

PROJECT ENGINEER: JENNIFER FARINO, PE
PROJECT DESIGN ENGINEER: DREW MORROW, PE
PREPARED BY: DDM

ROUTE	SR 1335	SPARKS RD		REFERENCE
LINE	-L-	-Y-		OR REMARKS
TRAFFIC DATA				
ADT LET YR	2019	3300	< 400	Note 4
ADT DESIGN YR	2040	4200	< 400	Note 4
TTST	2%	N/A		Note 3
DUALS	2%	N/A		Note 3
DHV	10%	N/A		Conceptual Design Files
DIR	60%	N/A		Conceptual Design Files
CLASSIFICATION	MAJOR COLLECTOR	LOCAL		NCDOT Functional Class
TERRAIN TYPE	LEVEL	LEVEL		
DESIGN SPEED mph	50 mph	20 mph		
POSTED SPEED mph	45 mph	N/A		Note 1
PROP. R/W WIDTH ft	VAR.	VAR.		
CONTROL OF ACCESS	N	N		
RUMBLE STRIPS (Y/N)	N	N		RDM 1-4P
TYPICAL SECTION TYPE	2 LN. SHLDR.	1 LN. SHLDR.		Conceptual Design Files
EXISTING LANE WIDTH	VAR. (10' - 12')	VAR. (9' - 10')		Conceptual Design Files
PROPOSED LANE WIDTH ft	12'	10'		Conceptual Design Files
SIDEWALKS (Y/N)	N	N		Note 2
BICYCLE LANES (Y/N)	N	N		Note 2
MEDIAN WIDTH ft	N/A	N/A		
MED. PROTECT. (GR/BARRIER)	N/A	N/A		
SHOULDER WIDTH (total)				
Berm ft	N/A	N/A		
MEDIAN ft	N/A	N/A		
OUTSIDE w/o GR ft	8'	N/A		Note 2 for -L-
OUTSIDE w/ GR ft	11'	N/A		RDM 1-4B
PAVED SHOULDER				
OUTSIDE TOTAL/FDPS ft	4'	N/A		Note 2 for -L-
MEDIAN TOTAL/FDPS ft	N/A	N/A		
GRADE				
MAX.	6%	8%		GB (2011) Table 6-2, 5-2
MIN.	0.3%	0.3%		
K VALUE				
SAG	96	17		GB (2011) Table 3-36, 5-3
CREST	84	7		GB (2011) Table 3-34, 5-3
HORIZ. ALIGN.				
MAX. SUPER.	0.04	NC		Conceptual Design Files
MIN. RADIUS ft	926'	270'		GB (2011) Table 3-8, Very Low-Volume Local Roads (2001) Exhibit 16
SPIRAL (Y/N)	N	N		
CURVE WIDENING (Y/N)	N	N		
CROSS SLOPES				
PAVEMENT	0.02	0.03		GB (2011) 5-3 for -Y-
Berm ft	N/A	N/A		
PAVED SHOULDER	0.02	N/A		
TURF SHOULDER	0.08	0.08		
MEDIAN DITCH	N/A	N/A		
DITCH TYPICAL (A,B)	A	B		RDM 1-2A, F-1A
CLEAR ZONE ft	CUT = 12' FILL = 30'	6'		RDM 1-4N, Note 5
TYPICAL SECTION NO.				

NOTES:

1. Taken from Survey Unit Scoping Review Comments dated June 15, 2009.
2. Taken from Division of Bicycle and Pedestrian Transportation Unit Scoping Review Comments dated May 27, 2009.
A 4' paved shoulder is recommended to accommodate bicycle and pedestrian traffic along SR 1335.
3. Data not available at this time; assumption based on site visits and observations during vessel survey.
4. -Y1- is an existing 9' wide gravel road that dead ends approximately 1,000' from SR 1335; assumed Very Low-Volume Local Roads design guidelines applies.
5. Per AASHTO Very Low Volume Local Roads page 48, a 6' clear zone is desired if it can be provided at low cost and with minimum social/environmental impacts

PROPOSED DESIGN CRITERIA

TIP: B-4863

PAGE: 2 of 2

REFERENCE
OR REMARKS

SCALE:

PLANS	100			
PROFILES	50	horiz.	10	vert.
INTERCH. DETAIL	N/A			
CROSS-SECTIONS	10	horiz.	10	vert.

SHEET SIZE:

PLANS	22x34
INTERCH. DETAIL	N/A
CROSS-SECTIONS	22x34

BRIDGES and/or CULVERTS:

TYPE (SINGLE/DUAL/RCBC)

SIZE (LENGTH X WIDTH X HT) BRIDGE 73: LENGTH VARIES X 32' X HT VARIES

BRIDGE 96: LENGTH VARIES X 32' X HT VARIES

LOCATION TBD

SKETCH #

HORIZ. CLEARANCE 115'

VERT. CLEARANCE 45'

DESIGN EXCEPTIONS: N/A

NOTES: (SPECIAL CONSIDERATIONS)

Division 2 has requested the proposed bridge meet or be above the splash clearance of 14'.

According to Division 2, either a 2 bar metal rail or 3 bar metal rail will be used to accommodate bicycle and pedestrian traffic across the bridges.

**Appendix E
NEPA/404 Merger Team CP 2 Meeting Agreement**

NEPA/404 Merger Team Meeting Agreement

Concurrence Point 2: Detailed Study Alternatives Carried Forward

Project Name/Description: Harkers Island Bridge Replacements, Carteret County, NC

TIP Project No.: B-4863

WBS No.: 40212.1.1

Detailed Study Alternatives Carried Forward

Detailed study alternatives to be carried forward are Alternatives 3 and 4 for the referenced project.

The Project Team met and concurred on this date of June 15, 2016 with the Purpose & Need and Study Area Defined for the proposed project as stated above:

USACE _____	NCDOT _____
USEPA _____	USFWS _____
NCDCR _____	NCDWR _____
FHWA _____	NCWRC _____
USCG _____	NCDCM _____
DERPO _____	NMFS _____



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