

# Meeting Notes Memorandum



RS&H Architects-Engineers-Planners, Inc.  
Architectural, Engineering, Planning and Environmental Services

## NCDOT/RS&H Project Team

**Meeting Date:** August 16, 2012

**Subject:** NEPA/404 Merger Team Concurrence Point 2A/3 Meeting for Topsail Island Bridge Replacement Project TIP Project No. B-4929

**Location:** Structure Design Conference Room, NCDOT

**Attendees:**

**Merger Team (MT)**

***Present:***

Brad Shaver, USACE  
Ron Lucas, FHWA  
Gary Jordan USFWS  
Steve Sollod, NCDCM  
Mason Herndon, NCDWQ  
Travis Wilson, NCWRC

***Via Conference Call:***

Jessi O'Neal, NCDMF  
Christopher Militscher, USEPA

***Invited but did not attend:***

Terens Knowles (USCG)  
Renee Gledhill-Earley (DCR-SHPO)  
Ron Sechler (NMFS)

**Project Team (PT)**

***Present from NCDOT:***

Greg Thorpe, PDEA  
Rob Hanson, PDEA  
Charles Cox, PDEA  
Michele James, PDEA  
Kalynn Chambers, PDEA  
Drew Joyner, HES  
Ed Lewis, HES  
Herman Huang, HES  
Chris Rivenbark, NES  
Elizabeth Lusk, NES  
Tyler Stanton, NES  
Karen Fussell, Division 3  
Amanda Glynn, Division 3  
Mark Staley, Roadside Environmental  
Kevin Fischer, Structures Management  
Dan Idol, Structures Management  
Paul Atkinson, Hydraulics  
Neal Strickland, Right-of-way  
Don Eggert, Cape Fear RPO  
Tony Houser, Roadway Design  
Lee Moore, Roadway Design  
Chandrakant Sura, Congestion Management  
Shane York, TPB  
Hardee Cox, STIP Unit  
Daniel Oliver, Utilities

***Present from RS&H Consultant Team:***

Chad Critcher, RS&H  
Ken Herring, RS&H  
Radha Krishna Swayampakala, RS&H  
Jan Anderson, JKA Engineering

A NEPA/404 Merger Team meeting for the subject project was held on August 16, 2012 in NCDOT's Structure Design Conference Room. The purpose of this meeting was to reach agreement on Concurrence Point 2A (Bridging Decisions and Alignment Review) and Concurrence Point 3 (LEDPA Selection).

**Introductions:** Ms. Michele James opened the meeting and invited introductions from attendees. Ms. Michele James then explained the purpose of the meeting, requested all the attendees to sign in and introduced Mr. Chad Critcher with the consultant firm of RS&H.

**Presentation:** Mr. Critcher offered additional Concurrence Point 2A/3 packets to the attendees and presented a PowerPoint presentation, attached herein, that summarized information found in the packets, including the items outlined below:

- Merger Process History & Schedule
- Public Involvement Summary
- Section 4(f) Resources – Adverse Impacts
- Existing Natural Resources
- DSA Alignment & Bridging Review for Concurrence Point 2A
- CP 2A Concurrence
- LEDPA / Preferred Alternative Selection
- CP 3 Concurrence

During the presentation, it was shown that Alternatives 6 and 7 would result in adverse impacts to the Soundside Park, a Section 4(f) resource. Therefore these alternatives were recommended for elimination and the Merger Team (MT) concurred. See attached CP 2A form signed by the MT.

The public outreach efforts to date were presented including citizen comments. In addition, alternative preliminary designs were presented with corresponding human, physical, and natural impacts and costs, followed by a recommendation from the PT to select Alternative 17 as LEDPA. Questions and comments were discussed as follows:

**MT Comment:** (In reference to the 0.4 acre CAMA wetland impact associated with Alternative 17) *DCM does not consider this as a small impact. For DCM, a small impact might be less than 1,000 square feet.*

**Project Team (PT) Response:** Presented plan views with the assumed 25' buffers at the CAMA wetland sites and explained that during final design the buffer width could be reduced leading to less CAMA impact area. Reducing the buffer from 25' to 15' would reduce CAMA wetland impacts from approximately 0.4 acres to 0.25 acres.

**MT Question:** *Can the Alternative 17 bridge be extended on the mainland side to minimize the impacts?*

**PT Response:** Extending the bridge on the mainland side would further challenge the traffic control issues during construction. However, if we can build the Roland Avenue realignment first and detour the traffic, we can possibly extend the bridge further. The CAMA wetland impacts on the mainland side are less than 0.1 acre. Other construction methods such as a reduced buffer, retaining walls at the bridge end, and shallow deck would reduce these impacts to approximately 408 square feet.

**MT Question:** *On the island side, is there an opportunity to extend the bridge?*

**PT Response:** The Project Team evaluated various options to minimize CAMA wetland impacts for Alternative 17 on the island side. The wetland impacts presented in the CP 2A/3 Report are calculated based on a 25' buffer. Reducing this buffer to 15' would reduce these impacts substantially. Also, extending the bridge by approximately 110' and including a retaining wall near the landing may eliminate the impacts. However, this may require raising the elevation of the roundabout, which may result in additional property impacts in this area. Extending the bridge and constructing retaining walls may result in additional cost of \$2 million.

**MT Question:** *Instead of a roundabout, if a normal intersection is used at the island tie-in, would that give an opportunity to lengthen the bridge?*

**PT Response:** Yes, it would provide the opportunity to extend the bridge. The Project Team will review this option after LEDPA selection.

**MT Comment:** *It is a matter of balancing development with environment. So, we understand that there is going to be some impacts, especially for a project that is going to have some over-riding public benefit; which DOT projects do. But, we want NCDOT to try and make those as small as possible within reason. We are not expecting NCDOT to spend millions of dollars to span the CAMA wetlands, but we would like to reach a compromise.*

**PT Response:** We will make every effort to minimize the impacts. At this point, based on the survey and topography information available, we do not feel comfortable to commit to absolute zero acres of the CAMA wetland impacts. Can we concur to having impacts less than 0.1 acres?

**MT Comment:** *We are okay with 0.1 acres, provided additional measures are investigated to further reduce them.*

**MT Question:** *Can we consider an option to excavate out the high ground at the island tie-in to the level of the marsh and create additional marsh. This will also help to further extend the bridge?*

**PT Response:** Ideas like this will be reviewed during final design.

**MT Question:** *How high is the top of the abutment above the high ground on the island side?*

**PT Response:** Under the proposed Alternative 17 alignment, near the island tie-in, there would be 3-4 feet of clearance. This would require shorter spans to facilitate shallower girders.

**MT Comment:** *We need NCDOT to investigate on-site mitigation opportunities for CAMA wetlands.*

**PT Response:** We are committed to follow our standard procedure and coordinate with the Merger Team accordingly.

**MT Comment:** *National Marine Fisheries (NMFS) is a signatory authority, but there is no representative at this meeting. NCDOT needs to contact them.*

**NC DMF Comment:** We have been in contact with them.

**PT Response:** We will continue to coordinate with NCDMF and NMFS. Our current contact (Ron Sechler) could not attend this meeting. We will coordinate with NMFS after this meeting.

**MT Question:** *What were the Submerged Aquatic Vegetation (SAV) findings? How was the SAV surveyed?*

**PT Response:** Early screening revealed that SAV evaluation would not be needed since the water is too deep and moving too fast. Preliminary survey was performed around marsh edges. Anything less than 2 meters is considered as fishery habitat and would have to be mitigated.

**MT Comment:** NCDMF's primary nursery area ends at the end of the channel. SAV has been showing up along the edges and in the shallow areas. We would anticipate SAV mostly along the channel. Recently, we noticed some SAV south of the existing bridge. We are not certain on exact location.

**PT Response:** There are some shallow areas along the Alternative 17 alignment. Anything less than 2 meters is considered as possible habitat and may require mitigation. It is critical to find out what exists within 2 meters deep.

**MT Question:** *Our main concern is direct impacts, but there may also be shade impacts. Also, Alternative 17 potentially may cause more impacts to SAV habitat than other alternatives. When was this original survey completed? It appears that most of the time instead of avoidance, NCDOT chooses to mitigate?*

**PT Response:** The early screening was performed within the last two years. Yes, typically NCDOT works with the agencies to mitigate. When various alternatives are compared, SAV impacts are a major factor. Once a LEDPA/Preferred Alternative has been selected, mitigation opportunities are investigated.

**MT Comment:** *SAV information needs to be documented and shared with the Merger Team. We also need to make sure that NMFS provides their comment on this.*

**PT Response:** We can perform a survey as early as next week. We will coordinate this with NCDMF. However, if we were to find no SAV in the survey, would agencies feel comfortable to sign the Concurrence Point 3 for Alternative 17 as the LEDPA/Preferred Alternative?

**MT Comment:** *Yes, we agree for the Alternative 17 to be the LEDPA, provided no SAV impacts. Also, if no SAV is found for Alternative 17, we can handle signing the Concurrence Point 3 offline without meeting formally.*

**MT Question:** *Why would the temporary impacts under Alternatives 6 and 7 be considered as "adverse impacts"?*

**FHWA Response:** With Alternatives 6 and 7, the picnic area and amphitheater in the Soundside Park along with Bumble Bee Market would be impacted by the temporary detour bridge. Even though the detour alignment is temporary, impacts to facilities such as the amphitheater would be severe enough to render the Soundside Park unusable during construction. It should be noted that any facilities impacted by the temporary detour bridge would be restored once the permanent bridge is open to traffic. The Surf City Town officials felt that the temporary detour bridge impacts to Soundside Park would be more adverse and thereby could not be considered as *de minimis* impacts.

**MT Question:** *By signing the Concurrence Point 3 for Alternative 17, are we committing to a roundabout at the island tie-in location?*

**PT Response:** No. Followed by LEDPA selection, we will further refine the design plans and reevaluate the island tie-in area.

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Following this discussion, the Merger Team and NCDOT revised the content of Concurrence Point 2A and 3 forms. The Merger Team members in attendance signed the Concurrence Point 2A form and verbally agreed to sign Concurrence Point 3 form, provided no impacts to SAV habitat.

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Followed by the CP 2A/3 meeting, the NCDMF and NCDOT Natural Environment Section (NES) performed SAV survey on August 23, 2012 and September 25, 2012. The attached memo summarizes the findings of these SAV surveys. The Merger Team members have reviewed this form and agreed in December 2012/January, 2013 to identify Alternative 17 as the LEDPA/Preferred Alternative. CP 3 form has been signed by all agencies with the exception of NMFS. NMFS has chosen to abstain from this process and will discuss SAV mitigation measures with NCDOT during subsequent concurrence meetings.

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If any recipient of the meeting notes would like to add comments or feels a comment is erroneous or needs to be expanded, please feel free to contact Michele James at (919) 707-6027 or by email at [mjames@ncdot.gov](mailto:mjames@ncdot.gov).

Copies to:

- Meeting Attendees
- Terens Knowles, USCG
- Renee Gledhill-Earley, DCR-SHPO
- Brandon Howard, NMFS

Attachments:

- Concurrence Forms 2A and 3
- SAV Memo (dated December 10, 2012)
- PowerPoint Presentation

**Section 404/NEPA Merger Team Meeting Agreement**

Concurrence Point 2A: Bridging Decisions and Alignment Review

Project Name/Description: Topsail Island Bridge Replacement, Pender County, NC

TIP Project No.: B-4929

Federal Aid Project No.: BRSTP-50 (10)

WBS No.: 40233.1.1

**Bridging Decisions and Alignment Review**

The Project Team has reviewed the bridging and alignments of the seven Detailed Study Alternatives (DSA) and agreed to carry five of the seven DSAs forward into the Concurrence Point 3. Alternatives 6 and 7 have been eliminated due to their adverse impacts to Soundside Park, a Section 4(f) resource, as well as their limited off-site detour options, constructability concerns and higher overall costs compared with other five DSAs. Alternatives 4, 5, 5R, 11, and 17 will be carried forward to Concurrence Point 3. Table below shows the begin and end stations and associated minimum roadway/hydraulic bridge lengths for each DSA.

Detailed Study Alternative No.	Begin Station	End Station	Minimum Roadway/Hydraulic Control Bridge Length (feet)
Alt 4	516+40	553+90	3,750
Alt 5	615+40	652+16	3,676
Alt 5R	615+40	651+94	3,654
Alt 6	1316+60	1321+70	620
Alt 6—Detour	21+13	36+00	1,487
Alt 7	1511+60	1521+70	1,020
Alt 7—Detour	21+13	36+00	1,487
Alt 11	919+00	959+40	4,040
Alt 17	406+75	444+00	3,725

The Project Team met and concurred on this date of August 16, 2012:

USACE	<u>Brent E. Hower 8-16-2012</u>	NCDOT	<u>Michelle L. James</u>
USEPA	_____	USFWS	<u>Harry Jordan</u>
NCDCR	_____	NCDWQ	<u>_____</u>
FHWA	<u>Ronald G. Goff</u>	NCWRC	<u>_____</u>
USCG	_____	NCDCM	<u>_____</u>
NCDMF	_____	NMFS	_____
RPO	<u>Don Egert</u>		

**Section 404/NEPA Merger Team Meeting Agreement**

Concurrence Point 2A. Bridging Decisions and Alignment Review

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USACE Paul E. Howe 8/16/2012  
 USEPA C. A. L. 8-21-12  
 NCDCR \_\_\_\_\_  
 FHWA Ronald \_\_\_\_\_  
 USCG \_\_\_\_\_  
 NCDMF \_\_\_\_\_  
 RPO Don Eggert

NCDOT \_\_\_\_\_  
 USFWS \_\_\_\_\_  
 NCDWQ \_\_\_\_\_  
 NCWRC \_\_\_\_\_  
 NCDCM \_\_\_\_\_  
 NMFS \_\_\_\_\_

**ORIGINAL**

AUGUST 16, 2012

CONCURRENCE POINT 2A  
BRIDGING DECISIONS AND ALIGNMENT REVIEW

Section 404/NEPA Merger Team Meeting Agreement

Concurrence Point 2A: Bridging Decisions and Alignment Review

Project Name/Description: Topsail Island Bridge Replacement, Pender County, NC

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Alt 6 - Detour	21+13	36+00	1,487
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Alt 17	406+75	444+00	3,725

The Project Team met and concurred on this date of August 16, 2012:

USACE Brod Edwards 8/16/2012  
 USEPA Cheryl A. ... 8-21-12  
 NCDCCR Rene Whidhill-Easley 8/21/12  
 FHWA Ronald ...  
 USCG \_\_\_\_\_  
 NCDMF \_\_\_\_\_  
 RPO Don Eggert

NCDOT Michelle R. Jones  
 USFWS Harry Jordan  
 NCDWQ ...  
 NCWRC ...  
 NCDCM ...  
 NMFS \_\_\_\_\_

**ORIGINAL**

AUGUST 16, 2012

CONCURRENCE POINT 2A  
BRIDGING DECISIONS AND ALIGNMENT REVIEW

Section 404/NEPA Merger Team Meeting Agreement

Concurrence Point 2A: Bridging Decisions and Alignment Review

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A15	615+40	652+18	3,678
Alt 5R	615+40	651+84	3,654
Alt 6	<del>1318+40</del>	1321+70	320
Alt 6 - Detour	21+12	36+00	1,487
Alt 7	1611+60	1621+76	1,020
Alt 7 - Detour	21+12	36+00	1,487
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Alt 17	408+75	444+00	3,725

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USACE	<u>Bud Estover 8/16/2012</u>	NCDOT	<u>Michelle R. Jones</u>
USEPA	<u>CLAR 8-21-12</u>	USFWS	<u>Harry Jordan</u>
NCDCR	<u>Kevin Meredith-Easley 8/21/12</u>	NCDWQ	<u>Tom Zuck</u>
FHWA	<u>Ronald [Signature]</u>	NCWRC	<u>St. N. R.</u>
USCG		NCDCM	<u>[Signature]</u>
NCDMF	<u>Jessie Baker</u>	NMFS	
RPO	<u>Don Eggert</u>		

NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

TOPSAIL ISLAND BRIDGE REPLACEMENT  
T.I.P. No. B-4929  
AUGUST 2012

**ORIGINAL**

DECEMBER 17, 2012

CONCURRENCE POINT 3  
LEDDPA/PREFERRED ALTERNATIVE SELECTION

Section 404/NEPA Merger Team Meeting Agreement

Concurrence Point 3: LEDPA/Preferred Alternative Selection

Project Name/Description: Topsail Island Bridge Replacement, Pender County, NC

TIP Project No.: B-4929

Federal Aid Project No.: BBSTP-50 (10)

WBS No.: 40233.1.1

**LEDDPA/Preferred Alternative Selection**

The Project Team has reviewed the Detailed Study Alternatives and has chosen **Alternative 17** as the Least Environmentally Damaging Practicable Alternative (LEDDPA) Preferred Alternative for the replacement of the referenced project, Bridge No. 16 in Topsail Island. During final design development, NCDOT will reduce the permanent CAMA wetland impacts associated with Alternative 17 not to exceed 0.1 acres. In addition, NCDOT will span the 120' of Submerged Aquatic Vegetation (SAV) habitat shown in the attached figure. Measures will be taken to avoid any other bottom-disturbing activities in the SAV habitat area.

Subsequent to the August 16, 2012 Concurrence Point 3 meeting, the Project Team performed additional survey for SAV habitat. Results of this survey are summarized in the attached memo. After review and coordination of the SAV survey results, the Project Team has concurred on the selection of Alternative 17 as the LEDDPA/Preferred Alternative.

USACE	<i>[Signature]</i> 12/9/2012	NCDOT	<i>[Signature]</i>
USEPA	<i>[Signature]</i> 11/21/13	USFWS	
NCEM		NCDWR	
FIRWA		NCWRC	
USCG		NCCDM	
NCDFM	<i>[Signature]</i>	NMFS	
NOAA			

**ORIGINAL**

DECEMBER 17, 2012

CONCURRENCE POINT 3  
LEDPA/PREFERRED ALTERNATIVE SELECTION

Section 404/NEPA Merger Team Meeting Agreement

Concurrence Point 3: LEDPA/Preferred Alternative Selection

Project Name/Description: Topsail Island Bridge Replacement, Pender County, NC

TIP Project No.: B-4929

Federal Aid Project No.: BRSTP-50(10)

WBS No.: 40233.1.1

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USACE	<u>Brad Elmer</u> 12-19-2012	NCOOT	<u>Michelle L. James</u>
USEPA	_____	USFWS	<u>Gary Jordan</u> 12/20/2012
NCDCR	_____	NCOWQ	_____
FHWA	_____	NCWRC	_____
USCG	_____	NCDCM	_____
NCDMF	<u>Jesse Palmer</u>	NMFS	_____
RPO	_____		

**ORIGINAL**

DECEMBER 17, 2012

CONCURRENCE POINT 3  
LEDPA/PREFERRED ALTERNATIVE SELECTION

**Section 404/NEPA Major Issues Meeting Agreement**

Concurrence Point 3-1: LEDPA/Preferred Alternative Selection

Project Name/Description: Topsail Island Bridge Replacement, Pender County, NC

FIP Project No.: 11-4920

Federal Aid Project No.: BRS1P-50 (10)

WBS No.: 40233.1.1

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USACE	<i>Ben Hume</i>	12-19-12	NCDOT	<i>Michelle Reynolds</i>
USEPA			USFWS	
NCDCR	<i>Renee Hedrick-Early</i>	12-20-12	NCDWR	
FUWA			NCWRC	
USCG			NCDCM	
NCDM	<i>Jesse Pollock</i>		NMFS	
IRAC				

**ORIGINAL**

DECEMBER 17, 2012

CONCURRENCE POINT 3  
LEDPA/PREFERRED ALTERNATIVE SELECTION

Section 404/NEPA Merger Team Meeting Agreement

Concurrence Point 3: LEDPA/Preferred Alternative Selection

Project Name/Description: Topsail Island Bridge Replacement, Pender County, NC

TIP Project No.: B-4929

Federal Aid Project No.: BRSTP-50 (10)

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USEPA	_____	USFWS	_____
NCDCR	_____	NCDWG	<u>Mason Henderson 12-21-12</u>
FHWA	_____	NCWRC	_____
USCG	_____	NCDCM	_____
NCDMF	<u>Jenni Bette</u>	NMFS	_____
RPO	_____		

Section 404/NEPA Merger Team Meeting Agreement

Concurrence Point 3: LEDPA/Preferred Alternative Selection

Project Name/Description: Topsail Island Bridge Replacement, Pender County, NC

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USEPA	_____		USFWS	_____
NCDCR	_____		NCDWG	_____
FHWA	<u>Robt. L. ...</u>		NGWRC	_____
USCG	_____		NCDCM	_____
NCDMF	<u>John ...</u>		NMFS	_____
RPO	_____			_____

**ORIGINAL**

DECEMBER 17, 2012

CONCURRENCE POINT 3  
LEDPA/PREFERRED ALTERNATIVE SELECTION

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Subsequent to the August 16, 2012 Concurrence Point 3 meeting, the Project Team performed additional survey for SAV habitat. Results of this survey are summarized in the attached memo. After review and coordination of the SAV survey results, the Project Team has concurred on the selection of Alternative 17 as the LEDPA/Preferred Alternative.

USACE	<u>Brad Shaw</u> 12-19-2012	NCDOT	<u>Michele L. James</u>
USEPA	_____	USFWS	_____
NCDCR	_____	NCDWQ	_____
FHWA	_____	NCWRC	<u>[Signature]</u>
USCG	_____	NCDCM	_____
NCDMF	<u>Jenni Baker</u>	NMFS	_____
RPO	_____		

**ORIGINAL**

DECEMBER 17, 2012

CONCURRENCE POINT 3  
LEDPA/PREFERRED ALTERNATIVE SELECTION

**Section 404/NEPA Merger Team Meeting Agreement**

Concurrence Point 3: LEDPA/Preferred Alternative Selection

Project Name/Description: Topsail Island Bridge Replacement, Pender County, NC

TIP Project No.: ~~B-4929~~

Federal Aid Project No.: BRSTP-50 (10)

WBS No.: 40233.1.1

**LEDPA/Preferred Alternative Selection**

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USACE	<i>Brad Shaver</i>	12.9.2012	NCDOT	<i>Michelle Kipp</i>
USEPA			USFWS	
NCDCR			NCDWQ	
FHWA			NCWRC	
USCG			NCDCM	<i>[Signature]</i>
NCDMF	<i>Jessie P. [Signature]</i>		NMFS	
RPO				

NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

TOPSAIL ISLAND BRIDGE REPLACEMENT  
T.I.P. NO. B-4929  
DECEMBER 2012



# Memorandum

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**Date:** December 10, 2012

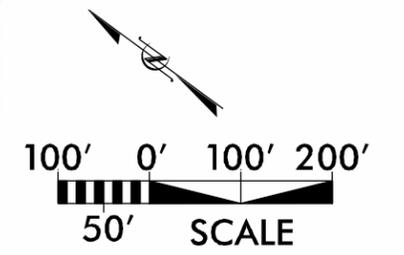
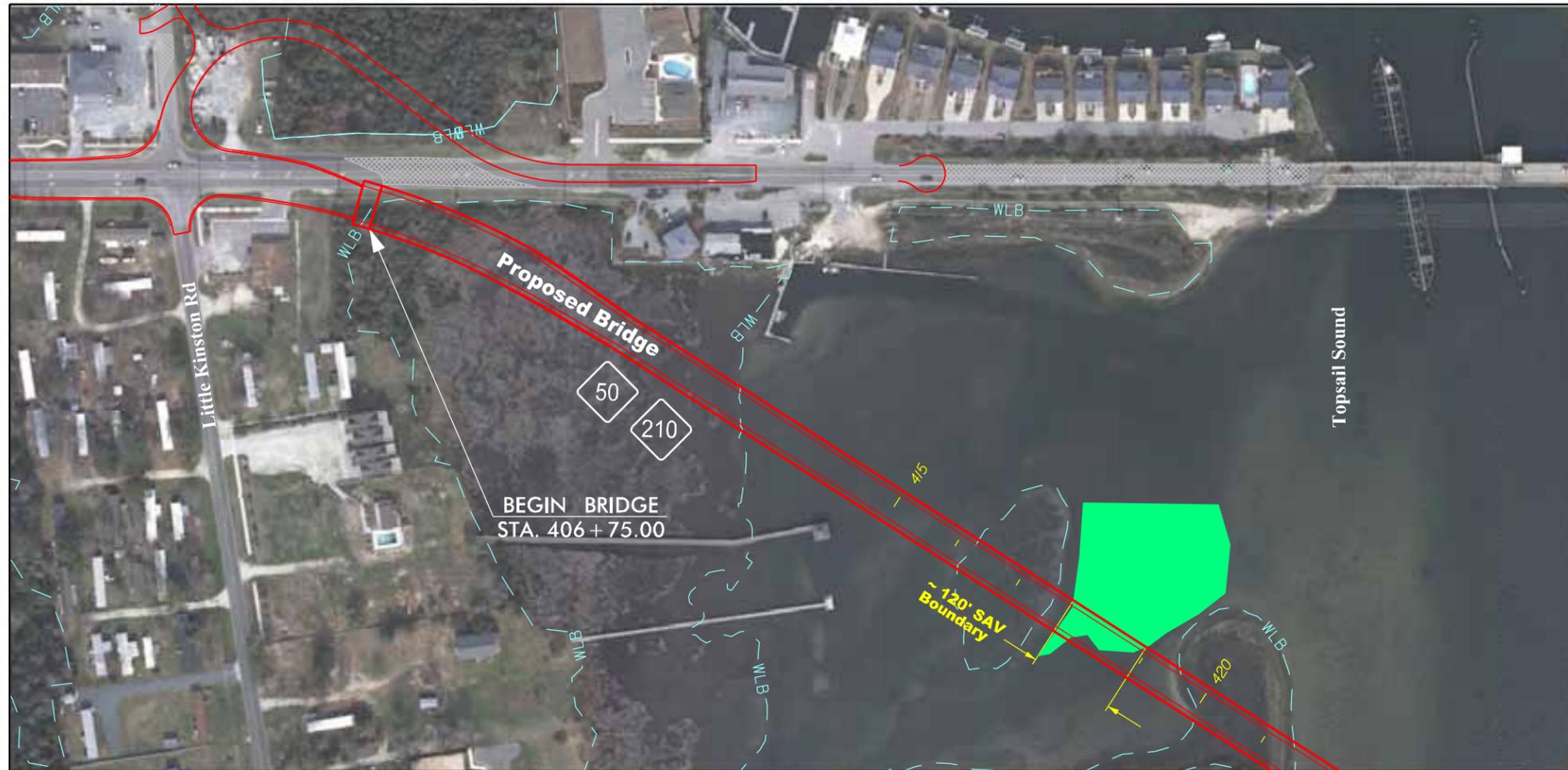
**Subject:** Topsail Island (B-4929) Bridge Replacement in Surf City  
Submerged Aquatic Vegetation/Habitat

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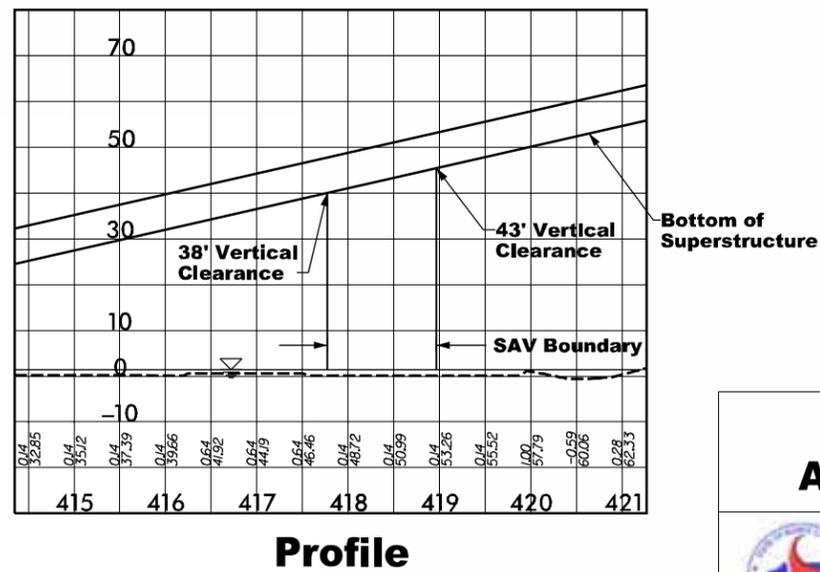
This memo is intended to summarize the findings of the of Submerged Aquatic Vegetation (SAV) survey performed by the North Carolina Division of Marine Fisheries (NCDMF) and NCDOT Natural Environment Section (NES) on August 23, 2012 and September 25, 2012 for the Topsail Island Bridge replacement project (B-4929) in Surf City, North Carolina.

- During the Concurrence Point 2A/3 (CP 2A/3) Merger meeting on August 16, 2012, there was a question of when the last SAV survey was performed for this project, and if Alternative 17 would have any direct or shade impacts to the potential SAV habitat.
- The NCDMF and NES performed onsite surveys of the potential habitat areas within the Seven Detailed Study Alternatives on August 23, 2012 and conducted a more intense survey in the one area SAV was located on September 25, 2012. This area of SAV habitat is in the vicinity of the proposed bridge of Alternative 17 (north of the proposed alignment - towards the existing bridge), shown in Figure 1.
- There were four to five very small patches (diameter less than 1 foot) of sparse widgeon grass (*Ruppia maritima*) located within the proposed bridge drip line. The SAV becomes slightly more prevalent to the north of the proposed bridge location.
- Direct impacts to the mapped SAV habitat will be avoided. As shown in Figure 1, the extent of the proposed bridge span over the SAV habitat is about 120'. NCDOT's typical span length for similar bridges is 130'. These approximate 130' bridge spans will be shifted or extended as possible to minimize indirect impacts to SAV and direct impacts to wetlands.
- Based on the proposed profile grade and deck depth, the bridge would have a minimum of 38' of clearance over the SAV location, therefore minimizing the shade impacts. Since permanent shading impacts cannot be avoided, DMF may request mitigation if it is determined that there is a substantial SAV resource and once the shading impacts have been determined.
- To avoid direct impacts to the more prevalent SAV area on the north side of the proposed bridge, the temporary work bridge could be constructed only on the south side with fingers extending across the width of the bridge during construction. In addition, no other bottom-disturbing activities will occur in the SAV habitat area indicated in Figure 1.

At the CP 2A/3 meeting, the Merger Team agreed to identify Alternative 17 as the LEDPA/Preferred Alternative, subject to the SAV survey and impact identification. Although the proposed bridge does cross over a small area of this SAV, there are measures available to avoid or mitigate any direct or shade impacts to the vegetation. Therefore, NCDOT requests the Merger Team to sign the concurrence form, which indicates the Alternative 17 as the LEDPA/Preferred Alternative.



**Note:** Temporary work bridge will need to be located on the south side to avoid any direct impacts to SAV.



PRELIMINARY PLANS  
DO NOT USE FOR CONSTRUCTION

- Legend**
- Submerged Aquatic Vegetation/Habitat Delimited Area
  - Wetland Boundary

### Alternative 17 Submerged Aquatic Vegetation/Habitat

**TOPSAIL ISLAND BRIDGE REPLACEMENT PROJECT**  
(T.I.P. No: B - 4929)

Bridge No. 16 Over Intracoastal Waterway on NC 50 / 210

**Figure 1**

October 2012



# TOPSAIL ISLAND BRIDGE REPLACEMENT

SURF CITY, NORTH CAROLINA



## Concurrence Points 2A & 3 August 16, 2012



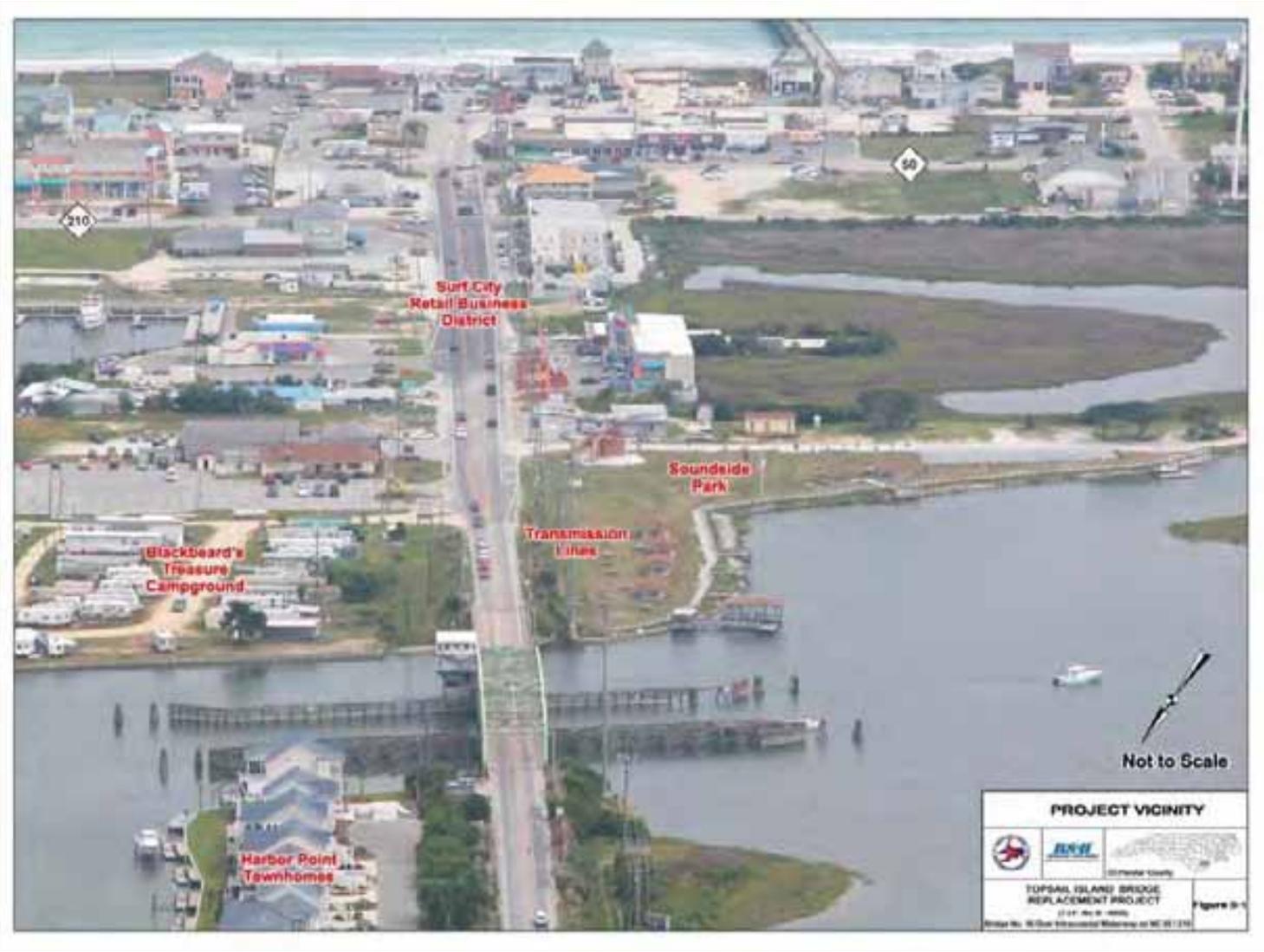
NCDOT

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# Concurrence Points 2A&3 Agenda

- Introduction
- Merger Process History & Schedule
- Public Involvement
- Section 4(f) Resources – Adverse Impacts
- Existing Natural Resources
- DSA Alignment & Bridging Review for Concurrence Point 2A
- CP 2A Concurrence
- LEDPA / Preferred Alternative Selection
- CP 3 Concurrence

# INTRODUCTION – PROJECT VICINITY



# MERGER HISTORY – CP #1

## Concurrence Point #1 – August 20, 2009

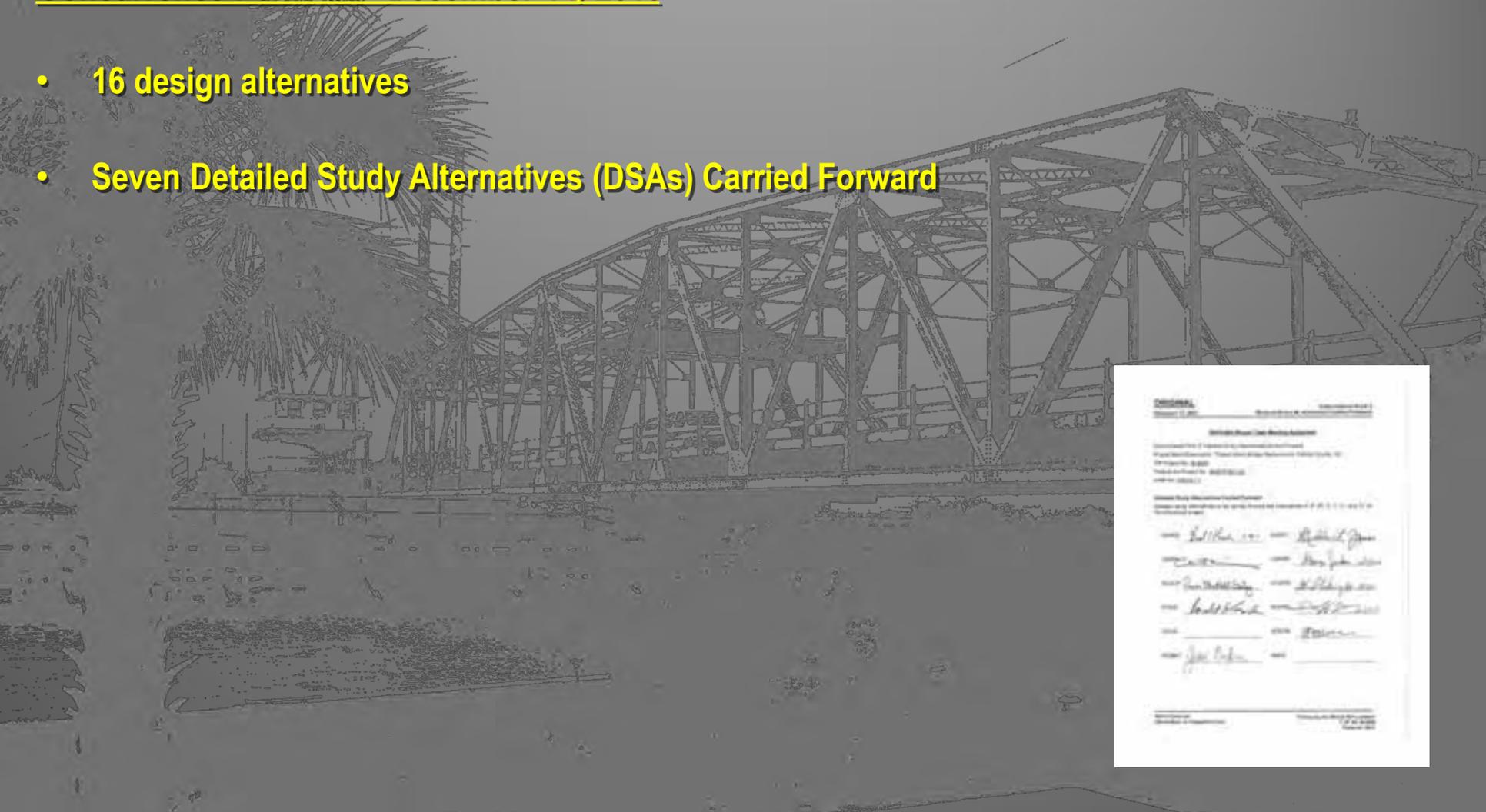
- **Purpose of Proposed Action**
  - Improve bridge safety and functionality
- **Need for Proposed Action**
  - Structurally deficient, functionally obsolete bridge
- **Project Study Area**



# MERGER HISTORY – CP #2

## Concurrence Point #2– December 14, 2010

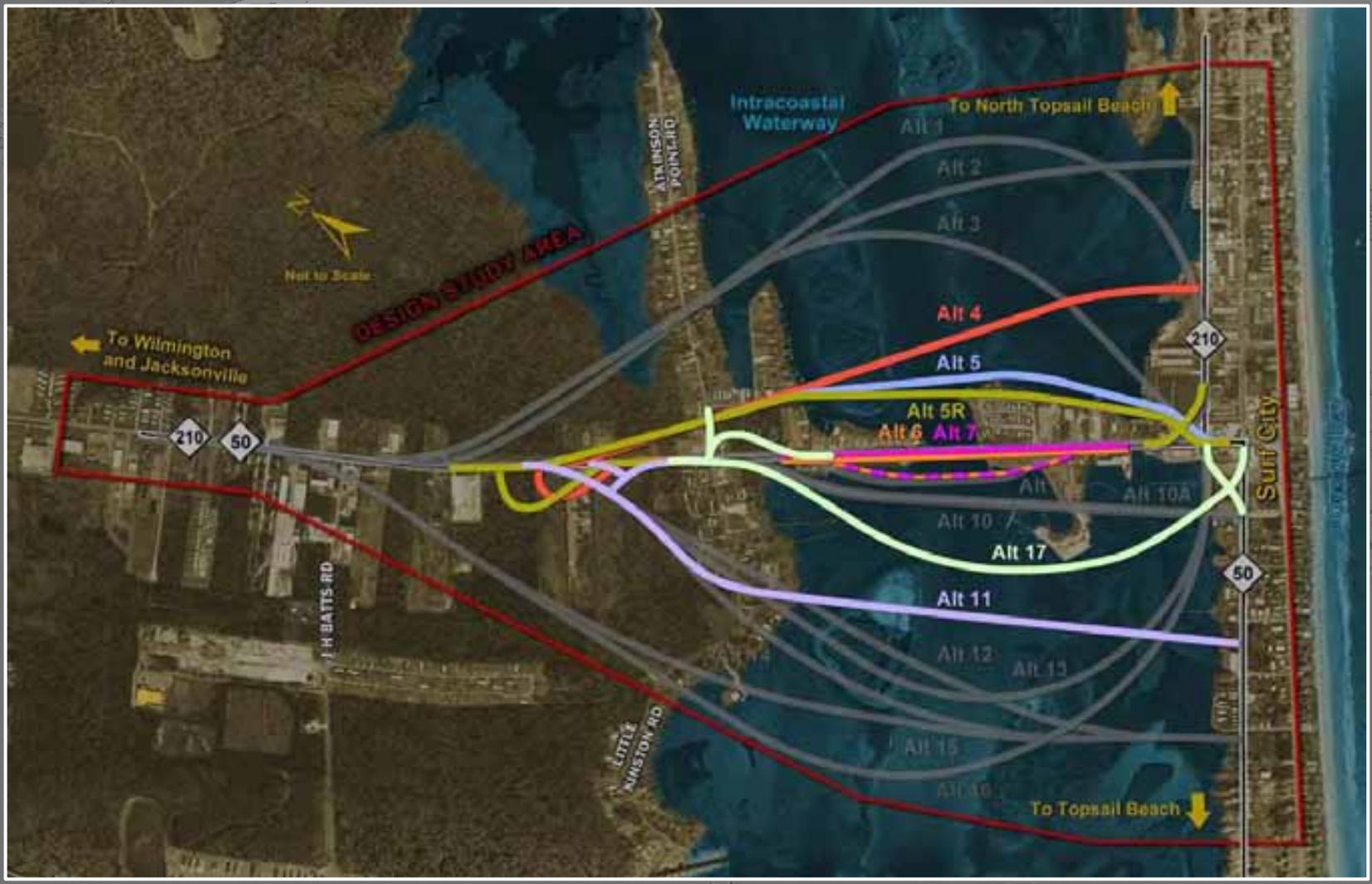
- 16 design alternatives
- Seven Detailed Study Alternatives (DSAs) Carried Forward



# MERGER HISTORY – CP #2



# MERGER HISTORY - DSAs



50  
210

TOPSAIL ISLAND  
BRIDGE REPLACEMENT  
SURF CITY, NORTH CAROLINA



# PROJECT SCHEDULE

- FONSI - Spring, 2013
- Right-of-Way - 2015
- Construction – 2017



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# PUBLIC INVOLVEMENT - MEETINGS

- **Citizens Informational Workshop #1 (CIW #1) – June 25, 2009**
- **Citizens Informational Workshop #2 (CIW #2) – October 21, 2010**
- **Environmental Assessment (EA) document signed in October 2011**
  - Preliminary Design Plans, and Impact Analysis for the Seven DSAs
  - Detailed Cost Estimates for the Seven DSAs
- **Corridor Public Hearing (CPH) – December 8, 2011**
  - Informal Pre-Hearing Open House
  - Formal Public Hearing
  - 270 people were in attendance
  - 140 comment cards were collected; other comments received pre/post CPH
  - 16 Citizens presented their comments during the Formal Public Hearing



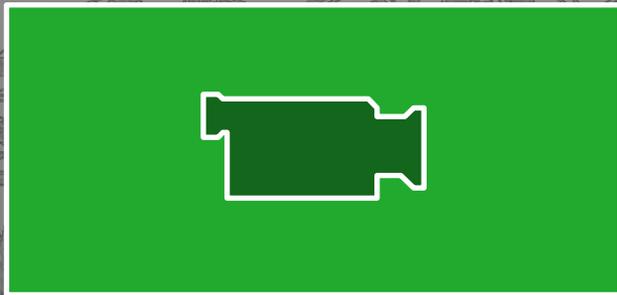
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**TOPSAIL ISLAND  
BRIDGE REPLACEMENT**  
SURF CITY, NORTH CAROLINA

**BRIDGE  
AHEAD**

# PUBLIC INVOLVEMENT – CPH VIDEO

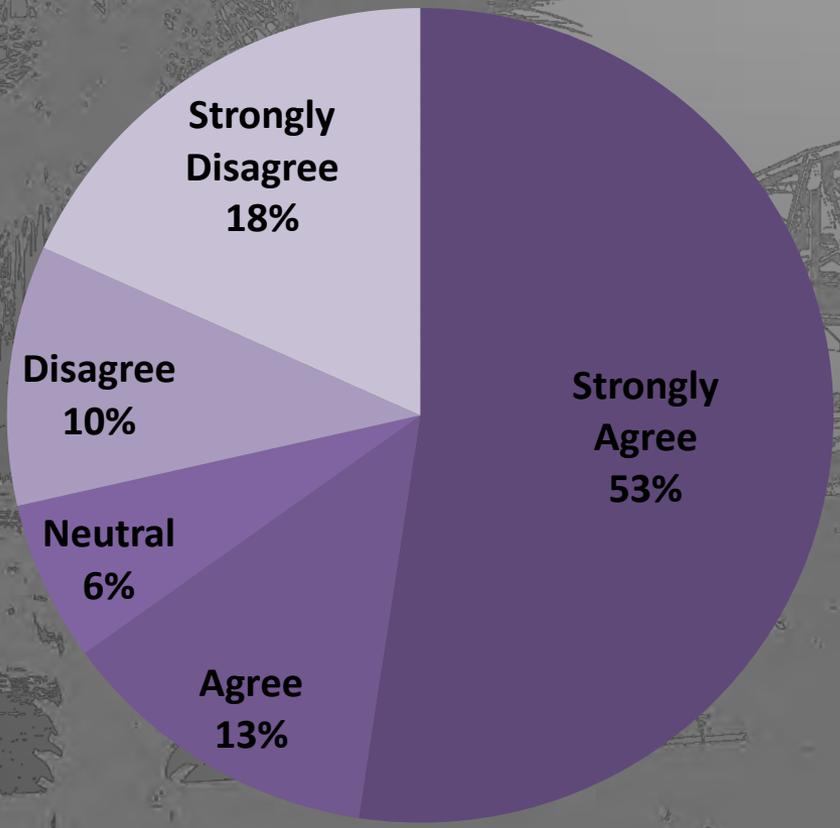


**NCDOT**

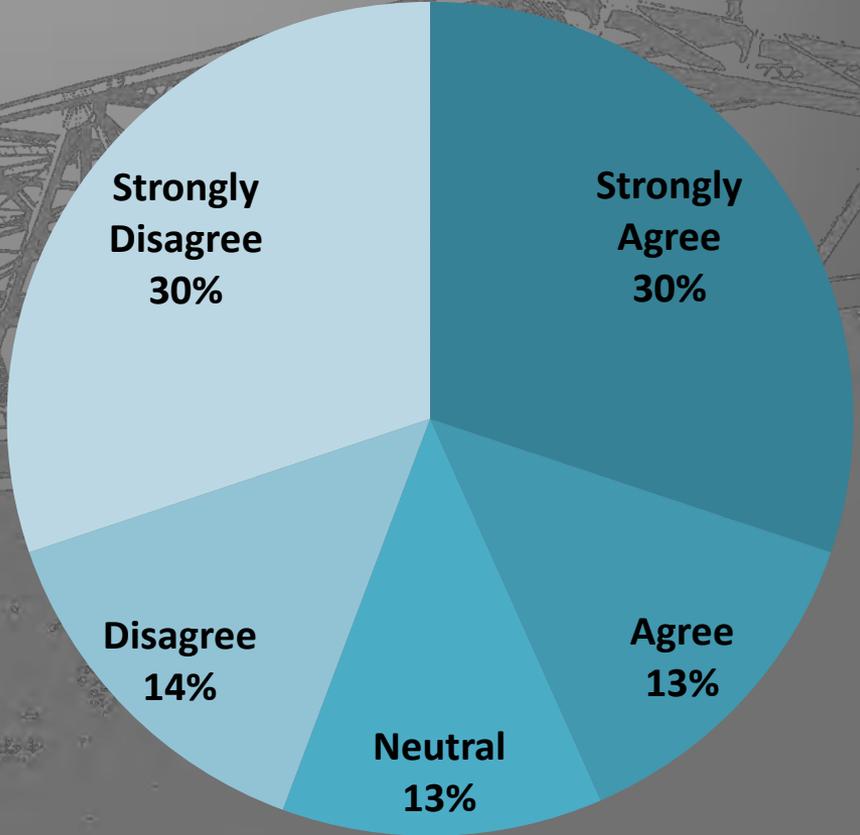
**RS&H**  
IMPROVING YOUR WORLD

# PUBLIC INVOLVEMENT – CPH RESULTS

Preference for High-Level Fixed Bridge  
(126 responses)



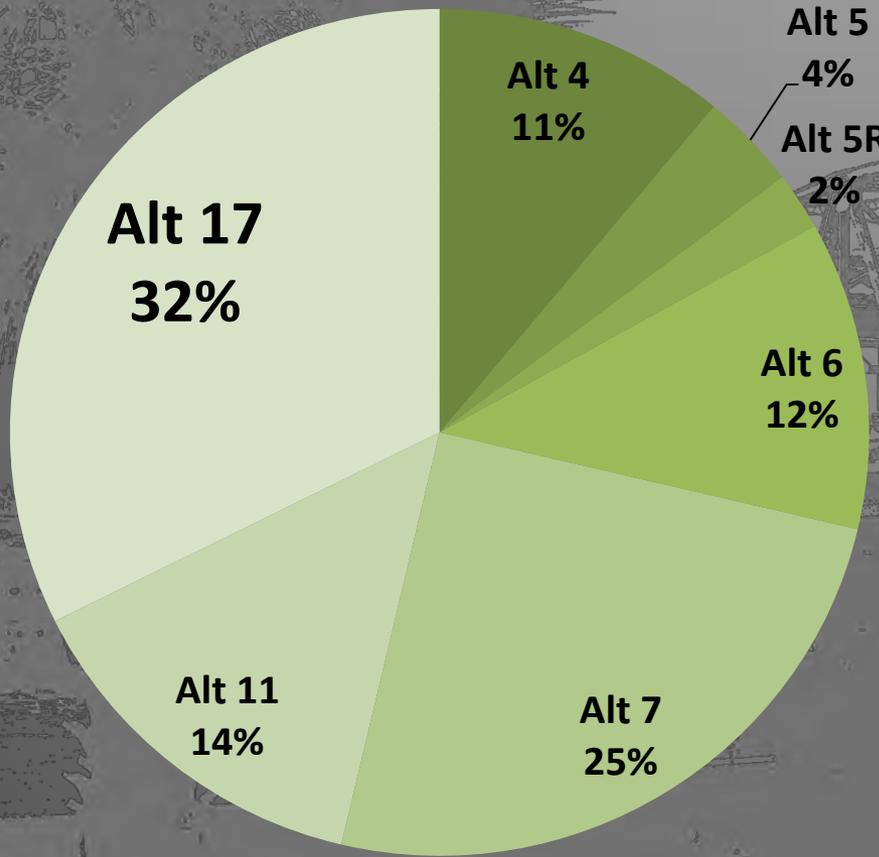
Preference for Low-Level/Mid-Level  
Moveable Bridge (106 responses)



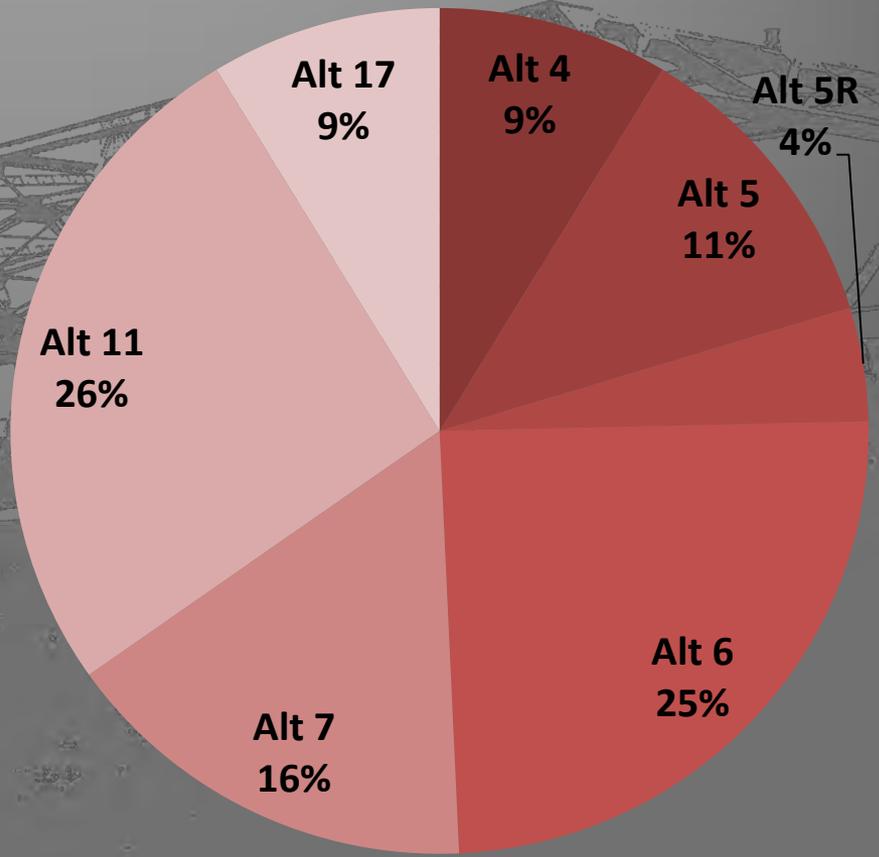
\* Refer to Appendix C of the CP 2A and 3 packet for more information

# PUBLIC INVOLVEMENT – CPH RESULTS

Which alternative is your First Preference? (136 responses)



Which alternative is your Seventh (least) Preference? (69 responses)



\* Refer to Appendix C of the CP 2A and 3 packet for more information

# AGENCY COMMENTS – USACE

- Riparian wetlands are present within the study area
- Update figures per the latest USACE field verified wetlands
  - A recent enforcement action led to discovery of additional wetlands in NE quadrant
- NCDOT is encouraged to aggressively pursue on-site mitigation, including preservation of undeveloped parcels
- Provide projections on potential impacts associated with utility relocations
- NCDOT is encouraged not to use Section 4(f) as the sole basis for alternative elimination

# AGENCY COMMENTS - EPA

- Vacant property impacts not typically included in NEPA document summary tables
- DSA #11 is least preferred given the larger Terrestrial Forest community impacts
- DSA #11 impacts also include 4 residential relocations, 1 business relocation, and 1 church impact

# AGENCY COMMENTS- FWS

- All DSAs have similar impacts to federal resources, fish, and wildlife
- Since no beach nesting habitat is present on-site, the loggerhead sea turtle falls under the purview of the NMFS
- Golden eagles do not nest in NC, but do occasionally migrate to NC in winter

# SECTION 4(F) RESOURCES

- **Bridge No. 16 Adverse Impact**
  - No feasible and prudent alternatives to replacing bridge
- **Soundside Park Adverse Impact**
  - Alternatives 6 and 7 Temporary Detour Impacts



# SECTION 4(F) RESOURCES

- **Detour – 25 miles and 40 minutes**



**Existing North  
Topsail Island Bridge**

**Existing Topsail  
Island Bridge**

# SECTION 4(F) RESOURCES

- **Soundside Park Adverse Impact**
  - Alternative 6 Temporary Detour Impacts



# SECTION 4(F) RESOURCES

- **Soundside Park Adverse Impact**
  - Alternative 7 Temporary Detour Impacts



# EXISTING NATURAL RESOURCES



# EXISTING NATURAL RESOURCES

## Jurisdictional Stream (Project Study Area – Detailed Study Alternatives only)

Map ID*	Length (feet)	Classification	Compensatory Mitigation Required (if impacted)	River Basin Buffer
Topsail Sound	5,350	Perennial	Yes	Not Applicable
SA	1,385	Perennial	Yes	Not Applicable

## Jurisdictional Wetlands (Project Study Area – Detailed Study Alternatives only)

Map ID*	NCWAM Classification	Hydrologic Classification	NCDWQ Wetland Rating	Area (acres)
WA	Wet Pine Flatwood	Non-Riparian	55	32.9
WB	Headwater Forest	Riparian	47	0.6
WC	Estuarine Woody Wetland	Riparian	60	5.7
WD	Salt/Brackish Marsh	Tidal/CAMA	Not Applicable	155.5
<b>Total</b>				<b>194.7</b>

# EXISTING NATURAL RESOURCES

## Federally Protected Species Listed for Pender County

Scientific Name	Common Name	Federal Status*	Habitat Present	Biological Conclusion**
<i>Alligator mississippiensis</i>	American alligator	T (S/A)	Yes	Not Required
<i>Charadrius melodus</i>	Piping plover	T	No	No Effect
<i>Picoides borealis</i>	Red-cockaded woodpecker	E	Yes	No Effect
<i>Acipenser brevirostrum</i>	Shortnose sturgeon	E	No	No Effect
<i>Trichechus manatus</i>	West Indian manatee	E	Yes	MA/NLAA
<i>Caretta caretta</i>	Loggerhead sea turtle	T	Yes	MA/NLAA
<i>Chelonia mydas</i>	Green sea turtle	T	No	No Effect
<i>Thalictrum cooleyi</i>	Cooley's meadowrue	E	Yes	No Effect
<i>Carex lutea</i>	Golden sedge	E	Yes	No Effect
<i>Schwalbea americana</i> <sup>+</sup>	American chaffseed	E	Yes	No Effect
<i>Amaranthus pumilus</i>	Seabeach amaranth	T	No	No Effect
<i>Lysimachia asperulaefolia</i>	Rough-leaved loosestrife	E	Yes	No Effect

\* E – Endangered; T – Threatened; T(S/A) – Threatened due to similarity of appearance  
 \*\* MA/NLAA – May Affect/Not Likely to Adversely Affect  
 + Historic record (the species was last observed in the county more than 50 years ago)

# DSA – ALTERNATIVE 6

- Permanent/Detour Bridge Length (ft) = 520/1,487
- CAMA Wetlands (acres) = 0.3



# DSA – ALTERNATIVE 6



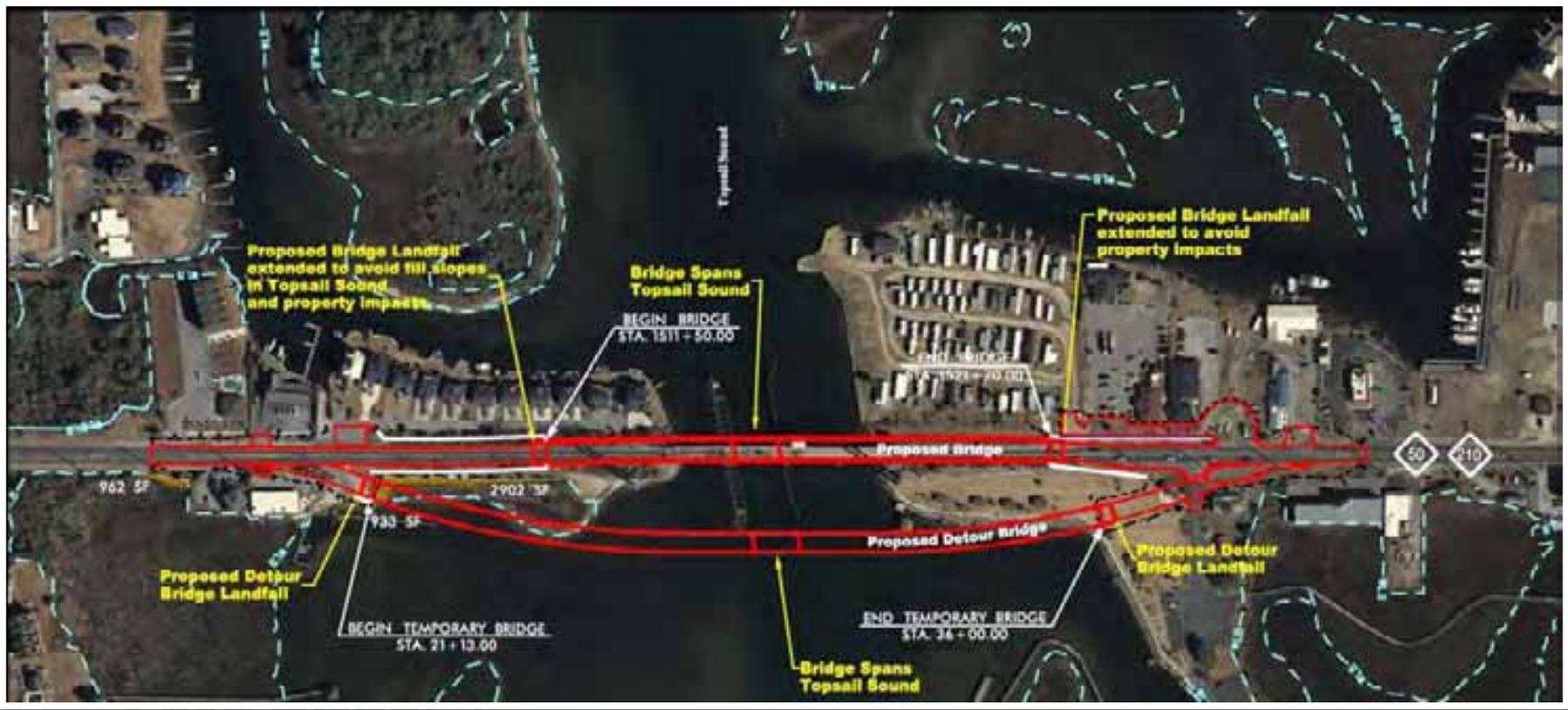
**Begin & End Bridge Locations**

# DSA – ALTERNATIVE 7

- Permanent/Detour Bridge Length (ft) = 1,020/1,487
- CAMA Wetlands (acres) = 0.1



# DSA – ALTERNATIVE 7



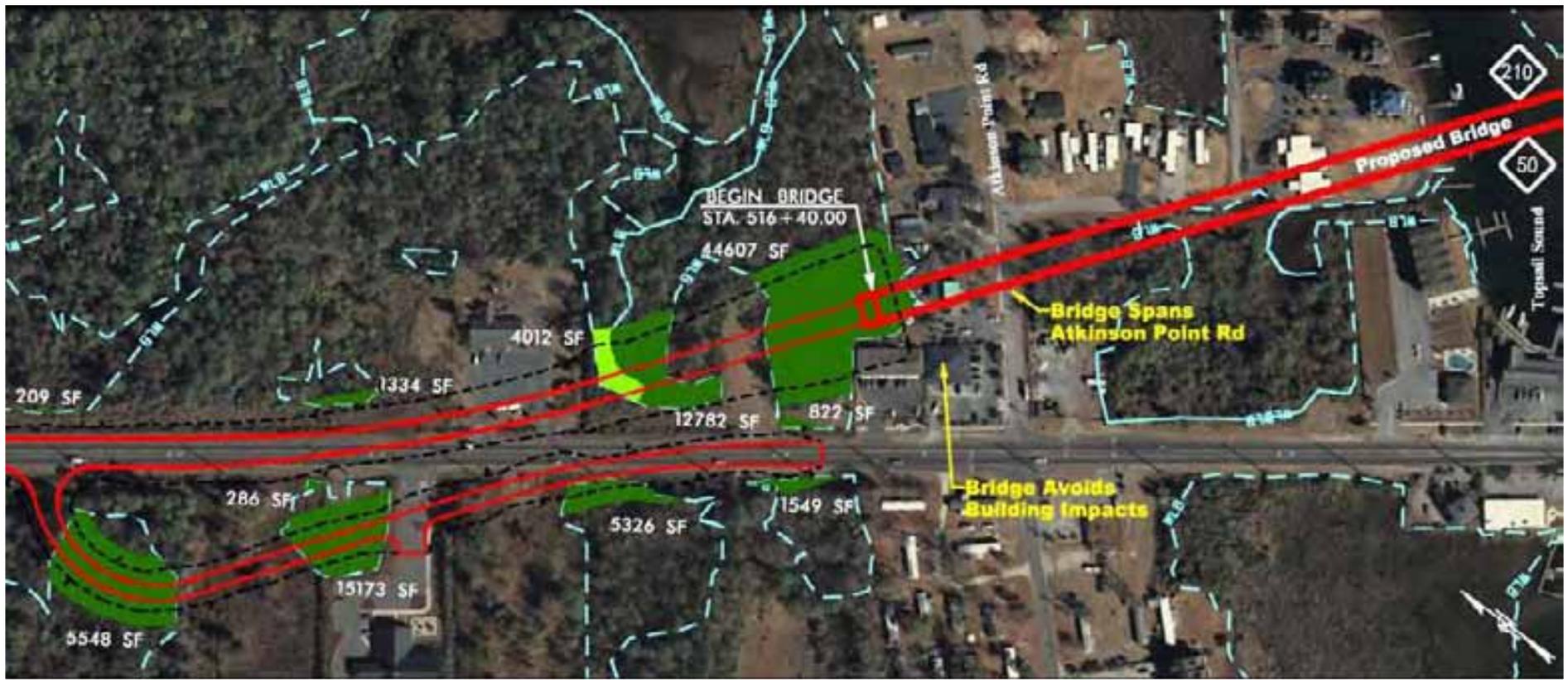
**Begin & End Bridge Locations**

# DSA – ALTERNATIVE 4

- Bridge Length (ft) = 3,750
- Non-Riparian/Riparian Wetlands (acres) = 2.0/0.1



# DSA – ALTERNATIVE 4



**Begin & End Bridge Locations**

# DSA – ALTERNATIVE 4



**Begin & End Bridge Locations**

# DSA – ALTERNATIVE 5

- Bridge Length (ft) = 3,676
- Non-Riparian/Riparian Wetlands (acres) = 2.0/0.2



# DSA – ALTERNATIVE 5



**Begin & End Bridge Locations**

# DSA – ALTERNATIVE 5



**Begin & End Bridge Locations**

# DSA - ALTERNATIVE 5R

- Bridge Length (ft) = 3,654
- Non-Riparian/Riparian Wetlands (acres) = 2.0/0.2



# DSA – ALTERNATIVE 5R



**Begin & End Bridge Locations**

# DSA – ALTERNATIVE 5R



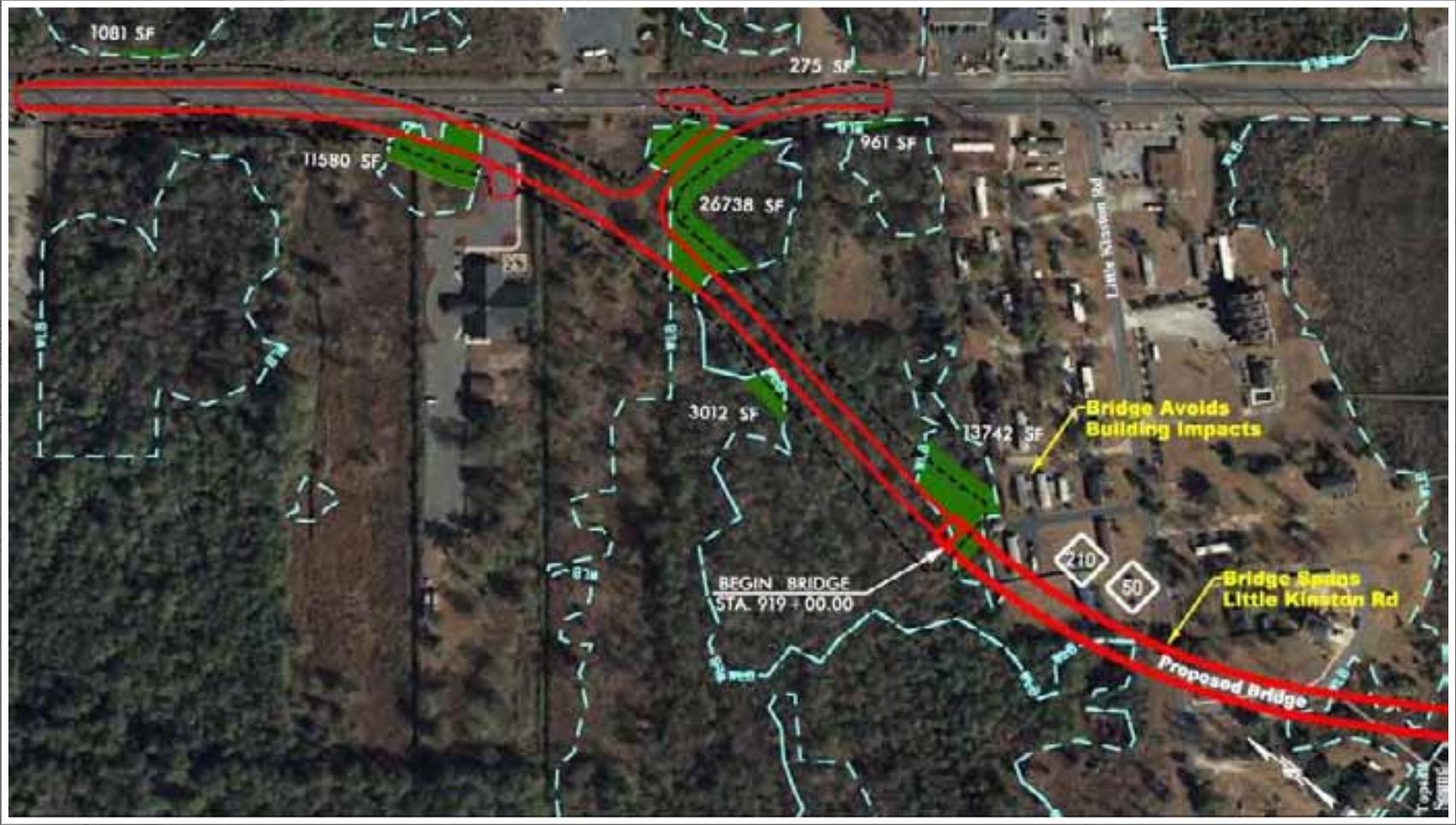
**Begin & End Bridge Locations**

# DSA - ALTERNATIVE 11



- Bridge Length (ft) = 4,040
- Non-Riparian Wetlands (acres) = 1.3

# DSA – ALTERNATIVE 11



**Begin & End Bridge Locations**

# DSA – ALTERNATIVE 11



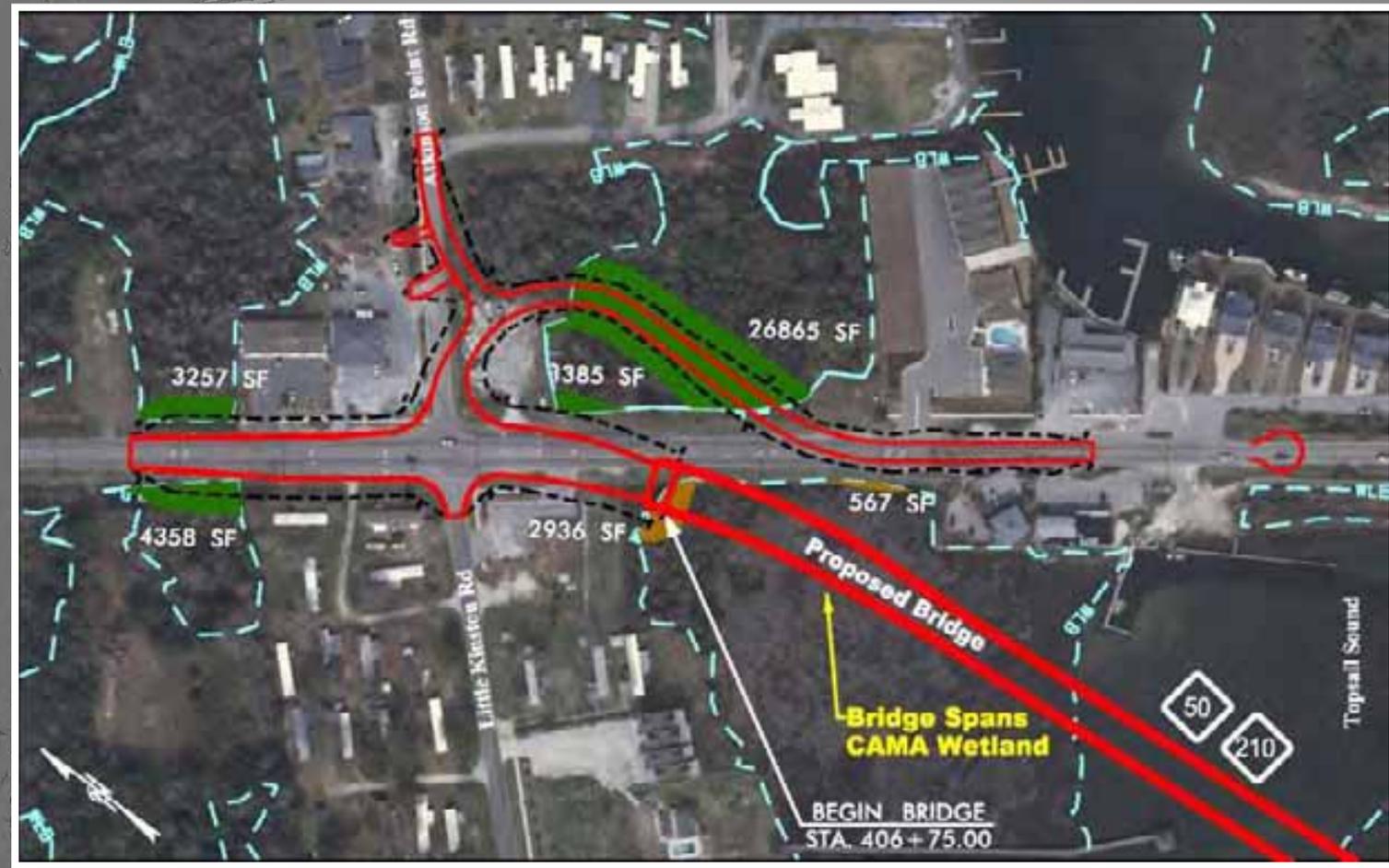
**Begin & End Bridge Locations**

# DSA - ALTERNATIVE 17



- Bridge Length (ft) = 3,725
- Non-Riparian/CAMA Wetlands (acres) = 0.8/0.4

# DSA – ALTERNATIVE 17



**Begin & End Bridge Locations**

# DSA – ALTERNATIVE 17



**Begin & End Bridge Locations**

# ALIGNMENT AND BRIDGING REVIEW

## Impacts to Jurisdictional Wetlands

Detailed Study Alternative No.	CAMA Wetland Impacts (acres)	Non-Riparian Wetland Impacts (acres)	Riparian Wetland Impacts (acres)
Alt 4	-	2.0	0.1
Alt 5	-	2.0	0.2
Alt 5R	-	2.0	0.2
Alt 6	0.3	-	-
Alt 7	0.1	-	-
Alt 11	-	1.3	-
Alt 17	0.4	0.8	-

## Detailed Study Alternatives Bridge Lengths

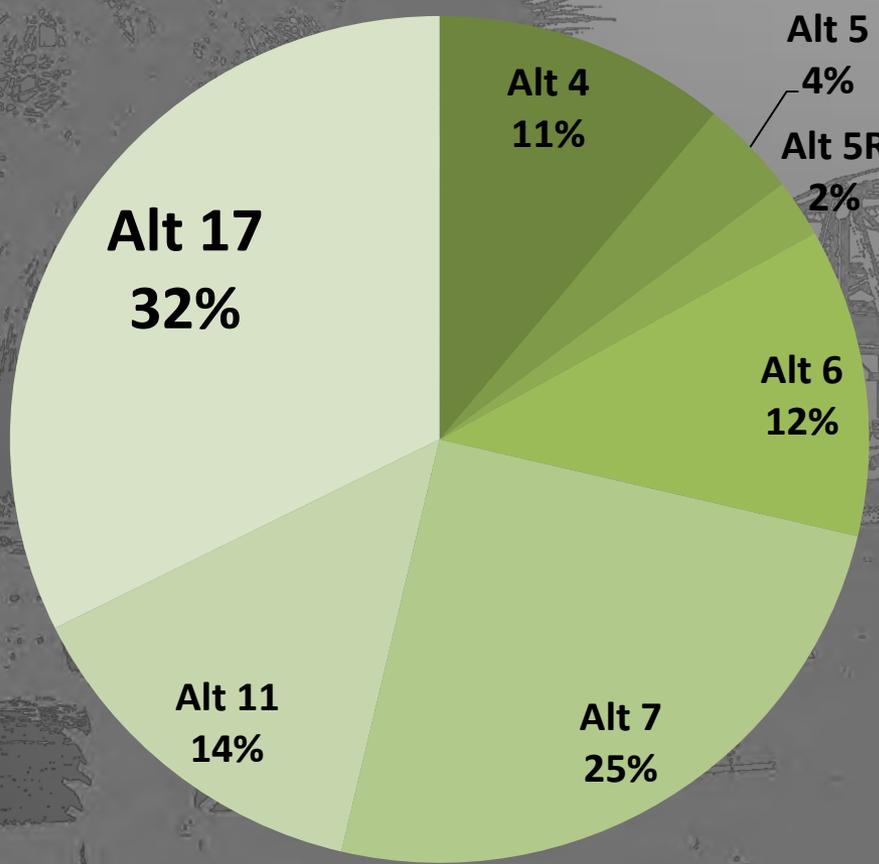
Detailed Study Alternative No.	Begin Station	End Station	Roadway/Hydraulic Control Bridge Length (feet)
Alt 4	516+40	553+90	3,750
Alt 5	615+40	652+16	3,676
Alt 5R	615+40	651+94	3,654
Alt 6	1316+50	1321+70	520
Alt 6 - Detour	21+13	36+00	1,487
Alt 7	1511+50	1521+70	1,020
Alt 7 - Detour	21+13	36+00	1,487
Alt 11	919+00	959+40	4,040
Alt 17	406+75	444+00	3,725

# CP 2A CONCURRENCE

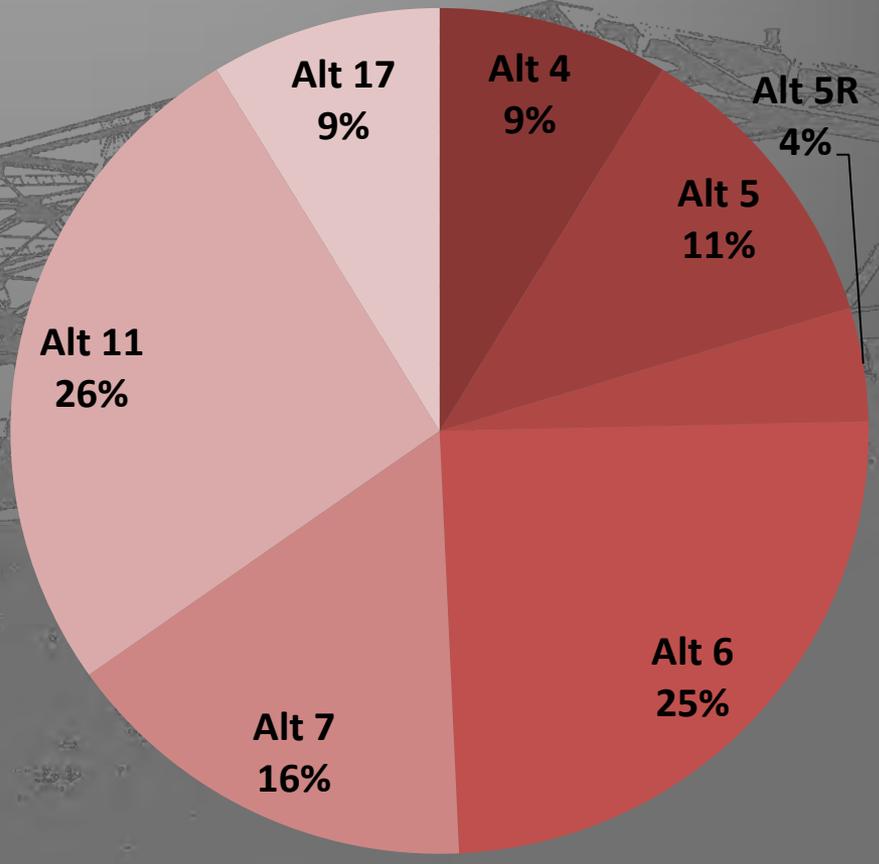
- The Project Team has reviewed the bridging and alignments of the seven DSAs and agreed to carry five of the seven DSAs forward into the CP 3.
- Alternatives 6 & 7 have been eliminated due to their adverse impacts to Soundside Park, a Section 4(f) resource.
- Alternatives 4, 5, 5R, 11, and 17 will be carried forward to CP 3.

# LEDPA / PA – HUMAN ENVIRONMENT

Which alternative is your First Preference? (136 responses)



Which alternative is your Seventh (least) Preference? (69 responses)



\* Refer to Appendix C of the CP 2A and 3 packet for more information

# LEDPA / PA - HUMAN ENVIRONMENT IMPACTS

Category	High-level Fixed Bridge Alternatives					Moveable Bridge Alternatives	
	Alt 4	Alt 5	Alt 5R	Alt 11	Alt 17	Alt 6 (Low-Level)	Alt 7 (Mid-Level)
Citizens preference at Corridor Public Hearing	11%	4%	2%	14%	32%	12%	25%
Direct connection to the Central Business District (CBD)	No	Yes	Yes	No	Yes	Yes	Yes
Residential/Business Relocations (number)	4/5	2/4	13/7	4/1	1/3	0/1	0/3
Right-of-Way Costs	\$12,625,000	\$13,975,000	\$22,250,000	\$9,925,000	\$8,125,000	\$4,975,000	\$6,875,000
Church (Faith Harbor United Methodist Church - property only)	1	1	1	1	-	-	-

- Alternative 17 was selected by citizen as the most preferred.
- Alternative 17 maintains a connection to the existing central business district (CBD). Alternative 4 and 11 do not connect to the CBD.
- Alternative 17 results in the least number of residential and business relocations, where as Alternative 5R results in the highest number of relocations.
- Alternative 17 does not effect local marinas, whereas Alternative 5 impacts the only marina on Topsail Island.
- Alternative 17 replaces the existing swing bridge with a 65' high-level fixed bridge, resulting in elimination of vehicular/vessel delays from bridge openings/closings.

# LEDPA / PA - PHYSICAL ENVIRONMENT IMPACTS

Category	High-level Fixed Bridge Alternatives					Moveable Bridge Alternatives	
	Alt 4	Alt 5	Alt 5R	Alt 11	Alt 17	Alt 6 (Low-Level)	Alt 7 (Mid-Level)
Soundside Park property impacts -- permanent/temporary (acres)	-	-	-	-	0.2	0.03/0.4	0.01/0.4
Known or Potential Hazardous Material Sites (number)	-	1	2	-	3	1	1

- Alternative 17 does not adversely affect the Soundside Park property, resulting in only *de minimis* impacts. Alternatives 6 and 7 are eliminated due to adverse impacts to Soundside Park.
- Alternative 17 impacts to three known or potential hazardous material sites will have minimal impacts to the project's cost and schedule.

# LEDPA / PA - NATURAL ENVIRONMENT IMPACTS

Category	High-level Fixed Bridge Alternatives					Moveable Bridge Alternatives	
	Alt 4	Alt 5	Alt 5R	Alt 11	Alt 17	Alt 6 (Low-Level)	Alt 7 (Mid-Level)
Ponds	-	-	-	-	-	-	-
Stream Crossings (number)	2	2	2	1	1	1	1
Wetlands: non-riparian (acres)	2.0	2.0	2.0	1.3	0.8	-	-
Wetland: riparian (acres)	0.1	0.2	0.2	-	-	-	-
Wetlands: CAMA (acres)	-	-	-	-	0.4	0.3	0.1
<b>Wetlands: Total (acres)</b>	<b>2.1</b>	<b>2.2</b>	<b>2.2</b>	<b>1.3</b>	<b>1.2</b>	<b>0.3</b>	<b>0.1</b>

- Alternative 17 has no impacts to ponds or streams.
- Alternative 17 has the smallest area of non-riparian wetland impacts.
- Alternative 17 CAMA impacts assume a 25' construction buffer. Without this buffer the impact is reduced to 0.15 acres.

# LEDPA / PA - PROJECT COSTS

Category	High-level Fixed Bridge Alternatives					Moveable Bridge Alternatives	
	Alt 4	Alt 5	Alt 5R	Alt 11	Alt 17	Alt 6 (Low-Level)	Alt 7 (Mid-Level)
Right-of-Way Costs	\$12,625,000	\$13,975,000	\$22,250,000	\$9,925,000	\$8,125,000	\$4,975,000	\$6,875,000
Utility Pole Relocation Costs	\$939,090	\$1,361,538	\$1,430,662	\$1,040,170	\$1,015,778	\$12,580,030	\$12,580,030
Construction Costs	\$47,200,000	\$45,600,000	\$45,400,000	\$49,000,000	\$44,600,000	\$50,200,000	\$55,900,000
Bridge Operations and Maintenance Costs (75 Years)	\$3,631,500	\$3,631,500	\$3,631,500	\$3,631,500	\$3,631,500	\$25,964,500	\$25,964,500
<b>Total</b>	<b>\$64,395,590</b>	<b>\$64,568,038</b>	<b>\$72,712,162</b>	<b>\$63,596,670</b>	<b>\$57,372,278</b>	<b>\$93,719,530</b>	<b>\$101,319,530</b>

- Alternative 17 has the lowest construction costs.
- Alternative 17 has the lowest total costs.
- Other alternatives are approximately 10% to 75% higher costs.

# LEDPA / PA



- ✓ Section 4(f)
  - Eliminate DSAs 6 & 7
- ✓ Relocations and lowest public support
  - Eliminate DSA 5R
- ✓ Impacts to Marina and very low public support
  - Eliminate DSA 5
- ✓ Away from CBD and lower public support
  - Eliminate DSAs 4 & 11



## High-Level Fixed Bridge



ARTISTIC RENDERING  
PRELIMINARY - SUBJECT TO CHANGE



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**TOPSAIL ISLAND  
BRIDGE REPLACEMENT**  
SURF CITY, NORTH CAROLINA

BRIDGE  
AHEAD



# *Thank You*



**NCDOT**

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