



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

J. ERIC BOYETTE
SECRETARY

MEMORANDUM

September 29, 2023

FROM: Trace Howell, Project Manager
NCDOT Division 3

SUBJECT: Replacement of **Bridge Number 640013** (Cape Fear Memorial Bridge) over the Cape Fear River in New Hanover and Brunswick Counties, STIP HB-0039

The North Carolina Department of Transportation (NCDOT) **Division 3** is beginning the project development, environmental, and engineering studies for the HB-0039 (Cape Fear Memorial Bridge) replacement project. The project is included in the NCDOT 2024-2033 State Transportation Improvement Program (STIP) for preliminary engineering only. Included in the packet is a vicinity map for the proposed project. NCDOT has made the preliminary determination that the project should be considered for the Merger Process.

NCDOT is providing the attached project information and maps ahead of the in-person scoping meeting. We welcome your input on the proposed project (STIP HB-0039), and we would appreciate any information that may be helpful in evaluating the potential environmental effects. If applicable, please identify any permits or approvals that may be required by your organization. Please provide your input by November 1, 2023.

If you have any questions concerning the project, please contact Project Manager Trace Howell at (910) 341-2000 or by email at trhowell1@ncdot.gov. Please include the STIP Project Number (HB-0039) in all correspondence and comments.

Sincerely,

Trace Howell, PE, PMP
NCDOT Division 3

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**North Carolina Department of Transportation
Project Data Sheet**

Essential Project Information	
STIP Project Name	Cape Fear Memorial Bridge Replacement
STIP Number	HB-0039
County	New Hanover and Brunswick Counties
NCDOT Division	3
ROW Date	N/A – programmed for PE only
LET Date	N/A – programmed for PE only
Cost Estimates	N/A – programmed for PE only
Funding Type	Federal (anticipated)

Proposed Project Details	
Project Description	Replace Bridge 640013 over Cape Fear River on US-421
Project Limits	Varies
Typical Section	Multilane divided
Access Control	Full control of access
Design Speed	40-60 mph
Right-of-Way Width	Varies
Physical or Engineering Constraints	The Cape Fear Memorial Bridge Replacement Project is in a sensitive environmental and historic area. The eastern portion of the project is located in downtown Wilmington in a National Register Historic District, and the western portion of the project is located in Brunswick County in a primarily undeveloped area. The project is expected to study two alternatives, a fixed span 135' vertical clearance bridge, and a movable span 65' vertical clearance bridge. Avoidance and minimization measures will be important and proper agency coordination may benefit from usage of the Merger Process.
Other Considerations	The City of Wilmington, in coordination with the Federal Railroad Administration (FRA), is proposing a Rail Realignment Project ¹ which is studying the realignment of the existing CSX freight rail line between Navassa (Davis Yard) and the Port of Wilmington. This project is studying two alternatives, which would combine a parallel movable rail span on a fixed roadway structure (Alternative 2A) and a combined roadway/rail structure with the rail line nested underneath a fixed roadway structure (Alternative 2B).
Survey Request Date	To be requested during final design.

Project History	
Planning/Feasibility Studies	HDR completed NCDOT Express Design No. H185357 in 2020.
SPOT Description	Replace Bridge # 640013 (Cape Fear Memorial Bridge) over Cape

¹ City of Wilmington. Rail Realignment Project. Web. <https://www.wilmingtonnc.gov/departments/major-projects/rail-realignment>

	Fear River.
Problem Statement	<p>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.</p> <p>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.</p> <p>The bridge is functionally obsolete. Structure Safety Reports compiled for NCDOT indicate the bridge condition was rated Fair on February 17, 2016. February 23, 2018, the Deck, Superstructure and Substructure Condition Ratings were all described as Satisfactory. These elements were awarded a grade of 6 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>
Alternatives Previously Dismissed and Why	N/A

Anticipated Purpose and Need	
Purpose	To replace the existing Bridge # 640013 (Cape Fear Memorial Bridge) over the Cape Fear River on US 421.
Need(s)	The NCDOT 2020 Feasibility Study for this project states the 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. Additionally, the 1969 bridge is functionally obsolete.
Supporting Data	Structure Safety Reports compiled for NCDOT indicate the bridge condition was rated fair in 2016, and the deck, superstructure, and substructure Condition Ratings were all rated satisfactory in 2018. These elements were awarded a grade of six out of nine under the National Bridge Inventory Condition Ratings. Repair and maintenance costs are expected to increase as the bridge ages and traffic increases. In 2019, approximately \$15 million was spent on a major rehabilitation for the bridge, and average annual maintenance costs were estimated at \$550,000. NCDOT is completing another major deck rehabilitation in Spring 2024 with an estimated construction cost of \$13 million.

Alternatives Currently Under Consideration	
No Build	The No-Build Alternative is the baseline comparison alternative for the design year (2050). The No-Build Alternative would not replace the existing bridge except what is needed to maintain and repair the bridge.
Alternative 2	Fixed span 135' vertical clearance with trumpet interchange improvements
Alternative 3	Movable span 65' vertical clearance

Public and Agency Coordination	
Anticipated Permits	<ul style="list-style-type: none"> • US Army Corps of Engineers (USACE): Section 404 Permit and Section 10 Permit • US Coast Guard (USCG): Section 9 Permit • NOAA Fisheries and US Fish & Wildlife Service (USFWS): Section 404 and Section 10 Permit Review, and Section 7 Consultation • NC Division of Water Resources (NCDWR): Section 401 Water Quality Certification • NC Division of Coastal Management (DCM): CAMA Permit for both Brunswick and New Hanover Counties • Development of a Highway Stormwater Program Stormwater Management Plan
Federal Agency Involvement	<p>The lead federal agency will be Federal Highway Administration (FHWA). Other agencies anticipated to be involved, through the merger process and other project coordination include:</p> <ul style="list-style-type: none"> • NCDOT • USACE • USCG • NCDWR • NCDCM • USFWS • NOAA Fisheries • US Environmental Protection Agency (USEPA) • NC Department of Natural and Cultural Resources' State Historic Preservation Office (NCHPO) • NC Wildlife Resources Commission (NCWRC) • Wilmington Urban Area Metropolitan Planning Organization (WMPO) • City of Wilmington • New Hanover County • Brunswick County
Public Involvement Strategy	A Public Involvement Plan will be prepared and a strategy will be developed to ensure the public has meaningful input throughout the decision-making process. The public involvement strategy is dynamic and will be updating accordingly throughout the life of the project.
Merger Screening Date	Scheduled for October 18, 2023
Potential Merger Triggers	Competing resources, as noted above and described in detail

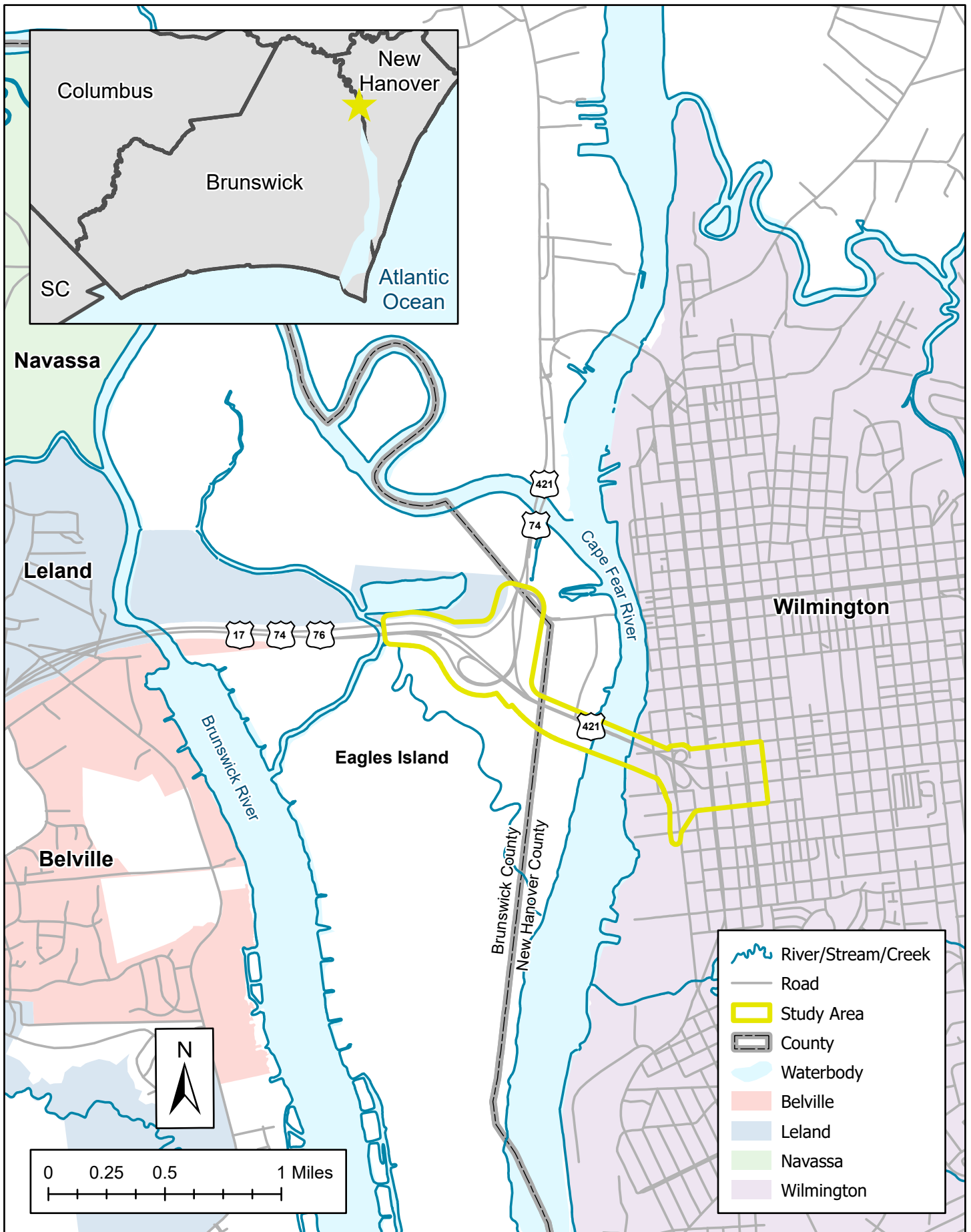
	below in the Preliminary Resource Inventory Table.
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Existing Conditions	
Functional Classification	Freeway
Strategic Transportation Corridor	US 74 and US 17 are both part of the Strategic Transportation Corridor network, as noted above.
AADT	60,500 (2021)
Access Control	Full Control
Typical Section	Four-lane divided
Right-of-Way Width	Bridge has a 54-foot width
Posted Speed	45 mph
Structures (bridges, RCBC, etc.)	Bridge # 640013 (Cape Fear Memorial Bridge) Bridge # 090007 on US 17 loop
Railroad Involvement	Yes (adjacent to US 17 approach in downtown Wilmington)
Other Adjacent Projects	<p>The NCDOT 2024-2033 STIP includes the following adjacent projects:</p> <ul style="list-style-type: none"> • U-5734 (Front Street Widening) is scheduled for right-of-way (ROW) in 2025 and construction in 2027. • HS-2003Q proposes upgrading the traffic signal, pavement markings, and adding pedestrian accommodations to the intersection of US 17 (Dawson Street) at US 421 (3rd Street). The project is scheduled for construction in 2026. • HL-0109 proposes installation of traffic signals with pedestrian signal heads at the intersection of South 3rd Street and Ann Street. The project is scheduled for ROW in 2024 and construction in 2025. • HL-0010 proposes installation of traffic signals with pedestrian signal heads at the intersection of South 3rd Street and Orange Street, and is scheduled for ROW in 2024 and construction in 2025. <p>The WMPO Cape Fear <i>Moving Forward 2045 Metropolitan Transportation Plan (MTP)</i> includes the following adjacent projects:</p> <ul style="list-style-type: none"> • RW-93 (US 17/76/Wooster Steet streetscape improvements) planned for construction in 2030. • RW-92 (US 17/76/Dawson Street streetscape improvements) planned for construction in 2030. • RW-219 (US 17 Business/Market Street road diet) planned for construction in 2025. • RW-20 (US 17/74/76 Causeway Improvements Phase 2) planned for construction in 2035. • BP-669 proposes crosswalk improvements at 3rd Street and Dawson Street with construction planned for 2025. • BP-370 proposes sharrows on Front Street from Ann Street to the Cape Fear Memorial Bridge, with construction planned after 2045. <p>As noted above, the City of Wilmington is currently studying the</p>

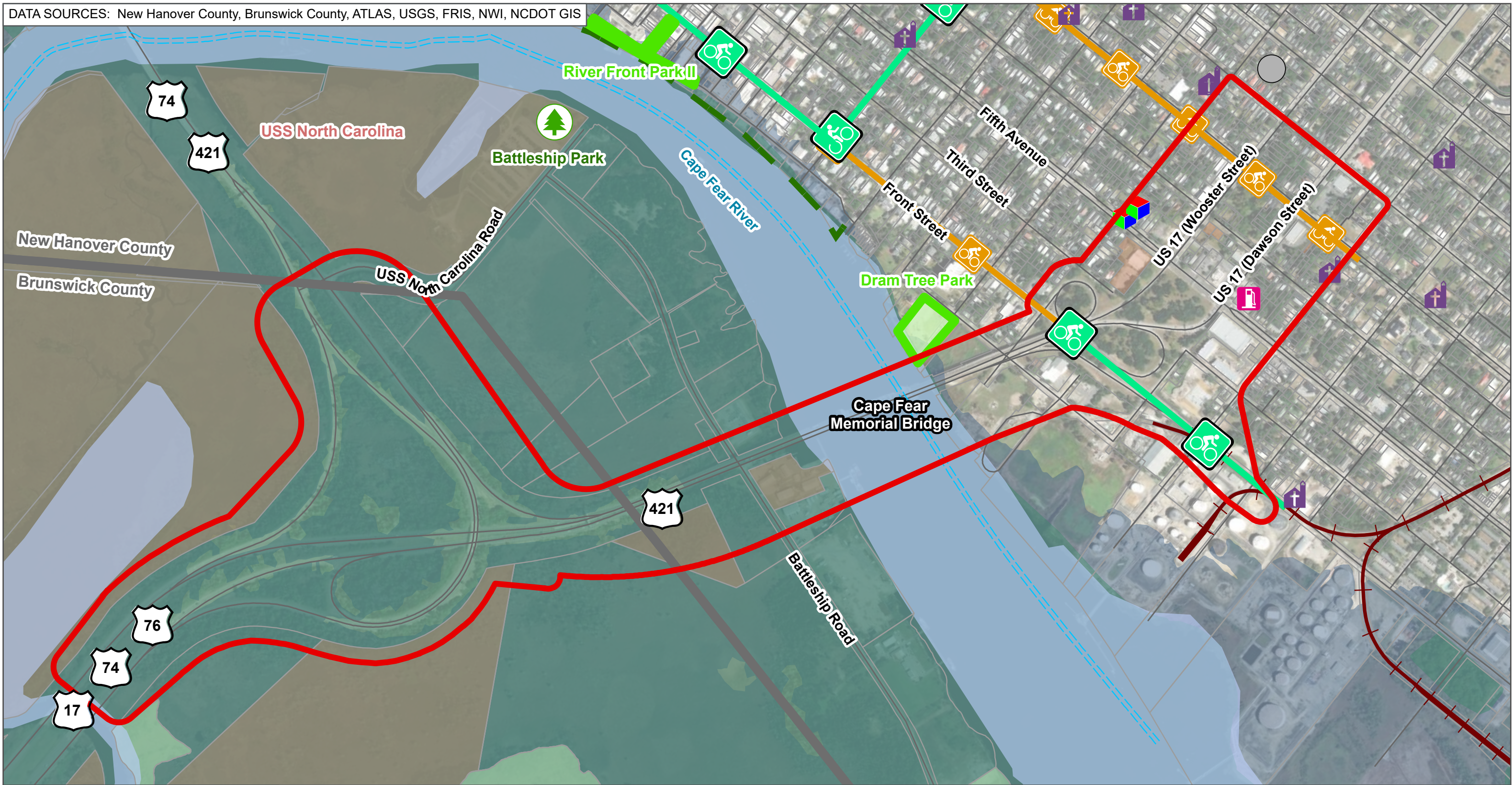
	Rail Realignment Project which intersects with the proposed project on the Cape Fear Memorial Bridge.
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Preliminary Resource Inventory Table	
Utilities	Water, sewer, electric, telephone, CATV, and drainage utilities are located within the project study area. A substation is located on Battleship Road NE on northwest side of bridge.
Hazardous Materials	The follow hazardous materials sites are located within the project study area (shown on the attached environmental features map): <ul style="list-style-type: none"> • Two active underground storage tanks (USTs) • Six non-UST Abandoned Storage Tank Incidents • Three brownfield sites
Known Potentially Eligible National Register of Historic Places/Districts	According to the NCDOT Historic Architecture Effects Required form for the project dated 8/9/2023, there are two National Register (NR) resources/districts in the vicinity of the project (shown on the attached environmental features map). Additionally, Bridge 13 is a contributing resource to the Wilmington Historic District under Criterion C, and has been recommended for individual eligibility under NCDOT’s Statewide Historic Bridge Survey update. <ul style="list-style-type: none"> • Wilmington Historic District (NH0003), NR-listed and local historic district • USS North Carolina (NH0004), NR-listed and National Historic Landmark According to the NCDOT No Archaeological Survey Required form dated 8/4/2023, there are two eligible archaeological resources within the study area. Once design plans are available, the project team will coordinate with NCDOT Archaeology prior to construction due to the presence of known resources.
Other Cultural Resources	There are no known tribal resources located within the project study area. A letter was sent to the Catawba Indian Nation Tribal Historic Preservation Office regarding the project on 8/31/23. No response has been received to date.
Wetlands	Wetlands are located within the project study area, including potential CAMA Areas of Environmental Concern.
Streams	The proposed bridge replacement crosses the Cape Fear River.
FEMA Floodplain Detailed Study Area	The entirety of study area from the eastern bank of the Cape Fear River to the west is located in a 100-Year floodplain (shown on the attached environmental features map).
Water Supply Watersheds	No water supply watersheds are located within the project study area.
Riparian Buffer Rules	The Cape Fear River is not subject to riparian buffer rules.
Active Agriculture	None
Parks, Greenways, Game Lands, Section 4(f) & Section 6(f) Properties	Dram Tree Park is located on the east side of the river north of the Cape Fear Memorial Bridge within the study area, and is subject to LWCF 6(f) protections (shown on the attached environmental features map).

<p>Environmental Justice Populations</p>	<p>According to the NCDOT Demographic Tool, census data indicates there is a notable presence of minority and low-income populations in the City of Wilmington portion of the project.</p>
<p>Other Resources (Wild and Scenic Rivers, TVA, Scenic Byways, etc.)</p>	<p>The following resources are located within the study area and shown on the attached environmental features map:</p> <ul style="list-style-type: none"> • The Cape Fear Historic Byway is located in downtown Wilmington and follows Front Street and Castle Street within the project area. • The Wilmington Riverwalk follows the east bank of the Cape Fear River, including within the project area. • Both banks of the Cape Fear River are identified as Primary Fish Nursery Areas. • The Cape Fear River is classified as a 303(d) stream for Dissolved Oxygen, from upstream mouth of Toomers Cr. to Greenfield Creek. It also serves as a Paddle Trail. • There are two community features within the study area, Healing Waters Holy Temple Church of God and Grandma and Grandpa’s Daycare.



CAPE FEAR MEMORIAL BRIDGE VICINITY MAP
 HB-0039 | BRUNSWICK & NEW HANOVER COUNTY
 FIGURE 1



0 700 Feet 1,400

Brunswick County
New Hanover County

Legend

Study Area	Paddle Trail	Government Owned Land
Park	Existing Bicycle Facility	USA Maritime Property
Daycare Center	Proposed Bike Facility	Parcel
Gas Station/Convenience Store	Railroad	FEMA Floodplain
Place of Worship	Road	County
Cemetery	LWCF Park	NWI Wetland
Wilmington Riverwalk	Waterbody	

ENVIRONMENTAL FEATURES MAP

HB-0039
CAPE FEAR MEMORIAL BRIDGE
NEW HANOVER & BRUNSWICK COUNTY

FIGURE 2 | SEPTEMBER 2023