



EXPRESS DESIGN EVALUATION SUMMARY

SPOT ID: H185357	FACILITY: Cape Fear Memorial Bridge	DIVISION: 3	FIRM: HDR
	<p>EXISTING FACILITY CHARACTERISTICS:</p> <p>Existing No. of Lanes: 2 each direction Existing Median: Yes Existing control of access: <input type="checkbox"/> No Control <input type="checkbox"/> Partial Control <input type="checkbox"/> Limited Control <input checked="" type="checkbox"/> Full Control</p> <p>2019 AADT: 60,900 vehicles per day (vpd) Structures: <input type="checkbox"/> Culvert(s) <input checked="" type="checkbox"/> Bridge(s) 1, 54' width, approx. 3,033' length</p>	<p>PROPOSED FACILITY CHARACTERISTICS:</p> <p>Proposed No. of Lanes: 3 each direction Addition of Median(s): Yes Proposed control of access: <input type="checkbox"/> No Control <input type="checkbox"/> Partial Control <input type="checkbox"/> Limited Control <input checked="" type="checkbox"/> Full Control</p> <p>2045 AADT: 81,900 vpd Structures: <input type="checkbox"/> Culvert(s) <input checked="" type="checkbox"/> Bridge(s) 1, approx. 135' width</p>	

PROJECT DESCRIPTION:

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. The bridge is a 4-lane steel center-span vertical-lift bridge. A new bridge would consist of a 6-lane median-divided facility with a 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.

Four design options for the bridge 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 inside shoulders. The options differ by vertical clearance (65' or 135') and fixed or movable center span. Option 2 extends improvements to reconstruct the US 17/US 74/US 421 interchange. A temporary alignment will be built to allow construction activities within the interchange. 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.

All options of the proposed project would slightly modify the existing eastern loop ramps at South 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 74/US 421 interchange. See Figure 1 for a Vicinity Map, Figure 2 for design Options 1-4, and Figure 3 for human and natural resources.

COST ESTIMATES:

Option Number	Construction Costs	Utility Relocation Costs	Right-of-Way Costs	Total Costs
Option 1 Fixed Span 65' Vertical Clearance	\$227.4 M	\$2.2 M	\$11.6 M*	\$241.2 M
Option 2 Total Costs	\$346.0 M	\$3.7 M	\$41.8 M	\$391.5 M
Option 2 Fixed Span 135' Vertical Clearance Bridge	\$259.2 M	\$3.7 M	\$41.8 M	\$304.7 M
Option 2 Reconstruction of US 17/ US 74/ US 421 Interchange	\$52.3 M			\$52.3 M
Option 2 Temporary Alignment	\$34.5 M			\$34.5 M
Option 3 Movable Span 65' Vertical Clearance	\$687.8 M	\$2.2 M	\$11.6 M	\$701.6 M
Option 4 Movable Span 65' Vertical Clearance With Railroad Track Component	\$885.8 M	\$2.2 M	\$11.6 M	\$899.6 M

*A right of way estimate to determine property impacts to the Kinder Morgan (a petroleum products transporter) terminal located north of the bridge has not been prepared. Ships access this terminal and would be unable to navigate under the fixed 65' vertical clearance in Option 1. This would necessitate the relocation of the business. Relocation costs for this business are expected to be extensive. If this option is selected a cost estimate will be requested.

MAPPING PRODUCT RECOMMENDATION:

Include recommendation of mapping product type based on express evaluation summary

1" = 50' Shell Plan Sheets

COMMENTS:

The eastern portion of the project is located in downtown Wilmington with the potential of business and residential relocations. 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. As project designs are refined if historic districts or archaeological resources are determined to be impacted the impacts will be minimized as much as possible.

A robust community outreach and public involvement process is recommended to address the effects of the project on minority and low-income communities and bicycle/pedestrian improvements. The Wilmington area has an extensive bicycle presence with many advocates for bicycling. During the public comment period for the *Cape Fear Moving Forward 2045* Metropolitan Transportation Plan 18 comments were received specifically requesting bike/pedestrian accommodations to cross the river between New Hanover and Brunswick Counties.

June 2022