



# EXPRESS DESIGN EVALUATION SUMMARY

<b>SPOT ID:</b> H185357	<b>FACILITY:</b> Cape Fear Memorial Bridge	<b>DIVISION:</b> 3	<b>FIRM:</b> HDR
	<p><b>EXISTING FACILITY CHARACTERISTICS:</b></p> <p>Existing No. of Lanes: 2 each direction                  Existing Median: Yes                  Existing control of access:</p> <p><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)</p> <p>Structures:</p> <p><input type="checkbox"/> Culvert(s)  <input checked="" type="checkbox"/> Bridge(s) 1, approximately 54' in width</p>	<p><b>PROPOSED FACILITY CHARACTERISTICS:</b></p> <p>Proposed No. of Lanes: 3 each direction                  Addition of Median(s): Yes                  Proposed control of access:</p> <p><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</p> <p>Structures:</p> <p><input type="checkbox"/> Culvert(s)  <input checked="" type="checkbox"/> Bridge(s) 1, approximately 135' in width</p>	

**PROJECT DESCRIPTION:** *(Include project scope and location, including Municipality and County. Refer to the attached project location map and photos.)*

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, 3 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 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 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.

**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

**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.

*May 2020*