



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

J. ERIC BOYETTE
SECRETARY

**Replace US 64 Tyrrell County Bridge Number 7 over the Alligator River
TIP HB-0001**

Project Information Package

MERGER TEAM CONCURRENCE POINT 2 and 2A MEETING

April 21, 2021

Meeting Objectives

The objectives of the Concurrence Point 2 and 2A (CP2&2A) meeting are to review the previously studied corridor alignment alternatives for the R-2544/R-2545 project and, considering the revised scope of the HB-0001 project, achieve concurrence on the bridge replacement alignment alternative(s) that should be carried forward for detailed analysis and design (CP 2) for the HB-0001 project. Additionally, the previously proposed R-2544/R-2545 bridge lengths will be reviewed and re-affirmed for the HB-0001 bridge replacement project (CP2A).

Project Description

The North Carolina Department of Transportation (NCDOT) is beginning the planning and environmental studies for the proposed project, HB-0001, Replace US 64 Tyrrell County Bridge Number 7 over the Alligator River. The bridge replacement was previously addressed as part of a previous State of North Carolina (non-federal) Environmental Impact Statement (EIS) Study for the improvement of widening approximately 27 miles of US 64 in Tyrrell and Dare Counties (TIP R-2544/R-2545). The R-2544/2545 project had progressed through the Merger process and CP3 was achieved on February 14, 2013 and CP4A on December 17, 2014. The State environmental review process completed a draft Final Environmental Impact Statement but the FEIS was not signed, and a Record of Decision was not reached. A Merger Screening Meeting was held on January 28, 2021, where it was determined that the HB-0001 project would proceed through the Merger process.

For the HB-0001 project, NCDOT proposes a two-lane, high-level, fixed-span bridge on the R-2544/2545 LEDPA centerline. This will allow the project to re-consider and potentially re-approve previous concurrence points based on the LEDPA alignment. Resources will be re-evaluated for the proposed study area as part of the HB-0001 project.

HB-0001 is included as an amendment to the 2020-2029 NCDOT State Transportation Improvement Program (STIP) and is programmed for planning and environmental studies only. NCDOT is preparing a federal Categorical Exclusion (CE; Type III) for the project, with Federal Highway Administration (FHWA) as the lead federal agency. NCDOT anticipates that the project will utilize previously established Merger decisions and continue through the Merger process.

Purpose and Need of the Project

A virtual Concurrence Point 1 Meeting was held on March 10, 2021 where the project details and environmental features were presented and discussed. After reviewing the project data sheets and figures which showed the project vicinity, proposed study area, environment features, close ups of the bridge approaches, and the proposed alignment relative to the Alligator River National Wildlife Refuge boundary on the Dare County approach, the Merger Team reached concurrence on the following purpose and need:

The **NEED** for the proposed project

The current bridge is experiencing substantial deterioration due to its age and structural deficiencies resulting in ongoing maintenance problems, jeopardizing its ability to provide a reliable connection between Columbia and Manns Harbor, Manteo, and the Outer Banks. The **NEED** for the project is demonstrated by the following summary of existing and projected conditions:

- Replacement is critical due to the age and structural deficiency of the bridge. The existing bridge is a 2.83-mile long, 2-lane bridge consisting of 343 spans with a moveable steel swing span. The bridge was constructed in 1960 and is classified as structurally deficient with a 31.71 rating of a possible 100.
- The existing bridge requires costly, heavy maintenance on a regular basis and requires constant smaller maintenance activities to keep the swing mechanism operational.
- Approximately 3 years ago a \$17 million major rehab project was constructed, consisting of several hundred pile jackets, concrete repair, deck surfacing, and a major mechanical overhaul of the swing mechanism and controls. Similar rehabilitation efforts will be needed with the next 7 years.
- Even with the major rehab, the Division is required to perform regular work to maintain the swing mechanism, which has a history of malfunction resulting in closure of the bridge to vehicular travel. The mechanical parts, gears, and controls are not readily available and require custom fabrication with long lead times to acquire and replace.
- The existing Lindsay C. Warren bridge traffic will need to be maintained during construction of the new bridge. Depending on duration of construction, regular maintenance of the existing bridge may also need to occur. Vertical navigational clearance will need to be approved by the US Coast Guard and marine passage along the Intracoastal Waterway will need to be maintained during construction.

The **PURPOSE** of the proposed project is to:

- To replace the existing 2.83-mile-long Lindsay C. Warren Bridge, Tyrrell County Bridge number 7, carrying US 64 across the Alligator River with a two-lane, high-level, fixed-span bridge.

The Merger Team also reached concurrence on the project study area for HB-0001, as detailed below:

Project Study Area

The proposed project study area was developed to address the above-stated purpose and need for HB-0001. The project study area boundaries are fully depicted on Figure 1 of the CP1 Merger Packet and are described as follows:

- The project study area extends 250-feet on either side of the proposed HB-0001 centerline and 50-feet on either side of the existing Lindsay C. Warren bridge.

Previous Concurrence Point 2 & 2A Meetings for the R-2544/R-2545 Project

A series of Merger Meetings for Concurrence Points 2 and 2A were held between June and October 2008, during which, the Merger Team was presented with multiple corridors that were broken into five (5) Sections for analysis purposes. Within each Section, there were multiple sub-sections that allowed for differing alignment alternatives that attempted to avoid or minimize impacts to the identified resources in each Section. For purposes of the HB-0001 project, only Section 2 (Tyrrell approach), Section 3 (bridge over the Alligator River), and Section 4 (Dare County approach) are being analyzed.

Refer to the attached figures for the following discussions related to the original corridor alignments below:

- **Figure 1** “August 21, 2008 Concurrence Point 2 – Alternative Corridors to be Studied in Detail in the NEPA Document”
- **Attachment 1** “Concurrence Point 2A Bridge Corridors, October 15, 2009”
- **Figure 2-9** “Preliminary Bridge Replacement Corridors Sections 2, 3, and 4”

Figure 1 references the original R-2544/R-2545 corridor designations presented at the CP2 Merger Meeting in 2008, Attachment 1 shows the bridge corridors that progressed from the CP2A meeting in 2009, and Figure 2-9 shows the alignment corridors that were included and evaluated in the R-2544/R-2545 Draft Environmental Impact Statement (DEIS, January 2012), including the corridor that was ultimately determined to be the LEDPA.

In addition, a brief summary of the previous CP2 and CP2A meetings, detailing the key decisions and associated outcomes, is attached for reference (*HB-0001 White Paper; History of Previous Merger Process on R-2544/R-2545 Project*). This white paper includes the following table that shows each of the original corridor alternatives analyzed during the R-2544/R-2545 Merger Process and when it was eliminated. If eliminated, a brief description of why it was removed is included and the decision/rationale listed refers to a previously completed R-2544/R-2545 Merger Document, shown in parenthesis.

Table 1: R-2544/R-2545 Corridor Alternatives Considered during the Merger Process

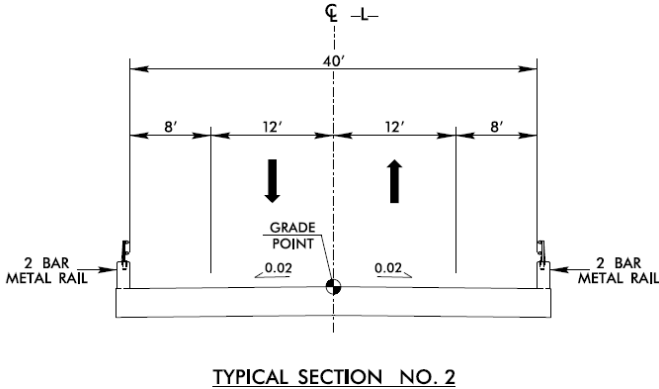
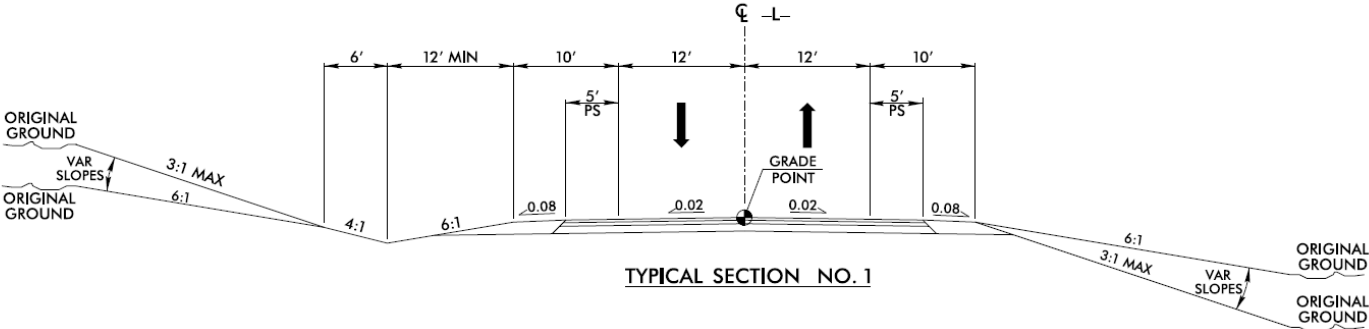
	Alternative	CP1	CP2	CP2A	CP3	LEDPA
Tyrell County Alternatives	2A		Removed: habitat fragmentation, opposition from ARNWR, greater wetland impacts (CP2 Meeting Minutes 8-25-08 P.8)			
	2B			Removed: Coastal Wetland Impacts, major fragmentation, creation of remnant/linear Coastal Wetlands between new corridor and existing ROW; elimination of direct access to US 64 which would impact the Marina; fragment coastal wetland habitat; Impacts to ARNWR (CP2A Meeting Summary Memo)		
	2C		Removed: impacts to Marina would be detrimental (CP2 Meeting Minutes 8-25-08 P.11) & (CP2 Merger Packet P.17)			
	2D					Selected
	2E		Removed: Greater wetland impacts, additional bridge length, addition cost, habitat fragmentation (CP2 Meeting Minutes 8-25-08 P.11) & (CP2 Merger Packet P.17)			
Dare County Alternatives	4A		Removed: habitat fragmentation, opposition from ARNWR, greater wetland impacts (CP2 Meeting Minutes 8-25-08 P.11)			
	4B			Removed: concerns over impacts to Coastal Wetlands, fragmentation of habitat, and impacts to ARNWR (CP2A Meeting Summary Memo)		
	4C				Removed: Compared to 4G, has higher impacts essential fish habitat, CAMA Resources, coastal wetlands and increase ARNWR Fragmentation	
	4D				Removed: Significant ARNWR fragmentation, wetland impacts, longest bridge span, most costly (CP3 Meeting 1 Presentation) Agreement in Meeting Minutes	
	4E		Removed: Greater wetland impacts, additional bridge length, addition cost, habitat fragmentation (CP2 Merger Packet P.17)			
	4F				Removed: Compared to 4G, has higher impacts essential fish habitat, CAMA Resources, coastal wetlands and increase ARNWR Fragmentation (CP 3 Meeting Minutes)	
	4G			Created: Additional alternative that is south of the old ferry terminal that goes south of US 64 and the East Lake Community (CP2A Amendment) This alternative was also created in response to public input at the Citizens Information Workshop which occurred on March 14, 2007		

Detailed Study Alternatives Carried Forward (CP2)

HB-0001 Typical Section

The HB-0001 project proposes a 2-lane roadway and bridge, with 10' shoulders (5' paved on the approaches) and 8' paved on the bridge. For the HB-0001 bridge replacement project, the previously developed alignment corridors for the R-2544/R-2545 bridge approaches and new bridge are being used to develop updated impacts that will be compared to the current HB-0001 corridor to affirm that the current alignment is still the LEDPA for this bridge replacement project.

The proposed typical sections for the approaches (Typical Section No. 1) and the bridge deck (Typical Section No. 2), as well as the associated design criteria outlining the parameters for the roadway approach typical section are shown below:



PROPOSED DESIGN CRITERIA

STATE PROJECT: HB-0001
 F. A. PROJECT:
 COUNTY: Tyrrell and Dare
 PROJECT DESCRIPTION: US 64 from East of Columbia, Tyrrell County to US 264 In Dare County
 PREPARED BY: DJO

HB-0001
 1 of 2
 2/24/2021

ROUTE LINE	US 64 -L-	REFERENCE OR REMARKS
TRAFFIC DATA		
ADT LET YR -		
ADT DESIGN YR -		
2025 Summer Weekday/Summer Weekend	6200/10000	US 64 Traffic Tech Memo
TTST	4%	US 64 Traffic Tech Memo
DUALS	3%	US 64 Traffic Tech Memo
DHV	10%	US 64 Traffic Tech Memo
DIR	60%	US 64 Traffic Tech Memo
CLASSIFICATION	Principal Arterial	NCDOT Functional Class Maps
TERRAIN TYPE	Level	** Part 1 1-1D Terrain Classifications
DESIGN SPEED mph	60 mph	* PG. 7-3
POSTED SPEED mph	55 mph	** Part 1 1-1B
PROP. RW WIDTH ft	150 ft	** Part 2 9-1
CONTROL OF ACCESS	Partial	Wildlife and R/W Fencing
RUMBLE STRIPS (Y/N)	N	** Part 1 1-4P
TYPICAL SECTION TYPE	2-Lane Shldr	
LANE WIDTH ft	12 ft	* PG. 7-7 Table 7-3
SIDEWALKS (Y/N)	N	
BICYCLE LANES (Y/N)	N	
MEDIAN WIDTH m or ft	N/A	
MED. PROTECT. (GR/BARRIER)	N/A	
SHOULDER WIDTH (total)		
MEDIAN m or ft	N/A	
OUTSIDE w/o ft	10 ft	**1-4B F-1A
OUTSIDE w/ GR ft	13 ft	** Part 1 1-4B F-1A
PAVED SHOULDER		
OUTSIDE TOTAL/FDPS ft	4 ft/4 ft	** Part 1 1-4O
MEDIAN TOTAL/FDPS ft	N/A	
GRADE		
MAX.	3%	* PG. 7-6 Table 7-2
MIN.	0.3 %	* PG. 3-130
K VALUE		
SAG	K=136	* PG. 3-176 Table 3-37
CREST	K=151	* PG. 3-170 Table 3-35
HORIZ. ALIGN.		
MAX. SUPER.	.06	** Part 1 1-15
MIN. RADIUS m or ft	1330 ft	* PG. 3-43 Table 3-9
SPIRAL (Y/N)	Y	** Part 1 1-11
CROSS SLOPES		
PAVEMENT	0.02	** Part 1 1-3B
PAVED SHOULDER	0.02	NCDOT 2018 Roadway Standard Drawing 560.02
TURF SHOULDER	0.08	NCDOT 2018 Roadway Standard Drawing 560.02
MEDIAN DITCH	N/A	
DITCH TYPICAL (A,B,C)	A	** Part 1 1-2A F-1
CLEAR ZONE ft	30 ft	*** PG. 3-3
TYPICAL SECTION NO.	1	

NOTES:
 *AASHTO GEOMETRIC DESIGN OF HIGHWAYS AND STREETS 2018
 **NCDOT ROADWAY DESIGN MANUAL
 ***AASHTO ROADSIDE DESIGN GUIDE 2011

HB-0001 Corridor Alignment

To compare the proposed HB-0001 alignment with the previously developed corridor alignments for R-2544/R-2545, the Project Team has consolidated and simplified the original naming conventions of the alignment corridors shown in Figure 2-9 as listed in **Table 2** below:

Table 2: Cross-Reference of Original and Current Corridors Being Evaluated

HB-0001 Corridor Color	R-2544/R-2545 Corridor Designation										
	2A (Tyrrell South 1)	2B (Tyrrell South 2)	2C,D,E (Tyrrell North)	2D (Dare North 2)	4A (Dare South 1)	4B (Dare South 2)	4C (Dare North-Side Widening)	4D (Dare Northern Bypass)	4E* (Dare Northern Bypass Extension)	4F (Dare South-Side Widening)	4G (Dare Southern Bypass)
Orange			X					X			
Teal			X	X							
Pink	X				X						
Magenta 1			X				X				
Magenta 2			X						X		
Brown		X				X					
Red (HB-001)			X	X							X

**NOTE* Corridor 4D (Dare Northern Bypass Extension) is not being evaluated as part of the HB-0001 project.*

The R-2544/R-2545 project progressed through the completion of Concurrence Point 4A before the project was suspended. Information, data, and the decisions made during the previous Merger Meetings was used to develop the initial HB-0001 corridor alignment that most closely resembled the combination of the Tyrrell North, Dare North 2, and Dare Southern Bypass corridors from the R-2544/R-2545 project. A minor alignment shift on the Dare County side was added that avoids impacting the Alligator River Wildlife Refuge.

Impact Table

As previously noted, the HB-0001 project proposes a 2-lane roadway and bridge typical section instead of the wider, 4-lane median divided typical section included in the R-2544/R-2545 project. The project limits for the HB-0001 project are also much shorter in length than the previously studied R-2544/R-2545 project.

To compare the HB-0001 alignment with the previously evaluated corridors, the Project Team applied a standard slope stake width of 120' plus a buffer of 25' on either side, resulting in a total footprint width of 170', as a template to overlay on the original environmental resource GIS data used during the development of the 2012 DEIS. This GIS exercise resulted in the impact comparison table shown below (see **Table 3**). Note that the R-2544/R-2545 bridge lengths previously discussed during the original Merger Process are not being used for this impact calculation exercise since detailed design information (e.g., pier locations, beginning point for the bridge deck, fill slopes for the approaches, etc.) was not readily available for all the alignment corridors, and because the bridge length for the HB-0001 project has not yet been determined.

Therefore, to ensure a consistent comparison between the original R-2544/R-2545 corridors and the HB-0001 corridor, the impacts in **Table 3** were calculated based on each bridge approach extending to the

existing shoreline on each side of the Alligator River. This impact calculation methodology captures the worst-case scenario by assuming the longest possible roadway approach, and therefore, the greatest amount of terrestrial and jurisdictional impacts, while applying the impact calculation process equally to all the alignment corridors being evaluated.

Table 3: Impact Calculations

Impacted Resources (using 2012 data from the original R-2544/R-2545 DEIS, except as noted)	Detailed Study Corridor Carried Forward (R-2544/R-2545 DEIS)							Notes
	Orange	Teal	Pink	Magenta 1	Magenta 2	Brown	HB-0001	
Built Environment								
Underground Storage Tanks (UST)	0	0	0	0	0	0	0	
Cultural Resources	1	1	1	1	1	1	1	only 1 (one) resource and is present on all alternative, the Lindsey C. Warren Bridge No. 7 (Determined Eligible)
Relocated Structures	1	3	3	14	13	13	0	
Communication Tower	0	1*	0	1**	1**	1**	0	*impacts a cell tower, north of US 64 and west of the Alligator River Marina, on the western approach **impacts a cell tower, south of US 64 and just west of the East Lake Community, on the eastern approach
Cemetery	0	0	0	0	0	0	0	
Managed Areas (acres)								
Alligator River Gameland	10.1	11.4	19.2	15.3	15.3	26.9	1.6	
Alligator River National Wildlife Refuge	15.2	27.3	50.8	21.9	25.1	36.9	0.0	
Great Dismal Swamp Wetland Mitigation Bank Phase 1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
J. Morgan Futch Gameland	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Palmetto-Peartree Preserve (original DEIS data)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Palmetto-Peartree Preserve (Jan 2021 NHP marea data)*	7.0	1.9	0.0	0.5	0.5	0.0	5.9	
Natural Environment (Acres)								
Prime Farmland	52.1	62.2	36.4	60.0	59.6	54.5	12.1	All acres are "Prime if Drained" except 15.47 acres of the Orange Alt which is "Farmland of Statewide Importance"
Soils Impacts (Including Estuarine Open Water)	86.2	89.8	83.2	93.6	93.4	94.1	30.7	
Plant Communities (excludes M/D and Ag land)	58.4	61.0	50.4	61.5	64.1	79.6	23.7	
Canal Relocation	1.4	3.5	0.1	8.5	4.9	0.7	1.7	
T&E Species Habitat	15.7	15.3	11.8	15.5	15.5	14.9	6.3	
Essential Fish Habitat (Alligator River)	yes	yes	yes	yes	yes	yes	yes	
CAMA Resources (Acres)								
Estuarine Public Trust Waters	0.9	3.7	0.0	6.5	3.9	0.0	1.2	
Inland Public Trust Waters	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Inland Public Trust Waters Shorelines (30 feet)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Estuarine Public Trust Waters Shorelines (75 feet)	7.3	14.5	0.1	17.4	14.1	3.1	5.1	
Outstanding Resource Waters Shorelines (575 feet)	0.0	0.0	4.7	2.5	2.5	6.4	0.0	
Coastal Wetlands	0.2	5.4	0.0	7.9	11.7	17.7	1.0	
Non-CAMA Resource (Acres)								
Wetlands	78.2	54.8	81.0	49.8	46.4	58.7	21.2	

*The boundary for the Palmetto-Peartree Preserve was expanded in 2019 to include a parcel that abuts the HB-0001 alignment on the Tyrrell County approach. Impacts shown in this table are based on the new 2019 boundary from the 2021 Natural Heritage Program's marea data.

Bridging Decisions and Alignment Review (CP2A)

Because the HB-0001 project is primarily a bridge replacement project, with minor roadway approach alignments, and is no longer proposing any widening or realignment improvements to the larger, U.S. 64 corridor between Columbia and Manteo, NC, the bridging decisions to be discussed as part of the Merger Process for this project have been detailed in the information provided above.

Specific bridge design details related to pier locations, span lengths, deck heights above the river surface, minimum hydraulic openings, etc., will all be addressed during the subsequent final design phase of the project and will be presented to the Merger Team for review during the CP4A, CP4B, and CP4C meetings. For purposes of the Merger process for HB-0001, the CP2A decision will consist of constructing a new bridge, parallel to and north of the existing Lindsey C. Warren Bridge No. 7, as shown in the attached figures and discussed in the CP2 information listed in this Merger Package.

If you have any questions concerning the project, please contact John Conforti, Senior Project Manager, at 919-707-6015 or by email at jgconforti@ncdot.gov. Please include the STIP Project Number (HB-0001) in all correspondence and comments.

JGC/cmy

Attachments:

- **Figure 1** “August 21, 2008 Concurrence Point 2 – Alternative Corridors to be Studied in Detail in the NEPA Document”
- **Attachment 1** “Concurrence Point 2A Bridge Corridors, October 15, 2009”
- **Figure 2-9** “Preliminary Bridge Replacement Corridors Sections 2, 3, and 4”
- **HB-0001 White Paper:** *History of Previous Merger Process on R-2544/R-2545 Project*

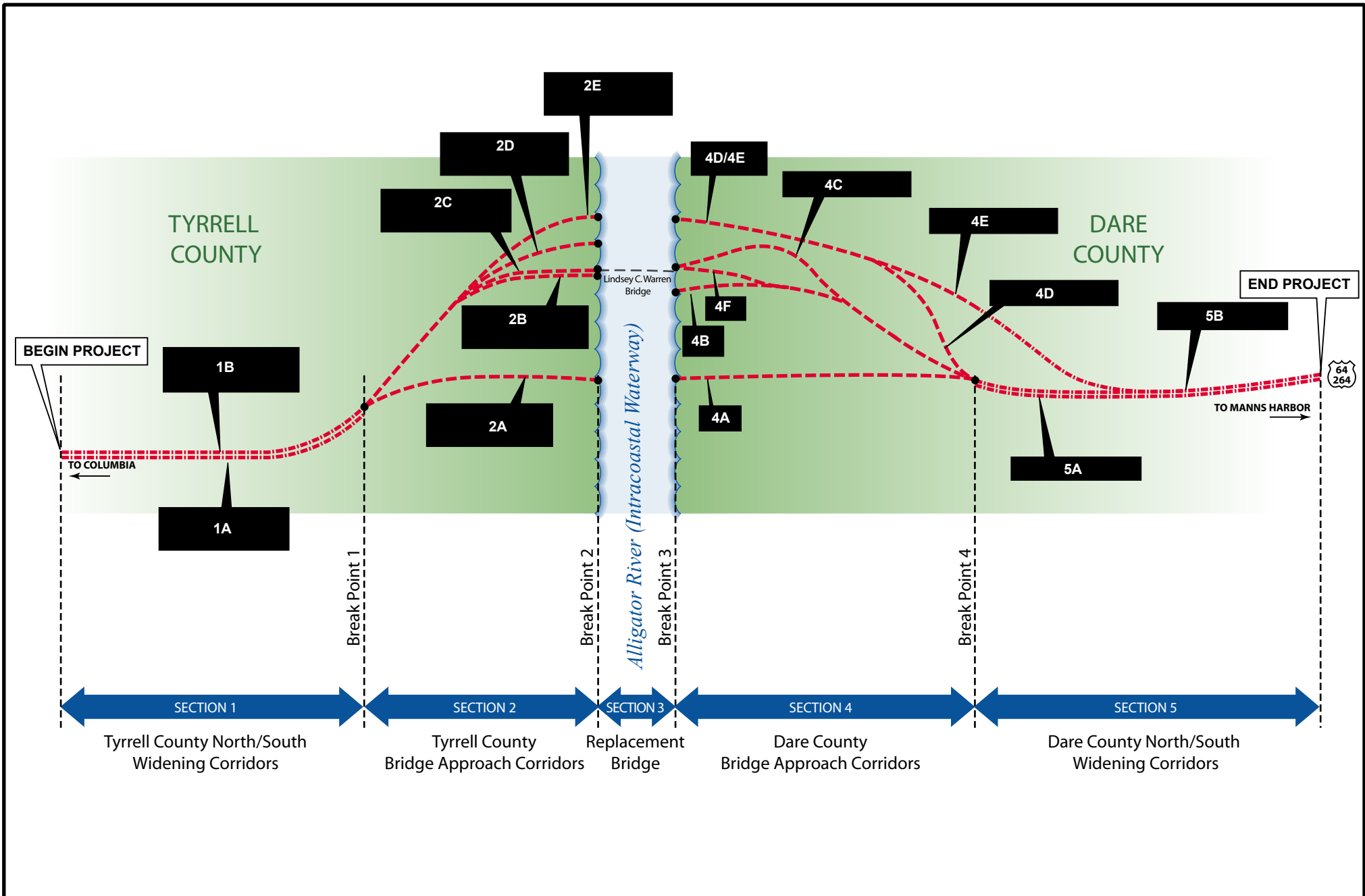
HB-0001 PROJECT DATA SHEETS	
Proposed Project Details	
Project Description	<p>The project would replace the existing US 64 Tyrrell County Bridge No. 7 (Lindsay C. Warren Bridge) over the Alligator River in Tyrrell and Dare Counties. The existing bridge is a two-lane, swing bridge and would be removed as part of the project. The proposed replacement structure would be a modern two-lane, high-level, fixed-span bridge providing a vertical navigable clearance of 65-feet. Total project length is approximately 4.64 miles.</p> <p>The project study area extends 250-feet on either side of the proposed HB-0001 centerline and 50-feet on either side of the existing Lindsay C. Warren bridge. See Figure 1 for project limits and study area.</p>
Project Limits	The project starts in Tyrrell County on US-64, just west of Fort Landing Road (Sta. 662+50). The new bridge alignment diverges from the existing US 64 alignment and passes north of the existing marina/convenience store and crosses the Alligator River to the north of the existing Lindsay C. Warren Bridge. The project ends in Dare County and ties back in to the existing US64 past Old Ferry Landing Road (Sta. 907+60).
Typical Section	High-span bridge, undivided, with 12-foot travel lanes and 10-foot outside shoulders (5' paved on the approaches) and 8' paved shoulders on the bridge (40-foot clear roadway width).
Access Control	Arterial bridge
Design Speed	60 mph
Right-of-Way Width	150 feet
Physical or Engineering Constraints	The replacement bridge would be designed in accordance with the latest version of the AASHTO Guide Specifications for Bridges Vulnerable to Coastal Storms. Vertical navigational clearance will need to be approved by the US Coast Guard.
Other Considerations	The existing Lindsay C. Warren bridge traffic will need to be maintained during construction of the new bridge. Depending on duration of construction, regular maintenance of the existing bridge may need to occur. Marine traffic will also continue using the existing channel, except for the replacement of the existing channel, and the swing span bridge would continue to function.
Survey Request Date	Surveys requested in March, 2021 and will be delivered by August 2, 2021
Design Plan	N/A
Construction Recommendation	N/A
Construction Recommendation	N/A
Consultant Involvement	As of March 1, 2021, Three Oaks Engineering is now the Prime Consultant for planning, with Summit providing preliminary design as a subconsultant.
Essential Project Information	
STIP Project Name	Replace US 64 Tyrrell County Bridge Number 7 over the Alligator River

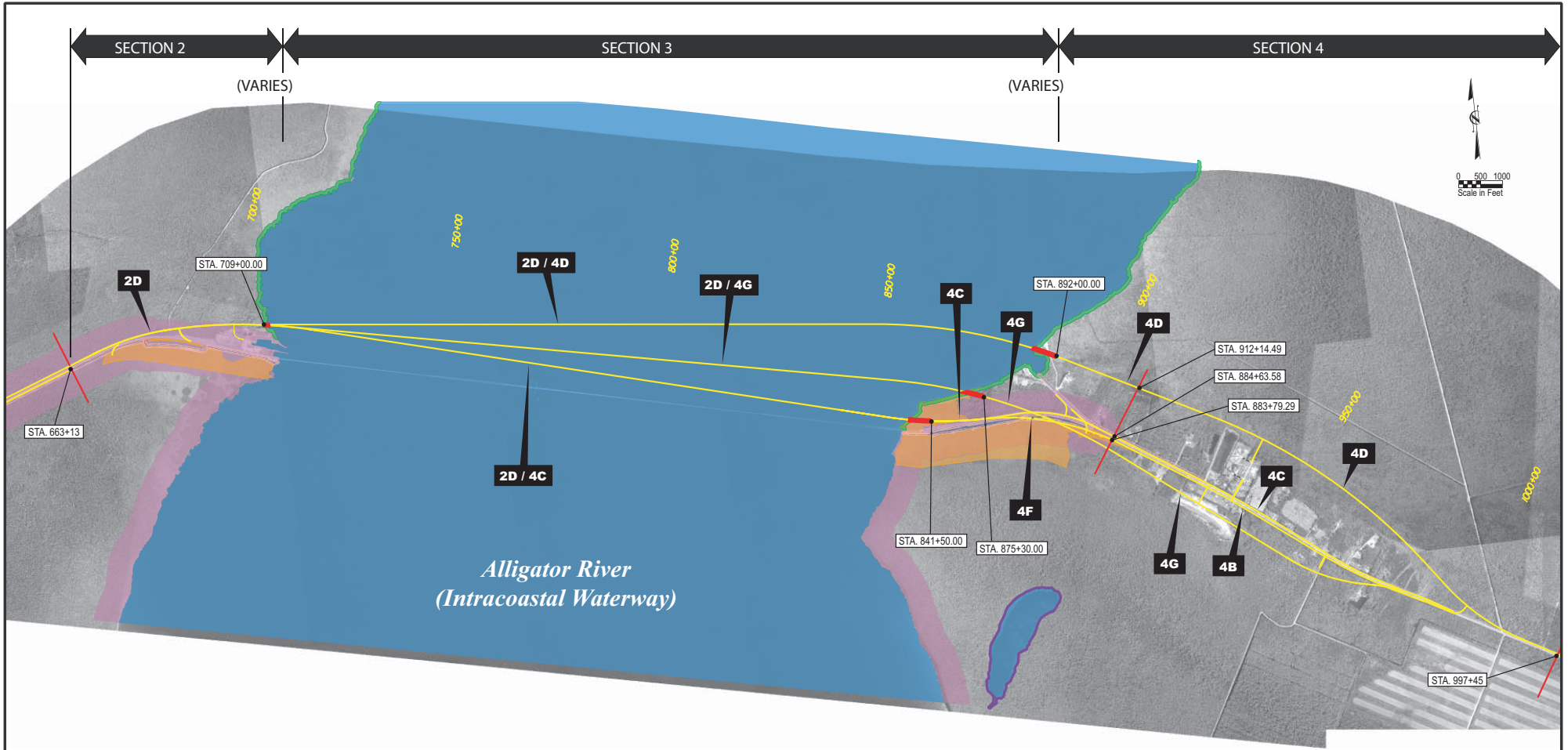
STIP Number	HB-0001
County	Dare & Tyrrell Counties
NCDOT Division	Division 1
ROW Date	N/A
LET Date	N/A
Schedule Considerations	The project is anticipated to have a completed environmental document (Type III Categorical Exclusion) in July 2021.
Cost Estimates	The project is unfunded in the TIP. Construction cost estimated at \$135 million. This estimate was based on a two-lane 40-foot clearance width. There are currently no utility or right-of-way costs.
Funding Type	The project is funded for planning and environmental study only.
Project History	
Planning Studies	This project was originally included as part of a larger project, R-2544/2545. A state Draft Environmental Impact Statement was completed in 2012. A Final Draft Environmental Impact Statement was drafted but the project did not reach a signed Record of Decision.
SPOT Description	N/A
Feasibility Studies	A Feasibility Study for express design and cost estimating was completed in 2014 for the bridge portion of TIP project R-2544/2545
Problem Statement	The existing Lindsay C. Warren Bridge was constructed in 1960 and is classified as structurally deficient with a 31.71 rating. The existing bridge requires heavy maintenance on a regular basis, and mechanical parts are not readily available and typically require custom fabrication.
Alternatives Previously Dismissed and Why	Four bridge alignment alternatives were eliminated from further study in the Draft EIS for the R-2544 & R-2545 project. Four alternatives were carried forward to the Final EIS. The primary reason for eliminating corridors, including bridge alternatives, were potential for substantial impacts to wetlands, substantial impacts to the ARNWR, and more costly bridge replacements.
Purpose & Need	
Purpose	To replace the existing 2.83-mile-long Lindsay C. Warren Bridge, Tyrrell County Bridge number 7, carrying US 64 across the Alligator River
Need(s)	Replacement is critical due to the age and structural deficiency of the bridge. The existing bridge is a 2.83-mile long, 343 span structure with a moveable steel swing span. The bridge was constructed in 1960 and is classified as structurally deficient with a 31.71 rating of a possible 100. The existing bridge requires costly, heavy maintenance on a regular basis and requires constant smaller maintenance activities to keep the swing mechanics operational. Approximately 3 years ago a \$17 million major rehab project was constructed, consisting of several hundred pile jackings, concrete repair, deck surfacing, and a major mechanical overhaul of the swing mechanism and controls. Similar rehabilitation efforts will be needed within the next 7 years. Even with the major rehab, NCDOT is still required to perform regular work to maintain the swing mechanism, which has a history of malfunction

	<p>resulting in closure of the bridge to vehicular travel. The mechanical parts, gears, and controls are not readily available and require custom fabrication with long lead times to acquire and replace. In case of malfunction, the available detour is 94 miles long – from Columbia south on NC 94 and then east on US 264 from Swan Quarter to Mann’s Harbor. US 64 is a critical hurricane evacuation route that must remain operational during storm events. During storm events, the detour routes are often adversely affected by storm water that can hamper effective evacuation.</p>
<p>Public and Agency Coordination</p>	
Anticipated Permits	<p>Section 404 Individual or General Permit, Section 401 Water Quality Certification, Coast Guard bridge permit, CAMA Major Development Permit. The R-2544/2545 project completed Section 7 formal consultation with the USFWS for the red-cockaded woodpecker (RCW) and resulted in the issuance of a Biological Opinion. Consultation with the USFWS will be re-initiated for HB-0001.</p>
Federal Agency Involvement	<p>The Federal Highway Administration (FHWA) will be the lead federal agency; the U.S. Army Corps of Engineers (USACE) has jurisdiction over Waters of the United States. Other federal agencies with jurisdiction of resources inside the project area include the U.S. Fish and Wildlife Service, National Marine Fisheries Service, and US Coast Guard.</p>
Public Involvement Strategy	<p>TPD</p>
Merger Screening Date	<p>The R-2544/2545 project was in Merger and Concurrence Point 3 (LEDPA) was achieved in 2013 and CP4a in 2014. HB-0001 will re-affirm prior decisions and re-establish CP3 with the merger co-chairs and proceed to CP4a.</p> <p>A merger Co-chair meeting was held, was held on January 28 to determine the Merger status of HB-0001. The Project will be in Merger.</p>
Potential Merger Triggers	<p>Wetlands, ARNWR, Coast Guard, NC DCM/CAMA</p>
<p>Existing Conditions</p>	
Functional Classification	<p>Principal Arterial - Rural bridge</p>
Strategic Transportation Corridor	<p>US 64 E is part of Strategic Transportation Corridor M</p>
AADT	<p>A traffic forecast was completed by NCDOT in 2007 to support the R-2544/2545 project. It was recognized that operations during summer peak periods was critical to understanding traffic operations. Traffic counts were completed between Memorial Day to Labor Day in 2006.</p> <p>2006 summer weekday: 3,400 2006 summer weekend: 5,500</p> <p>According to NCDOT traffic data AADT in 2019 was counted as 4,400.</p>
Access Control	<p>No access control</p>


Typical Section	Rural two-lane, undivided, 11-foot travel lanes with 2-foot shoulders (26 ft clear roadway width).
Right-of-Way Width	100 feet
Posted Speed	55 mph
Structures (bridges, RCBC, etc.)	US 64 Alligator River Bridge #880007
Railroad Involvement	N/A
Other Adjacent STIP Projects	R-5940; Columbia to Alligator River Bridge, Modernize Roadway; Right-of-way 2028
Preliminary Resource Inventory Table	
Utilities	No utility relocations were identified within the HB-0001 study area during the R-2544/2545 environmental document. Utilities will be reviewed for the HB-0001 project.
Hazardous Materials	The existing marina/convenience store on the west side of Alligator River in Tyrrell County has existing groundwater and soil contamination. The R-2544/2545 project determined that the site is likely to present a low potential for impacts. The HB-0001 project will re-assess the site for the environmental document.
Known Potentially Eligible National Register of Historic Places Sites/Districts	HB-0001 would result in demolition of the existing Lindsay C. Warren Bridge, a bridge determined eligible for listing in the NRHP in 2003. The R-2544/2545 project reached a Memorandum of Agreement with the NC HPO. The existing MOA would be reviewed with the NC HPO and modified as needed for the HB-0001 project.
Other Cultural Resources	N/A
Wetlands	There are coastal and jurisdictional wetlands on either side of the HB-0001 project in both Tyrrell and Dare counties. Significant efforts were made during the R-2544/2545 project to minimize impacts to wetlands. The addition of two proposed wildlife crossings would enhance the value of adjoining wetlands and wildlife habitat by improving connectivity, maintaining established wildlife corridors, and increasing opportunities for foraging and for shelter. Compensatory mitigation will be determined during consultation with the USACE and NCDEQ-DWR.
Streams	N/A
FEMA Floodplain Detailed Study Area	The project study area is within FEMA Zone AE (Special Flood Hazard Area subject to inundation by the 1 percent annual chance

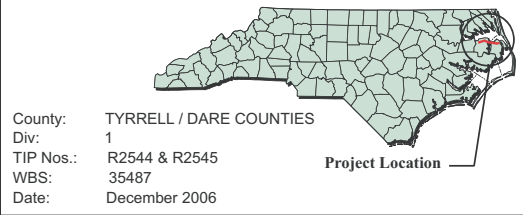
	flood; base elevations determined).
Water Supply Watersheds	N/A
Riparian Buffer Rules	N/A
Active Agriculture	N/A
Parks, Greenways, Game Lands, Section 4(f) & Section 6(f) Properties	There are several managed resources on either side of the HB-0001 project, including the Alligator River Game Land, Alligator River National Wildlife Refuge,
Environmental Justice Populations	East Lake Community is on the eastern edge of the HB-0001 study area.
Other Resources (i.e., Wild and Scenic Rivers, TVA, Scenic Byways, etc.)	N/A












US 64 Improvements Project
Environmental Impact Statement

 NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS BRANCH



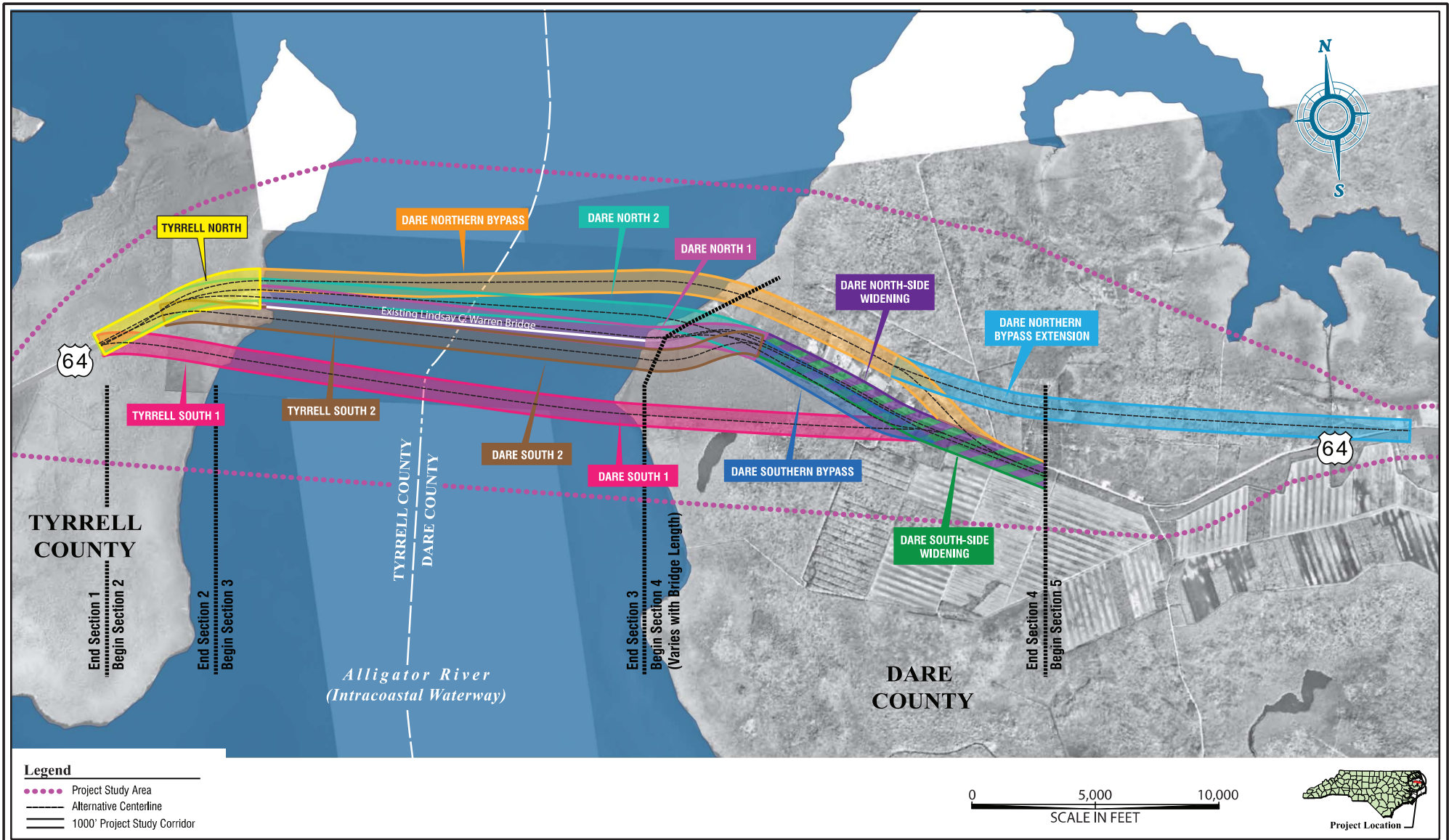
Legend

-  Coastal Wetlands
-  575' AEC on ORW
-  75' AEC on Public Trust Estuarine Waters
-  30' AEC on Inland Public Trust Waters
-  Public Trust Waters
-  Section Break Point
-  Bridge

Concurrence Point 2A Bridge Corridors

October 15, 2009

Attachment 1



HB-0001 White Paper:
History of Previous Merger Process on R-2544/2545 Project

Purpose of Document:

The purpose of this document is to condense the Section 404 Merger Process on the R-2544/45 project, CP1 through CP4a, and to highlight key decisions that led to the selection of the LEDPA. This summary includes key decisions and summaries from the merger process that are pertinent to project HB-0001, the replacement of the Lindsay C. Warren Bridge. The lead agency for merger coordination was the U.S. Army Corps of Engineers. The HB-0001 project includes Sections 2, 3, and 4.1 of the R-2544/45 project. Merger decisions and discussion that occurred regarding Sections 1 and 5 of the R-2544/45 project are not included.

Table 1 details when and why each alignment alternative in Sections 2 through 4.1 was eliminated from the merger process. These decisions are described at a high-level below. For detailed information, please refer to Table 1 and the relevant document where the alternative was removed. Figures 1 and 2, taken from the CP 3 Meeting Packet, show each alternative and should also be used as a reference while reviewing this memo.

Concurrence Point 1: June 14, 2007

Summary

The Merger team met to discuss purpose and need and study area. All agencies concurred on the purpose and need, and study area except ARNWR, which abstained due to the “concerns over the level of detail provided to date relative to data requirements necessary to prepare Compatibility Determination for right-of-way modifications”.

Key Decisions

The following verbiage was concurred on in the purpose and need which relates to the HB-0001 segments of the project:

- Part 3 of the purpose: “Maintaining/improving a bridge across the Alligator River that meets the needs of the highway users.”
- Part 3 of the need “The Lindsey C. Warren Bridge across the Alligator River is nearing the end of its service life.”

The ARNWR wants to make sure that NCDOT strives to stay within or adjacent to existing right-of-way to not cause serious issue in the refuge.

Concurrence Point 2: June 19, August 21, October 16, 2008

Summary

Concurrence Point 2 occurred over 3 meetings. Meetings 1 and 2 dealt with reaching concurrence on alternatives to be studied in the DEIS. The merger team could not reach concurrence on a cross section

in Dare County. The issue was elevated to the Merger Management Team meeting, on October 16, 2008, which determined that a 23-foot median would be studied in Dare County in the DEIS.

Key Decisions

- The project was broken into 5 sections. Sections 1 and 2 are Tyrrell County, Section 3 is the bridge over the Alligator River, and Sections 4 and 5 are in Dare County.
- For the purpose of the bridge alignment, the Merger team focused on corridors, not the typical section, and alternatives were referenced as 2A, 2B, 2C, 2D, 2E, etc. The Merger team agreed to drop the cross-section reference from all corridor designations.
- All cross sections of bridge will include 10' shoulder for bike and pedestrian accommodations.
- The typical section of bridge is high span, single 78' wide bridge, 10' median, 24' travel lanes with 10' shoulders.
- The following alternatives were eliminated from further consideration:
 - 2C and 2E
 - 2C1/4C1 (4C1 is okay on its own but not with 2C1)
 - 2E1/4D1-4E1
 - 2A
 - 4A
- Alternative 2B was aligned southward to avoid commercial docks, WAMI Project, future channel dredging.
- 2B/2D are the only alternatives that were carried forward in Tyrrell County and are 1000'-wide study corridors
- 4B, 4C, 4D (best fit) are carried forward on Dare County side

Amendment

- Alternative 2B was eliminated from consideration (per discussion in CP2A meeting – see CP2A information below)
- Alternative 4B (in Section 4-1) was eliminated from consideration
- Creation of Alternative 4G (per discussion in CP2A meeting – see CP2A information below)

Conclusion of CP2

Based on CP2 and CP2 amendments, alternatives studied in the DEIS as it pertains to HB-0001 are: 2D,4C, 4D, 4F, 4G

Concurrence Point 2A: October 15, 2009- Bridging Decisions and Alignment Review

Summary

The Alligator River is the only jurisdictional stream crossing, therefore, bridging discussions involved bridge alternatives that cross the river. The Merger team was unable to concur on bridge lengths and alignments; therefore, a field meeting was conducted on November 18th, 2009 to reach agreement on bridge lengths. Alternatives left to be studied from CP2 were combined to create named alternatives. There was only one alternative left in Tyrrell County (2D), which was paired with the 4 remaining

alternatives in Dare County (and shown on attached map). The following is a list of the alternative pairs and names:

- 2D+4C= Dare North 1
- 2D+4D= Northern Bypass
- 2D+4F= Dare North 1
- 2D+4G= Dare North 2

Key Decisions

- The EPA noted that the southern alternative bridge approaches on Alternative 2B went through more wetlands than north of the marina. Therefore, the southern alternatives are the least preferred. It was also noted that the southern alignment was unlikely to be compatible with ARNWR.
 - The Alternative 2B (Dare South) was eliminated
 - Alternative 2B/4B (Dare South) would require a sliver of land from ARNWR and no mitigation is currently possible under ARNWR regulations. This alternative was eliminated.
- Addition of 4G (Dare North 2) as a detailed study alternative. ARNWR can consider the approaches as “minor modification to the existing ROW”. The rationale behind Alternative 4G was to have an alternative that was on the north side of the existing bridge but would allow a connection to the Southern Bypass alternative in section 4 that would completely avoid the East Lake Community.
- Bridge Lengths:
 - Alternative 2D/4C (Dare North 1) 16,547 feet
 - Alternative 2D/4D (Northern Bypass) 19,900 feet
 - Alternative 2D/4F (Dare North 1) 16,547 feet
 - Alternative 2D/4G (Dare North 2) 16,800 feet
- The two alternatives with identical lengths, both shown as Dare North 1, share the same bridge alignment, but their approaches connect at 2 different locations to existing US 64 at East Lake- for the purpose of HB-0001 these two alternatives should be synonymous since the tie-in points are past the break point for section 4-1.
- The refuge was okay with the remaining alternatives (4C and 4D) on the Dare county side.

Concurrence Point 3: December 11, 2012

Summary

Concurrence Point 3 was broken into three meetings. The meeting which took place on December 11, 2012 consisted of Sections 2 through 4 and are relevant to the HB-0001 project.

Key Decisions

- The Northern Bypass Alternative was eliminated (2D/4D)
- NCDOT recommended Dare North 2 and Dare North 2 Connector as the LEDPA in sections 2, 3, and 4-1.

- This alignment would avoid impacts to ARNWR in subsection 4-1
- Breakdown of LEDPA for Segments 2, 3, and 4-1
 - Section 2 Tyrrell County Approach: Tyrrell North (Alternative 2D)
 - Section 3 Alligator River Crossing: Dare North 2
 - Section 4-1 Dare County Approach: Dare North 2 Connector (Alternative 4G) to southern bypass to minimize ARNWR impacts
 - The connection to the Southern Bypass alternative does not pertain to the HB-0001 project since it is in subsection 4-2, which is outside the limits of the HB-0001 project
- ARNWR indicated that a minor modification to existing ROW may be possible if NCDOT can show minimization of impacts to ARNWR lands (and maximize its use of NCDOT right-of-way) to the extent practicable.
- EPA noted that the project wetlands may be determined to be Aquatic Resources of National Importance (ARNI). As a result, the EPA may wish to elevate the individual permit review process.

Concurrence Point 4A: December 17, 2014

Summary

NCDOT discussed the development of the project’s Wildlife Crossing Program, which would include wildlife crossings into the “Best Fit” Preliminary design. Impacts, avoidance and minimization at streams, canals, wetlands, and CAMA resources were discussed. Also discussed was the possibility of minimizing water resource impacts by narrowing the median at appropriate locations in Dare County. It was noted that a median of less than 23 feet would require the use of a Jersey barrier in the median.

Key Decisions

- During final design and after detailed hydraulic analysis, NCDOT will study altering the drainage design at canal relocations throughout the project in order to reduce impacts to the canals and adjacent wetlands. Specifically, this would include the “Best Fit” Preliminary Design in Section 4-1 (~ Station 899+00 to 902+00)
- During final design, NCDOT will continue seeking practicable opportunities to avoid and minimize wetland impacts.
- Impacts to jurisdictional resources and other community, cultural, and natural resources avoided and minimized to extent practicable at the preliminary design level of engineering.

The following table shows each alternative throughout the Merger Process and when it was eliminated. If eliminated, a brief description of why it was removed is included. The decision/rationale refers to a Merger Document in parenthesis.

Table 1

Tyrell County Alternatives	Alternative	CP1	CP2	CP2A	CP3	LEDPA
	2A		Removed: habitat fragmentation, opposition from ARNWR, greater wetland impacts (CP2 Meeting Minutes 8-25-08 P.8)			
	2B			Removed: Coastal Wetland Impacts, major fragmentation, creation of remnant/linear Coastal Wetlands between new corridor and existing ROW; elimination of direct access to US 64 which would impact the Marina; fragment coastal wetland habitat; Impacts to ARNWR (CP2A Meeting Summary Memo)		
	2C		Removed: impacts to Marina would be detrimental (CP2 Meeting Minutes 8-25-08 P.11) & (CP2 Merger Packet P.17)			
	2D					Selected
	2E		Removed: Greater wetland impacts, additional bridge length, addition cost, habitat fragmentation (CP2 Meeting Minutes 8-25-08 P.11) & (CP2 Merger Packet P.17)			

Dare County Alternatives

	4A		Removed: habitat fragmentation, opposition from ARNWR, greater wetland impacts (<i>CP2 Meeting Minutes 8-25-08 P.11</i>)			
	4B			Removed: concerns over impacts to Coastal Wetlands, fragmentation of habitat, and impacts to ARNWR (<i>CP2A Meeting Summary Memo</i>)		
	4C				Removed: Compared to 4G, has higher impacts essential fish habitat, CAMA Resources, coastal wetlands and increase ARNWR Fragmentation	
	4D				Removed: Significant ARNWR fragmentation, wetland impacts, longest bridge span, most costly (<i>CP3 Meeting 1 Presentation</i>) Agreement in Meeting Minutes	
	4E		Removed: Greater wetland impacts, additional bridge length, addition cost, habitat fragmentation (<i>CP2 Merger Packet P.17</i>)			

	4F				Removed: Compared to 4G, has higher impacts essential fish habitat, CAMA Resources, coastal wetlands and increase ARNWR Fragmentation (CP 3 Meeting Minutes)	
	4G			Created: Additional alternative that is south of the old ferry terminal that goes south of US 64 and the East Lake Community (CP2A Amendment) This alternative was also created in response to public input at the Citizens Information Workshop which occurred on March 14, 2007		Selected