




PROJECT INITIATION FORM

SPOT ID: H185357		STIP DESCRIPTION: Cape Fear Memorial Bridge Replacement	
DIVISION: 3	COUNTY: NEW HANOVER & BRUNSWICK	ROW DATE: N/A	LET DATE: N/A

EXISTING FACILITY CHARACTERISTICS:		PROPOSED FACILITY CHARACTERISTICS:	
		Functional Classification: Freeway Proposed Functional Classification: Freeway	
		Existing No. of Lanes: 2 in each direction Proposed Typical Section: 6H – 6 Lane Divided (23' Raised Median) with Curb & Gutter, Sidewalk, and Sidepath, 35-45 mph Existing Median: Yes Proposed No. of Lanes: 6 Existing control of access: Full Control Addition of Median(s): Yes Posted Speed: 35 mph (Brunswick Co), 45 mph (New Hanover Co) Proposed control of access: Full Control AADT: 2019 - 60,900 vehicles per day (vpd) Design Speed: 40 mph/50 mph Right-of-Way Width: Bridge has a 54-foot width AADT: 2045 - 81,900 vpd Structures: <input type="checkbox"/> Culvert(s) Number, Size(s) <input checked="" type="checkbox"/> Bridge(s) 54' width, approx. length 3,033 feet Right-of-Way Width: Bridge has a 54-foot width Structures: <input type="checkbox"/> Culvert(s) Number, Size(s) <input checked="" type="checkbox"/> Bridge(s) 1, Approximately 135' width	

PROJECT DESCRIPTION: *Include project scope and location, including municipality and county.*

SPOT H185357 proposes to replace the Cape Fear Memorial Bridge, built in 1969. The bridge carries US 17/ US 76/ US 421 across the Cape Fear River between New Hanover and Brunswick Counties with terminations in the City of Wilmington on the east and Eagle Island in Brunswick County on the west. The existing bridge is a 4-lane steel center-span vertical-lift bridge. The proposed bridge would consist of a 6-lane median-divided facility with a barrier-separated multi-use path. The project is needed to accommodate local population increases and truck traffic for the Port of Wilmington. A new bridge will improve traffic flow, and provide bicycle/pedestrian connectivity across the river.

COST ESTIMATES:

Option Number	Design Option	Construction Costs	Utility Relocation Costs	Right-of-Way Costs	Total Costs
Option 1	Fixed Span 65' Vertical Clearance	\$185.1 M	\$2.0 M	\$9.5 M	\$196.6 M
Option 2	Fixed Span 135' Vertical Clearance	\$213.6 M	\$2.0 M	\$30.1 M	\$245.7 M
Option 3	Movable Span 65' Vertical Clearance	\$475.7 M	\$2.5 M	\$9.5 M	\$487.7 M
Option 4	Movable Span with Railroad Component 65' Vertical Clearance	\$596.7 M	\$2.5 M	\$9.5 M	\$608.7 M



FINDINGS AND RECOMMENDATIONS:

The Cape Fear Memorial Bridge Replacement Project is a high-profile project in a sensitive environmental and historic portion of North Carolina. The eastern portion of the project is located in downtown Wilmington with the potential of business and residential relocations in a potential Environmental Justice (EJ) and low-income community. The project will impact the natural environment within the Cape Fear River, shoreline, and Eagle Island wetlands in Brunswick County. The Wilmington Local Historic District and the downtown business district of the City of Wilmington are not anticipated to have impacts. Archaeological resources in the Cape Fear River are not anticipated to have direct impacts. A southern extent of the National Register of Historic Places (NRHP) district is between Wright Street and Meares Street. Resources within the National Register (NR) boundary area that are also in areas under consideration for the project are designated as Surveyed Only. Based on the current express designs, Listed or Determined Eligible NR resources are not anticipated to be impacted.

DOCUMENT TYPE:	MERGER:	PROJECT TYPE:	FUNDING:	CONTRACT TYPE:
<input type="checkbox"/> CE/MCDC <input checked="" type="checkbox"/> EA/FONSI <input type="checkbox"/> EIS	<input checked="" type="checkbox"/> MERGER <input type="checkbox"/> NON-MERGER SCREENING DATE:	<input checked="" type="checkbox"/> DIVISION <input type="checkbox"/> CENTRAL	<input checked="" type="checkbox"/> Federal <input checked="" type="checkbox"/> State Funding source(s) to be determined	<input type="checkbox"/> Design Bid Build <input checked="" type="checkbox"/> Design Build <input type="checkbox"/> Construction Manager <input type="checkbox"/> Progressive Design Build

PROJECT HISTORY

Planning Studies:
N/A

SPOT Descriptions: *Provide the project description from the most recent SPOT analysis.*
N/A

Feasibility Studies: *Describe any feasibility studies that include the project corridor.*
 The 2017 *Wilmington Rail Realignment and Right of Way Use Alternatives Feasibility Study*, identified three proposed alignments that would cross the Cape Fear River south of the existing Cape Fear Memorial Bridge.
 NCDOT’s 2019 *Cape Fear Crossing Draft Environmental Impact Statement (DEIS)* identified multiple alternatives to cross the Cape Fear River and alleviate congestion on the Memorial Bridge. One build alternative in this study considered upgrading US 17 which included the construction of a fixed-span bridge with additional capacity at the existing Cape Fear Memorial Bridge.

Problem Statement: *Provide any previous problem statements from the CTP/MTP or Feasibility Study.*
 According to The NC Office of State Budget Management, by July 2020 Brunswick County is projected to have a population of 146,135. By 2030 the population is projected at 179,854, and 210,202 by 2039. In less than 20 years Brunswick County is projected to increase by 64,067 residents.
 New Hanover County’s July 2020 projected population is 239,272 with 276,409 projected in 2030, and 309,830 in 2039. Between 2020 and 2039 the county is projected to grow by 70,558 residents.
 The bridge is functionally obsolete. Structure Safety Reports compiled for NCDOT indicate the bridge condition was rated Fair in February 17, 2016. February 23, 2018 the Deck, Superstructure and Substructure Condition Ratings were all described as Satisfactory. These elements were awarded a



	<p>grade of 6¹ on a 0-9 point scale under the National Bridge Inventory Condition Ratings. Repair and maintenance costs are expected to increase as the bridge ages and traffic increases.</p>
<p>PURPOSE AND NEED</p>	<p>Purpose: <i>Provide the purpose of the project, if one has been identified in prior planning studies.</i></p> <p>Construct a new facility with structure over the Cape Fear River.</p>
	<p>Need(s): <i>Include the identified need for the project as defined on the Identified Need form or other available information.</i></p> <p>The Cape Fear Memorial Bridge replacement is needed to accommodate the high growth areas of New Hanover and Brunswick Counties and truck traffic increases that support the growing population, military preparedness, and port activities in southeastern North Carolina. The corridor is a part of the Strategic Highway Network (STRAHNET) for military transportation and serves as a strategic corridor for hurricane evacuation.</p>
	<p>Supporting Data: <i>Are there any studies or other documents that demonstrate the need for the project? For example, if the project is needed because of traffic congestion, has a forecast been prepared?</i></p> <p>In 2015, <i>Cape Fear Transportation 2040</i>, the Metropolitan Transportation Plan (MTP) for the Wilmington Urban Area Metropolitan Planning Organization (WMPO), identified the Cape Fear Memorial Bridge replacement project. Project termini were identified between 3rd Street and US 421. The recommended project, not fiscally constrained, is identified in the MTP as project R-57.</p>
<p>CONCEPTS BEING CONSIDERED</p>	<p>Four express concept bridge options are proposed that have the same typical section. This consists of a 15-foot multi-use path on the north side of the bridge, 12-foot outside shoulders, three 12-foot travel lanes in each direction separated by a 22-foot median and 10-foot inside shoulders. The options differ by vertical clearance (65' or 135') and fixed or movable center span.</p> <ul style="list-style-type: none"> • Option 1 Fixed Structure, 65' vertical clearance • Option 2 Fixed Structure, 135' vertical clearance • Option 3 Movable Structure 65' vertical clearance • Option 4 Movable structure with railroad component, 65' vertical clearance. Option 4 includes a separate bridge for single track rail extending on the south side of the vehicular bridge. A single substructure would accommodate both bridges. The bridges would have independent, movable center lifts. <p>All options of the proposed project would slightly modify the existing eastern loop ramps at S. Front Street and tie into the current one-way pair of Wooster Street and Dawson Street in downtown Wilmington. Across the river, the bridging of Eagle Island wetlands would extend to the US 17/US 421/ US 74 interchange, with possible modifications. Continued coordination is needed with NCDOT on Bridge 0008 in Brunswick County.</p> <p>Options with a 65' vertical clearance will have fewer impacts on downtown EJ communities and businesses. Fixed structures will have fewer operational and maintenance costs.</p> <p>A fixed span alternative would relieve congestion for both vehicular and marine traffic in addition to the maintenance and operational savings. In recent years, NCDOT has replaced many movable bridges with fixed span bridges, particularly in the coastal areas such as Oak Island, Sunset Beach, and Surf City.</p>

¹ National Bridge Inventory Condition rating of 9 is Excellent Condition. A rating of zero indicates the bridge is beyond corrective action.



	<p>Concepts Previously Dismissed and Why:</p> <ul style="list-style-type: none"> • Two parallel vehicular bridges - Maintenance would increase with two movable spans instead of one. • Bascule design – For the given design parameters, when the bridge is in the open position the bascule span counterweights could be under water. • Tunnel design - The cost of an immersed tunnel could potentially be almost double the cost of a bridge as a result of right of way requirements associated with the roadway profile that would be needed to locate the tunnel below the bottom of the required navigation channel; the approach tunnel and transition-to-grade depressed roadway sections would extend far to the east and west of the Cape Fear River. The resulting impacts to the human and natural environments would be extensive. Residential and business displacement could occur in Wilmington communities along with disturbances and potential loss of habitat. The Cape Fear River has archeological resources listed in the National Register that could be affected with dredging and excavation activities. A tunnel would be unable to safely accommodate bicycle and pedestrian users unless a special duct (or passage) is designed specifically for such use.²
<p>PUBLIC/ AGENCY COORDINATION</p>	<p>Anticipated Permits: <i>Describe potential 404 permitting and any other anticipated permits (CAMA, FERC, TVA, US Coast Guard, etc.)</i></p> <p>US Army Corps of Engineers: Individual Section 404 Permit and Section 10 Permit.</p> <p>US Coast Guard Section 9 Permit. Bridge Permit Application to construct a new bridge.</p> <p>US Fish & Wildlife Section: Section 404 and Section 10 Permit Review and Section 7 Consultation</p> <p>NC Division of Water Resources: Section 401 Water Quality Certification</p> <p>NC Division of Coastal Management: CAMA Permit for both Brunswick and New Hanover Counties</p>
	<p>Federal Agency Involvement: <i>Who is the lead federal agency? Which agencies will be involved?</i></p> <ul style="list-style-type: none"> • Federal Emergency Management Agency (FEMA) • Federal Highway Administration (FHWA) • US Army Corps of Engineers (USACE) –co-lead federal agency • US Environmental Protection Agency (EPA) • US Fish and Wildlife Service (USFWS) • US Coast Guard (USCG) – co-lead federal agency
	<p>Public Involvement Strategy: <i>This is different and more inclusive than a Public Involvement Plan. A public involvement strategy is dynamic and subject to change.</i></p> <p>Due to the sensitive nature of both the human and natural environment with this project the following actions will comprise a Public Involvement strategy:</p> <ul style="list-style-type: none"> • Early and continuing public involvement • Representation of downtown residents, business owners, Historic Wilmington Foundation, environmental advocacy groups, NCSPA, river pilots and other stakeholders • Timely information using a variety of platforms • Reasonable public access to technical information • Adequate public notice of public involvement activities

² US Department of Transportation Technical Manual for Design and Construction of Road Tunnels – Civil Elements, December 2009, https://www.fhwa.dot.gov/bridge/tunnel/pubs/nhi09010/tunnel_manual.pdf
May 2020



	<p>Potential Merger Issues:</p> <ul style="list-style-type: none">• Substantive new information that warrants a reevaluation of a milestone• Bridge approach alignment• Avoidance and minimization of impacts• Compensatory mitigation
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PRELIMINARY RESOURCE INVENTORY TABLE	<i>Check all resources that are likely to be impacted or involved in the project based on the Project Scoping Process. Refer to the Project Scoping Technical Report and Project Scoping Screening Checklist for additional information.</i>		
	Natural Environment	Human Environment	Physical Environment
	<input checked="" type="checkbox"/> Stream(s) <input checked="" type="checkbox"/> Wetland(s) <input type="checkbox"/> Water supply watersheds or critical area(s) <input checked="" type="checkbox"/> CAMA Area(s) of environmental concern <input checked="" type="checkbox"/> T/E species or potential habitat <input checked="" type="checkbox"/> Protected land(s) <input type="checkbox"/> FEMA resource(s) <input type="checkbox"/> Riparian buffer(s) Other	<input checked="" type="checkbox"/> Historic site(s)/district(s) <input checked="" type="checkbox"/> Cemetery(ies)/archaeological resource(s) <input checked="" type="checkbox"/> EJ community(ies) <input checked="" type="checkbox"/> Section 4(f) resource(s) <input checked="" type="checkbox"/> Section 6(f) resource(s) <input type="checkbox"/> Unusually large number of relocations Other	<input checked="" type="checkbox"/> Utilities <input checked="" type="checkbox"/> Hazardous material(s) <input type="checkbox"/> Active agriculture <input type="checkbox"/> Prime or important farmland soil <input type="checkbox"/> Air quality non-attainment or maintenance area <input checked="" type="checkbox"/> Type I noise project Other