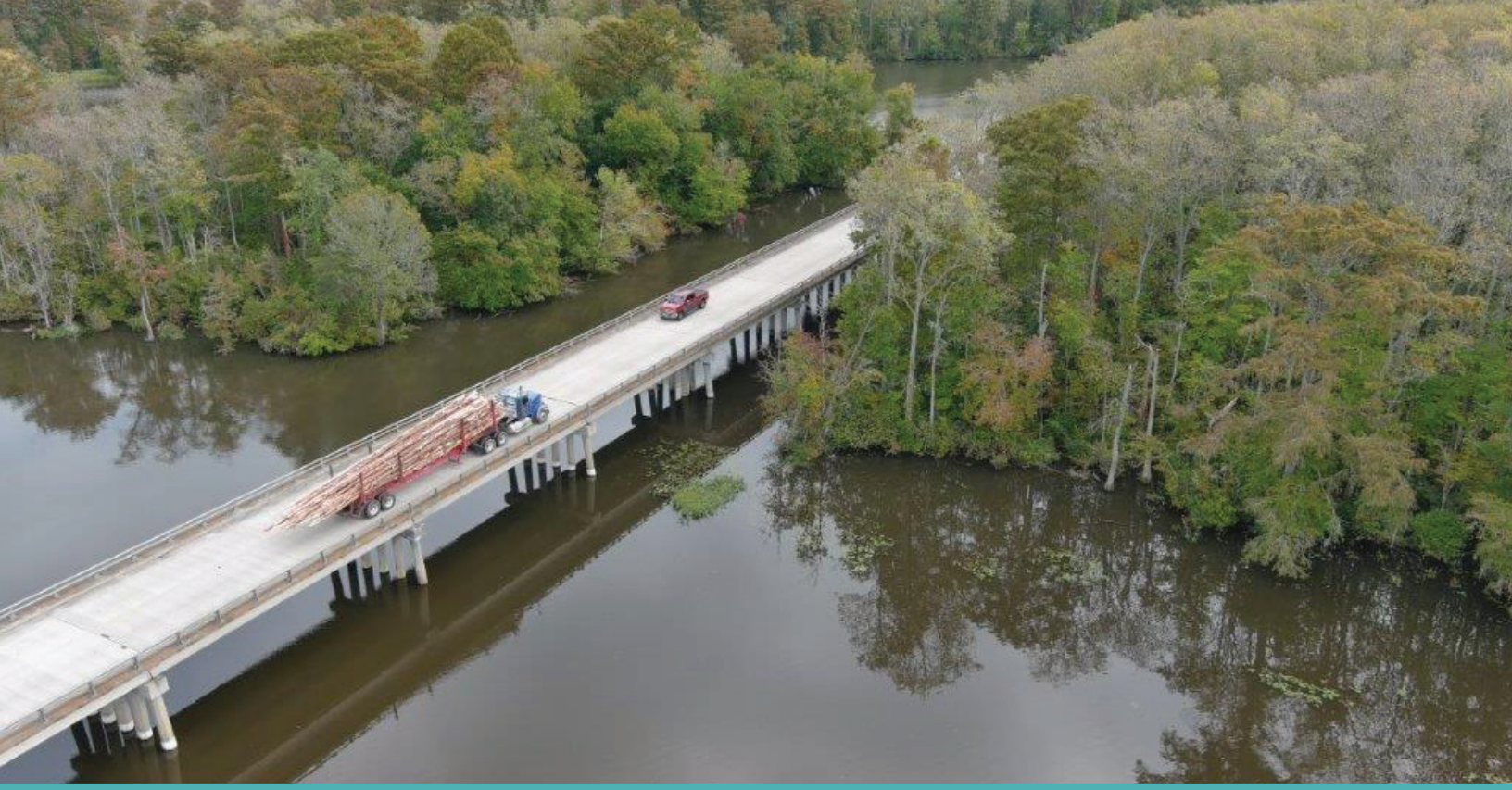

THE BRITE BRIDGES:

Bridging Resources for Infrastructure and Thriving Economies Project

PROJECT NARRATIVE

December 1, 2023

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

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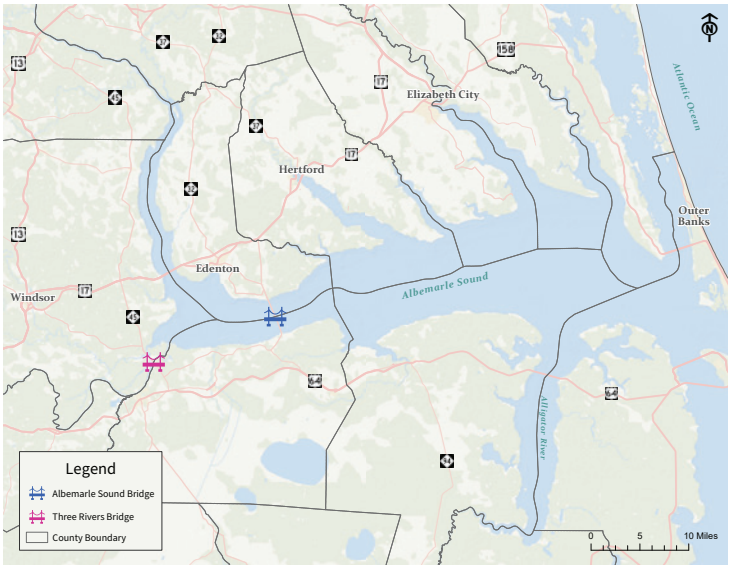
1.0 BASIC PROJECT INFORMATION

The BRITE Bridges: Bridging Resources for Infrastructure and Thriving Economies project (or "Project"), situated in the scenic Inner Banks of northeastern North Carolina, aims to enhance two critical bridges that are integral to the region's infrastructure and economic vitality. The Project is set against a backdrop of natural beauty and socio-economic challenges, with the Albemarle Sound serving as a central feature of the landscape. This area, while rich in ecological diversity and rural charm, faces the stark contrast of high poverty rates amidst its tranquil setting.

The Project's scope includes vital preservation work on Bridge 930015 (National Bridge Inventory (NBI) 000000001870015), also known as the Albemarle Sound Bridge, and Bridge 070007 (NBI 000000000150007), locally referred to as the Three Rivers Bridge. Both bridges serve as essential conduits for local and regional traffic, linking communities and supporting the distribution of freight along US 17, and providing critical links between US 17 and US 64.



Project Area Map

Albemarle Sound Bridge

Constructed in 1990, this bridge is a two-lane structure that includes a series of concrete trestle and post-tensioned segmental box spans. Despite regular maintenance, the bridge requires significant preservation to maintain its structural integrity and extend its lifespan by an estimated 75 years. The scope of work, which is detailed in the statement of work section of the narrative, includes substantial repair and rehabilitation elements.


Albermarle Sound Bridge

Three Rivers Bridge

This bridge, built in 1968, features prestressed concrete girder and continuous steel plate girder superstructure spans. Past projects have focused on overlays and repairs, but further work is necessary to address ongoing issues and prolong the bridge's service life by another 75 years. The scope of work, which is detailed in the statement of work section of the narrative, includes substantial repair and rehabilitation elements.


Three Rivers Bridge

The BRITE Bridges project is not just about physical infrastructure; it's about bridging the gap between the region's natural allure and the socio-economic needs of its communities. By improving these bridges, the Project seeks to support thriving economies and allow for sustainable development for the people of the Inner Banks.

2.0 NATIONAL BRIDGE INVENTORY DATA

Both bridges associated with the Project receive regular inspection in keeping with NCDOT's Transportation Asset Management Plan (TAMP). The following tables show the most recent NBI data, with highlighted areas showing conditions of concern.

NBI Albemarle Sound Bridge Current Evaluation (2021)

Category	Rating	Evaluation
Bridge Railings	1	Meets acceptable standards
Transitions	1	Meets acceptable standards
Guardrail: Approach and Bridge Ends	1	Meets acceptable standards
Deck	6	Satisfactory condition
Superstructure	6	Satisfactory condition
Substructure	4	Poor condition
Channel and Channel Protection	7	Channel remediation is in satisfactory condition
Structural Evaluation Appraisal	4	Minimum tolerable
Deck Geometry Appraisal	4	Minimum tolerable
Waterway Adequacy Appraisal	8	Equal to present desirable condition
Approach Alignment Appraisal	8	Equal to present desirable condition
Scour Critical Bridges Code	8	Foundations stable; scour above top of footing

NBI Three Rivers Bridge Current Evaluation (2022)

Category	Rating	Evaluation
Bridge Railings	0	Does not meet current acceptable standards
Transitions	0	Does not meet current acceptable standards
Guardrail: Approach and Bridge Ends	0	Does not meet current acceptable standards
Deck	6	Satisfactory condition
Superstructure	5	Fair condition
Substructure	4	Poor condition
Channel and Channel Protection	7	Channel remediation is in satisfactory condition
Structural Evaluation Appraisal	4	Intolerable; high priority corrective action
Deck Geometry Appraisal	4	Minimum tolerable
Waterway Adequacy Appraisal	7	Better than present minimum criteria
Approach Alignment Appraisal	8	Equal to present desirable condition
Scour Critical Bridges Code	5	Foundations stable

3.0 PROJECT COSTS AND APPLICANT INFORMATION

The project costs are show in the following table. Year of expenditure costs has been estimated using the Office and Management and Budget's GDP Deflators.

Project Costs

Albemarle Bridge

Description	Unit	Total
Mobilization	YOE Dollars	$3,243,386
Construction Access	YOE Dollars	$3,517,590
PS & E	YOE Dollars	$7,134,309
Traffic Control	YOE Dollars	$3,868,730
Inspection	YOE Dollars	$7,737,460
Bridge	YOE Dollars	$70,339,419
Contingency	YOE Dollars	$14,067,884
Total	**YOE Dollars**	**$109,908,778**

Three Rivers Bridge

Description	Unit	Total
Mobilization	YOE dollars	$1,484,800
PS & E	YOE dollars	$3,117,269
Traffic Control	YOE dollars	$1,685,125
Inspection	YOE dollars	$3,370,250
Bridge	YOE dollars	$32,097,201
Contingency	YOE Dollars	$6,419,440
Total	**YOE dollars**	**$48,174,085**

Total Project Cost

Description	Unit	Project Cost
Mobilization	YOE dollars	$4,728,186
Construction Access	YOE dollars	$3,517,590
PS & E	YOE dollars	$10,251,578
Traffic Control	YOE dollars	$5,553,855
Inspection	YOE dollars	$11,107,710
Bridge	YOE dollars	$102,436,620
Contingency	YOE Dollars	$20,487,324
Total	**YOE dollars**	**$158,082,863**

Funding Allocation

Source	Amount	Match
USDOT – Bridge Investment Program	$79,041,431.50	50%
USDOT – Bridge Formula Funding	$47,424,858.90	30%
NCDOT – State Funding	$31,616,572.60	20%
TOTAL	**$158,082,863.00**	

3.1 Federal Funds

NCDOT is seeking federal support for this project from the Bridge Investment Program at a 50% match, equaling an amount of $79,041,431.50.

In addition, 30% of the match will be from other federal funds, using NCDOT's bridge formula funding from USDOT, equaling an amount of $47.424.858.90.

3.2 Non-Federal Funds

Non-federal funding totaling $31.616,572.60 for this project will be provided by NCDOT, for a local match of 20%.

The lead applicant for this funding is the NCDOT. The mission of the NCDOT is "Connecting people, products and places safely and efficiently with customer focus, accountability and environmental sensitivity to enhance the economy and vitality of North Carolina."[1] The NCDOT is overseen by the North Carolina Board of Transportation, which is charged with setting statewide policies and procedures as well as the distribution of funding. The NCDOT has an annual operating budget of approximately $4.7 billion with 80 percent coming from state revenue sources (including motor fuel tax, DMV fees, and highway use tax on vehicle title transfers) and 20 percent from federal funding sources.

The NCDOT receives and manages Federal Highway Administration (FHWA) and some Federal Transit Administration (FTA) funding on behalf of the state of North Carolina. In accordance with federal legislation, NCDOT has a regularly-updated State Transportation Improvement Program (STIP) that documents the scheduling and funding of projects statewide. The STIP covers a rolling 10-year horizon, with the first five years referred to as the delivery STIP and the second five years as the developmental STIP.

In addition to receiving FHWA and FTA formula funding, the NCDOT has been awarded and has delivered projects using federal discretionary funding. The following table provides a listing of discretionary grants that NCDOT has received and has or is implementing using Infrastructure Investment and Jobs Act (IIJA) funding.

Existing Conditions at the BRITE Bridges

1 NCDOT: Our Mission

Project	Grant	Administrating Agency	Total Project Cost	Discretionary Grant Funding
PARTNERS	RAISE 2022	FHWA	$24,4100,000	$20,040,000
FLOW BETTER	RAISE 2022	FHWA	$53,600,000	$10,700,000
I-85 FUTURES	INFRA 2022	FHWA	$646,270,000	$100,000,000
MEE NC	Rural 2022	FHWA, will likely be transferred to FTA.	$20,400,000	$10,400,000
STERLING	Mega 2022	FHWA	$289,500,000	$110,000,000
Manns Harbor Shipyard Updates	Rural Ferry Program 2022	FTA	$1,681,551	$1,345,241
Automating Actionable Road Anomalies	SMART 2022	FHWA	$1,972,500	$1,543,500
Ferry Technician Training Program	Small Shipyard Program 2023	Maritime Administration	$123,785	$86,649.50
AppalCART Electric Bus Purchases	Low- and No-Emissions Bus and Bus Facilities 2023	FTA	$2,537,653	$2,207,758
Columbus County Transit Facility	Low- and No-Emissions Bus and Bus Facilities 2023	FTA	$351,000	$280,800
ICPTA Operations and Maintenance Facility	Low- and No-Emissions Bus and Bus Facilities 2023	FTA	$4,157,583.75	$3,326,067
SAFE Lumberton	RAISE 2023	FHWA	$11,000,000	$8,600,000
WALK NC	RAISE 2023	FHWA	$12,300,000	$9,000,000
Blue Ridge Byways	National Scenic Byways Program 2022	FHWA	$575,000	$460,000
Pembroke Creek Culvert	Aquatic Organism Passage 2022	FHWA	$590,000	$472,000
Ecusta Trail	Nationally Significant Federal Lands and Tribal Projects 2022	FHWA	$53,530,111	$21,412,044

The Project will be amended into the STIP, as currently only the Albemarle Bridge Project is listed. The amendment will include both bridges as part of the Project.

4.0 PROJECT OUTCOME CRITERIA

4.1 State of Good Repair

Improving the Condition of the Bridges

Albemarle Sound Bridge Summary

Constructed in 1990, the bridge carries NC 32 / NC 37 / NC 94 over the Albemarle Sound, between US 17 and US 64. The two-lane facility consists of 224 concrete trestle superstructure spans at the south end of the bridge, 162 concrete trestle superstructure spans at the north end of the bridge, and 31 spans of post-tensioned segmental concrete box superstructure between the trestle superstructure sections. Trestle spans are comprised of pre-cast, post-tensioned concrete deck slab supported by trestle bents. Each segmental box span consists of multiple pre-cast box-girder segments supported by concrete piers. Substructures for the trestle sections are pile caps on prestressed concrete piles. Substructures for the segmental box sections are concrete columns and caps on concrete pile footings on prestressed concrete piles. While routine maintenance of the bridge has been performed, no significant preservation activities have been undertaken.

The most recent Underwater Inspection indicates that the prestressed concrete piles exhibit cracking from hairline to 1/16" wide and have scaling up to 1/4" deep, resulting in an NBI Score of 4 (Poor). The most-recent Routine Inspection Report indicates that the Deck and Superstructure are in Good condition (NBI Scores of 6 and 6, respectively).

Inspection and testing of the existing bridge has indicated that the post-tensioning strand and grout ducts are in good condition. Chloride content in the concrete components at reinforcing and post-tension strand is well below a level to induce corrosion. Alkali Silica Reactivity (ASR) has been detected in all components, ranging from mild to severe.

While routine and regular maintenance will be required, the proposed bridge preservation activities are expected to extend the life of the structure by 75 years.

Three Rivers Bridge Summary

Constructed in 1968, the Three Rivers Bridge carries NC 45 / NC 308 over Roanoke, Middle and Cashie Rivers, between US 17 and US 64. The two-lane facility consists of 16 prestressed concrete girder superstructure spans at the south end of the bridge, 76 prestressed concrete girder superstructure spans at the north end of the bridge, and 3 spans of continuous steel plate girder superstructure between the prestressed concrete girder superstructure sections. Each span of steel or prestressed concrete girders consists of four girders. Substructures for the first 34 spans from the south end of the bridge are concrete columns and caps on concrete pile footings on octagonal prestressed concrete piles. Substructures for the remaining 61 spans at the north end of the bridge are pile caps on octagonal prestressed concrete piles.

Since 2005, three separate projects have placed a Latex Modified Concrete (LMC) overlay and replaced joints and seals in the bridge deck; repaired, cleaned, and painted structural steel plate girders; and repaired concrete spalls and delaminations in the Superstructure and above-water Substructure.

The most recent Underwater Inspection indicates that the prestressed concrete piles exhibit cracking from hairline to 1/16" wide and have scaling up to 1" deep, resulting in an NBI Score of 4 (Poor). The most-recent Routine Inspection Report indicates that the Deck and Superstructure are in Good to Fair condition (NBI Scores of 6 and 5, respectively). Most of the Substructure is in Good condition, as well.

While routine and regular maintenance will be required, the proposed bridge preservation activities are expected to extend the life of the structure by 75 years. These two bridges have been integral to North Carolina's history, witnessing countless events and serving multiple generations.

Improving Protections

The Albemarle Sound Bridge, with its 2,900 ADT, and the Three Rivers Bridge, boasting a 4,000 ADT, have been silent witnesses to history. However, both bridges' channel protection ratings, currently at a concerning "poor," signifies the urgency of intervention. Addressing these issues is not a mere maintenance chore; it's a commitment to the safety of the approximately 6,900 daily commuters.

Bridge Condition and Risks:

- **Age:** As the bridge approaches the latter part of its expected service life, the wear and tear on the bridge, especially on its concrete cast-in-place deck, are expected to be significant.
- **Sustainability:** With the presence of Alkali Silica Reaction (ASR) in concrete components, the deterioration of the concrete will be more enhanced than non-ASR concrete. Concrete with ARS will crack, allowing easier infiltration of water and chlorides into the interior of the concrete, accelerating deterioration and increasing the potential for corrosion of steel reinforcing components in the concrete.
- **Increase in Traffic:** With the bridge's ADT expected to rise to 5,800 by 2040, this will mean increased loads and stresses on the bridge, accelerating its deterioration.
- **Truck Traffic:** The 7% of the bridge's traffic that comprises trucks exerts far more stress on the structure than regular vehicular traffic, increasing the rate of wear.

Alignment with NCDOT TAMP

The BRITE Bridges project directly align with the goals stated in the NCDOT TAMP. The Project aims to:

- Enhance the safety of the bridge, ensuring it can handle future traffic loads without risk of structural failure.
- Deliver and maintain our infrastructure effectively and efficiently, ensuring the longevity of the bridge.
- Improve reliability and connectivity by avoiding potential future closures or weight restrictions.
- Promote economic growth by ensuring a vital connection remains open and in good repair, facilitating the flow of goods and people.

Asset Management Plan

Given the emphasis NCDOT has placed on reducing the number of structurally deficient bridges, this Project seeks to proactively address potential deficiencies in the NC Highway 32 Albemarle Sound Bridge before it reaches a critical state. NCDOT's goal is to reduce the percentage of bridges in structurally deficient condition to 2% on the Interstate, 6% on the primary system, and 15% on the secondary system by 2030.

Aligning with Section 4.5.2 of the TAMP, the BRITE Bridges project falls into the category of Preservation and Rehabilitation. By repainting and waterproofing, cleaning, and sealing or replacing expansion joints, we ensure preservation. Bridge deck enhancements and scour remediation will fall under rehabilitation, directly addressing the potential for degradation and prolonging the bridge's lifespan.

Reducing Maintenance Costs

By aligning the Project with the stated goals and practices of the NCDOT TAMP, and by having a comprehensive maintenance plan in place, the Project's aim is to ensure the BRITE Bridges remains in good condition for many more years, serving as a reliable conduit for the residents and businesses of North Carolina.

Maintenance Plan:

- **Maintenance:** Regular spot repairs will be conducted, including vegetation removal, cleaning, and standard component repairs to ensure minor issues do not escalate. A biennial inspection will be incorporated to spot early signs of wear and tear.
- **Preservation:** The bridges will undergo periodic repainting and waterproofing. Additionally, the sealing or replacement of expansion joints will be carried out as required to preserve the bridges' integrity.
- **Rehabilitation:** Deck and expansion joint replacements will be scheduled as necessary based on the findings from regular inspections. Scour remediation will be attended to, ensuring the bridges' foundation remains solid.
- **Reconstruction:** While not immediately required, provisions will be made for potential future reconstruction elements, such as the full replacement of the deck, superstructure, or substructure as the bridges further age.

Existing Conditions at the BRITE Bridges

4.2 Safety and Mobility

According to the 2020 US Decennial Census[2], a total of 42,645 individuals live in Bertie, Chowan, and Washington Counties. Within these populations, an average of 83% of employees commute to work using a private vehicle. An additional average of 8.5% of the total population commutes to work using a carpool. In summary, a grand total of 91.5% of the total population of these counties rely on a personal vehicle to get to work, school, the grocery store, and all other aspects of life around the Albemarle Sound.

In 2021, a total of 53,811 vehicles were registered across all three counties. Bertie County estimated the average annual miles traveled in 2021 to be around 32,300. Chowan county estimated 13,200 miles traveled in 2021. Washington County estimated over 16,100 miles traveled per person per year. Needless to say, the critical nature of the two bridges providing access to the area is clear.

	Registered Vehicles	Estimated Avg. Annual Miles Traveled
(100 MVMT)		
Bertie County	22,784	3.23
Chowan County	17,393	1.32
Washington County	13,634	1.61
Totals	**53,811**	**6.16**

In the No Build scenario, both bridges are anticipated to require eventual closure to traffic without significant capital investment to bring them into a state of good repair. As a result, substantial future detours and, therefore, additional vehicle miles traveled would materialize. Over the entire Benefit Cost Analysis (BCA) analysis period, the Project is expected to result in the avoidance of 4.8 billion passenger vehicle miles traveled and 364.5 million truck miles traveled. When adjusting for passenger occupancy, this results in a reduction of 8.5-billion-person miles traveled.

Vehicle Traveling on Bridge

2 US Census Data 2021

New and Continued Safety Benefits

The U.S. Department of Transportation (DOT) has adopted the Safe System Approach[3] as its core strategy for enhancing road safety. This method is widely recognized within the transportation sector as an effective means to reduce and manage the dangers present within our vast and intricate transport network. The approach operates by establishing and strengthening a series of protective measures that aim to both avert crashes before they occur and lessen the impact on individuals when crashes do happen. It represents a holistic and inclusive strategy, offering a foundational framework for creating safer environments for individuals.

Both the Albemarle Sound Bridge and the Three Rivers Bridge programs align with the U.S. Department of Transportation's Safe System Approach by implementing comprehensive preservation activities aimed at enhancing the safety and longevity of these critical structures.

For the Albemarle Sound Bridge, constructed in 1990, the scope of work includes replacing the barrier rail to meet current safety standards, repairing the deck, applying a polymer concrete overlay, and addressing concrete spalls and delaminations. These measures, along with the installation of pile and footing jackets for cathodic protection and the treatment of concrete components with silane, are proactive steps in promoting a safe system by ensuring the structural integrity of the bridge. The focus on repairing and protecting the bridge's substructure and superstructure components from further deterioration due to environmental factors like chloride-induced corrosion and ASR reflects the Safe System Approach's emphasis on building redundancy and mitigating harm. Currently, the Albemarle Bridge is not recommended for bicycling or walking due to the low railing. The railings will be upgraded, thereby allowing non-motorized transportation to use the bridge.

Similarly, the Three Rivers Bridge, dating back to 1968, has undergone several preservation projects since 2005, including the application of a Latex Modified Concrete overlay and structural repairs. The current scope of work continues this trend by repairing the barrier rail, treating, and potentially replacing the LMC overlay, and maintaining the structural steel and concrete components. The use of silane treatment, epoxy coatings, and the replacement of steel bearings with elastomeric bearings are all in line with the Safe System Approach, which seeks to minimize risk by enhancing the bridge's ability to withstand both the operational stresses of traffic and the vulnerabilities of aging infrastructure. The Three Rivers Bridge is part of the North Carolina Bikeways Network[4] and specifically the Ports of Call bike route, which connects coastal ports from north to south. Safety upgrades to the railing will improve travel for non-motorized travelers using the bridge.

Both bridge programs demonstrate a shift from reactive to proactive safety measures, focusing on human error and vulnerability by designing a system that anticipates potential failures and mitigates their consequences. The expected extension of each bridge's life by 75 years through these preservation activities is a testament to the commitment to a future with zero fatalities and serious injuries, as envisioned by the U.S. DOT's National Roadway Safety Strategy. These programs encompass the holistic view of safety, addressing infrastructure robustness, responsible oversight, and the anticipation of emergency scenarios, thereby embodying the principles of the Safe System Approach.

3 US DOT Safe System Approach Program
4 North Carolina DOT, Bike Routes

Targeting Safety Concerns

The Project aims to address documented safety concerns and enhance the longevity of two critical bridges within the Project area.

For the Albemarle Bridge, the most recent inspections have revealed specific areas of concern that the Project will target. Despite the Deck and Superstructure being in Good condition, the prestressed concrete piles have shown signs of cracking and scaling, which have been deemed Poor with an NBI Score of 4. The presence of Alkali Silica Reactivity (ASR) across all components further necessitates comprehensive preservation measures. The Project includes replacing the barrier rail to meet current standards, repairing the deck, applying a polymer concrete overlay, replacing expansion joints, and addressing concrete spalls and delaminations. Additionally, the Project will employ epoxy injections for larger cracks, silane treatment for concrete components, and both galvanic and impressed-current cathodic protection for pile and footing jackets, respectively. These interventions are designed to mitigate the current safety issues and are projected to extend the bridge's life by 75 years.

Similarly, the Three Rivers Bridge, has undergone preservation efforts since 2005. However, the most recent inspections indicate that while the Deck and Superstructure are in Good to Fair condition, and most of the Substructure is in Good condition, there are still critical issues with the prestressed concrete piles, which also have an NBI Score of 4 (Poor). The proposed work for this bridge includes repairing the barrier rail, addressing issues with the Latex Modified Concrete (LMC) overlay, replacing expansion joints, and repairing spalls and delaminations. The Project will also apply silane treatment, spot paint structural steel, replace bearings, and install pile jackets with cathodic protection. These measures are crucial for addressing the identified safety problems and are expected to similarly extend the bridge's life by 75 years.

The Project directly targets the known safety issues documented in the Routine and Underwater Inspection Reports for both bridges. By implementing a comprehensive preservation strategy, the Project will not only rectify current safety concerns but also proactively enhance the structural integrity of these bridges, ensuring their safe operation as part of the wider transportation network for the foreseeable future.

Protecting the Public

According to the NCDOT, the 5-year average crash data across Bertie, Chowan, and Washington Counties shows over 900 crashes with 373 injuries resulting from the crashes from 2018 to 2022, with a 3-year average crash-cost totaling over $147 million dollars.[5]

	5 Year Crash Avg	# of Injuries over 5 Years	3 Yr Avg Annual Crash Costs
Bertie County	436	196	$86,339,333
Chowan County	229	91	$32,321,000
Washington County	243	86	$28,650,133
Totals	**908**	**373**	**$147,310,466**

The Project will provide clear and direct safety benefits by avoiding additional detour-related vehicle miles traveled. Throughout the period of captured benefits within the Benefit Cost Analysis (BCA), the Project is estimated to generate a reduction of 9,840 crashes, with 69 resulting in fatalities, 4,009 resulting in injuries, and 5,762 resulting in non-fatalities and non-injuries.

5 North Carolina DOT, Crash Data 2022

Additionally, over the entire BCA analysis period, the Project is estimated to result in the reduction of 103.0 million passenger vehicle hours traveled and 7.8 million truck hours traveled. Adjusted for passenger occupancy, the Project is expected to result in the reduction of 179.8 million person-hours traveled due to avoided detours in the No Build scenario.

4.3 Economic Competitiveness and Opportunity

Bridging Economic Growth

The Albemarle Sound Bridge and the Three Rivers Bridge are more than just structures spanning water; they are the lifeblood of the region, facilitating a continuous flow of economic and social activity within the Inner Banks of North Carolina. By connecting disparate communities, these bridges serve as vital conduits for commerce, enabling local businesses to thrive by providing a direct route for the distribution of agricultural products and goods along US Highway 17. They also support local tourism by linking scenic and recreational areas, such as the tranquil waters of the Albemarle Sound and the historical richness of the surrounding counties, to the broader transportation network.

For residents, these bridges are gateways to essential services, including education and healthcare, ensuring that those living in rural areas are not isolated from the opportunities and resources available in urban centers. By enabling efficient and reliable travel, the BRITE Bridges do not merely connect points on a map; they weave the fabric of community life, supporting the region's economic vitality and the daily rhythm of its inhabitants.

Economic Profiles: Bertie, Chowan, and Washington Counties

The economic indicators for the three counties in the area reveal a tapestry of resilience amidst adversity. Most of the project area is classified as an area of persistent poverty, with Bertie and Washington Counties identified at the county level and two of the three census tracts in Chowan County identified at the census tract level. Additionally, every census tract is Bertie County is identified as a historically disadvantaged community and Chowan and Washington Counties also have portions that are classified as historically disadvantaged, with one out of three tracts and two out of three tracts respectively.

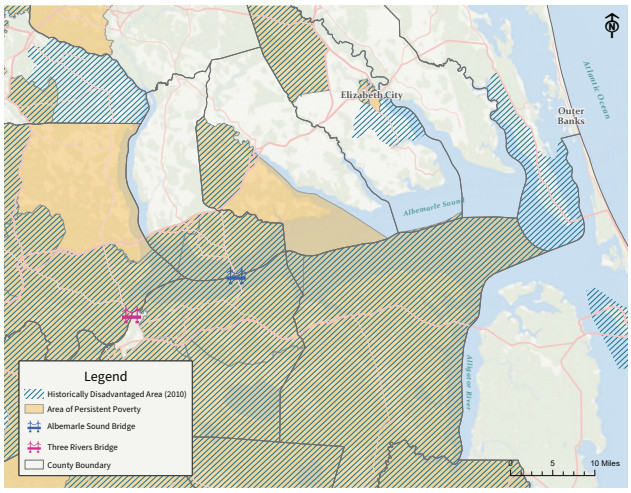
County	Census Tract Name	Areas of Persistent Poverty		Historically Disadvantaged Communities - Census Tract
		County	Census Tract	
Bertie County	Census Tract 9601	Yes	No	Yes
Bertie County	Census Tract 9602	Yes	Yes	Yes
Bertie County	Census Tract 9603	Yes	No	Yes
Bertie County	Census Tract 9604	Yes	Yes	Yes
Chowan County	Census Tract 9301.01	No	Yes	Yes
Chowan County	Census Tract 9301.02	No	Yes	No

County	Census Tract Name	Areas of Persistent Poverty		Historically Disadvantaged Communities - Census Tract
		County	Census Tract	
Chowan County	Census Tract 9302	No	No	No
Washington County	Census Tract 9501	Yes	Yes	Yes
Washington County	Census Tract 9502	Yes	Yes	Yes
Washington County	Census Tract 9503	Yes	No	No

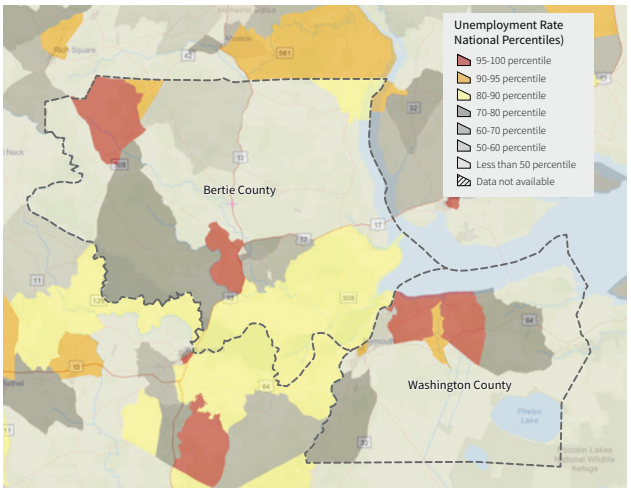
The following economic profiles show the depth of need in this area. These numbers represent more than statistics; they are a mirror reflecting the daily realities of the counties' residents. The prevalent use of cars and the average commute time highlight the community's dependence on the bridges for essential activities, including education, employment, and healthcare access.

Economic Profiles	Bertie County	Chowan County	Washington County
Poverty Rate	24.0%	22.0%	24.2%
Employment Rate	42.5%	49.4%	42.2%
Median Income	$32,571 per year	$46,288 per year	$32,937 per year
Single Car Usage	83.7%	85.9%	83.6%
Average Commute	26.9 minutes	31.1 minutes	27.2 minutes
School Enrollment	75.9%	80.0%	80.9%

As shown in the EPA's Environmental Justice Screening and Mapping Tool statistics below, significant portions of both Bertie and Washington Counties are reported as 'low income' and have historically experienced high unemployment rates.



Low Income Rate Map

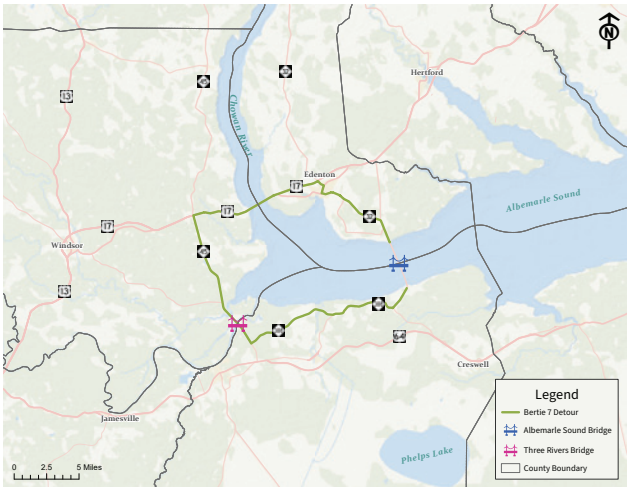


Unemployment Rate Map – EPA EJScreen
EPA's Environmental Justice Screening and Mapping Tool (Version 2.2)

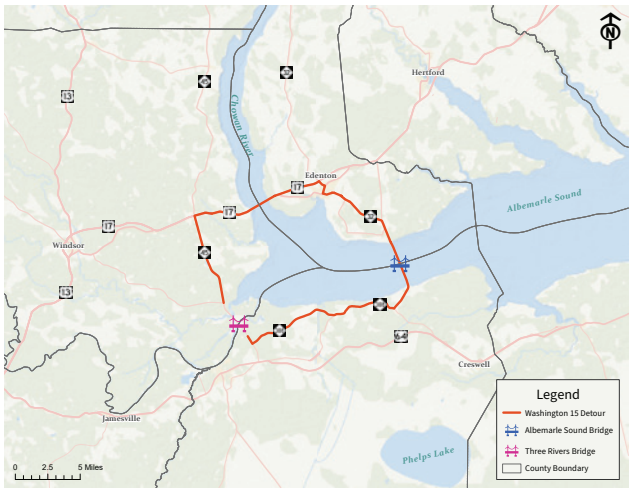
The Critical Nature of Bridge Infrastructure

The designation of both Bertie and Washington counties as "persistent poverty" areas underscores the necessity for strategic investments that can break the cycle of economic hardship. The bridges serve as critical arteries for the region, and their potential failure looms as a significant threat. Should these bridges fall into disrepair, the consequences would be immediate and severe: an additional 40 miles, 80 miles round trip, would be added to the daily commute for many residents. This detour would not only place an undue burden on the population, but it would also strain local industries and businesses, potentially stifling the flow of commerce and hindering access to essential services.

- **Bertie County** is predominantly rural, with 83.2% of its area falling outside urban centers. The Three Rivers Bridge is not just a convenience; it is a necessity for connecting these rural expanses to the economic hubs of the region.
- **Chowan and Washington County** share this rural character, with 67.6% and 67.8% of its area classified as rural respectively. The Albemarle Sound Bridge is similarly indispensable, serving as a vital conduit for the county's economic lifeblood.



Bertie 7 Detour Route Map



Washington 15 Detour Route Map

Commuting Patterns and the Dire Cost of Inaction

The dependence on personal vehicles for commuting in both counties underscores the lack of alternative transportation, making the bridges' functionality critical. The potential 80-mile round-trip detour resulting from bridge closures would not only triple the commuting time but also significantly increase fuel costs, wear and tear on vehicles, and the emotional toll on commuters. For commerce, the detour could disrupt supply chains, inflate transportation costs, and diminish the competitive edge of local businesses.

Over the entire BCA analysis period, the Project is estimated to result in the reduction of 103.0 million passenger vehicle hours traveled and 7.8 million truck hours traveled. Adjusted for passenger occupancy, the Project is expected to result in the reduction of 179.8 million person-hours traveled due to avoided detours in the No Build.

Efforts to Support Good-Paying Jobs and Strong Labor Standards

The BRITE Bridges project, recognizing the pivotal role of skilled labor in the success of infrastructure initiatives, is set to harness the potential of local workforce development centers, community colleges, and NC Works[6] to create a robust pipeline of skilled professionals who can contribute to the project. These partnerships aim to cultivate a homegrown workforce that is not only equipped with the necessary technical skills but also benefits from stable employment opportunities that adhere to strong labor standards.

Local workforce development centers have the opportunity to serve as a connection for job training and placement, acting as intermediaries between the BRITE Bridges project and the community. They can identify the specific skill sets required for the project and develop tailored training programs in collaboration with community colleges. By potentially aligning the curricula with the project's needs, these programs can ensure that students are job-ready upon completion. This method of a targeted approach would aim to reduce skill gaps and unemployment rates simultaneously providing a well-trained workforce for the BRITE Bridges project while also offering community members pathways to good-paying jobs.

Community colleges in the region would be key partners in this endeavor, leveraging their existing infrastructure and expertise to deliver education and training programs designed for the construction and maintenance of infrastructure. These institutions are strategically positioned to offer certification courses, apprenticeships, and hands-on training in fields such as civil engineering technology, construction management, and environmental sciences. By collaborating with the BRITE Bridges project, community colleges would not only contribute to the regional economy by producing skilled workers but would also provide their students with valuable, real-world experience and the promise of gainful employment upon graduation.

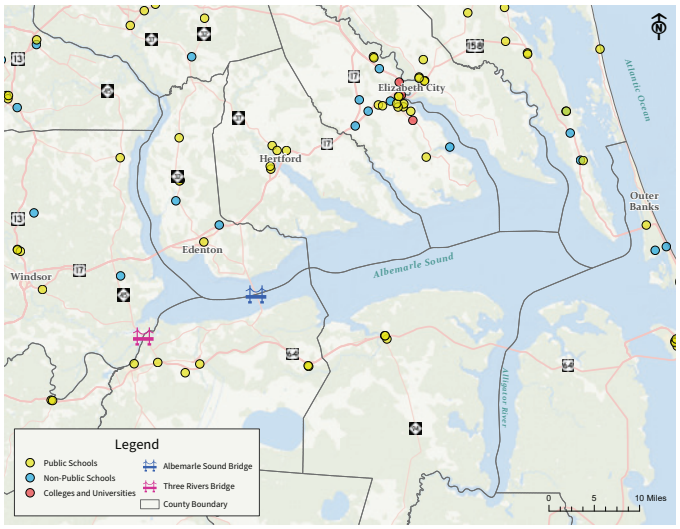
NC Works, in collaboration with the North Carolina Department of Commerce, is comprehensive workforce solution system. NC Works could also play a central role in connecting job seekers with the project. By providing a platform for job listings, career planning, and labor market data, NC Works could help the project's human resources team to reach a wide audience of potential employees. Through NC Works, the project would have access to a diverse pool of candidates, including those from historically underrepresented and disadvantaged groups, ensuring that hiring practices are equitable and inclusive. A partnership with NC Works would be instrumental in promoting strong labor standards and good-paying jobs, as it would provide transparency and accessibility for all job postings related to the BRITE Bridges project, thereby upholding the Project's commitment to community upliftment and professional development.

Existing Conditions at the BRITE Bridges

6 NC Works, North Carolina Government Program

Education as a Cornerstone for Growth

The Bertie County School District engages over 1,700 students and 120 teachers, while Washington County School District serves 1,051 students with a faculty of 65. Chowan County hosts 2,342 students enrolled in public schools. Approximately 22.7% of Bertie County's workforce and 21.2% of Washington County's are employed within the education sector, many of whom depend on the Three Rivers Bridge for their daily commute, as it links the majority of the educational facilities via NC 45.



Location of Schools in Relation to the BRITE Bridges

Combined with the high level of dependence on personal vehicles in both counties for commuting and other activities, the BRITE Bridges are critical for the area's educators to be able to get to and from the educational institutions.

The Economic Multiplier from Infrastructure Investment

The proposed bridge projects are anticipated to generate substantial economic benefits. In Bertie County, 24.3% of the employed population work in construction and manufacturing, with Washington County close behind at 23.4%. The bridge restoration is expected to boost employment in these sectors. The local economy will experience a multiplier effect, with gains proliferating from construction companies to local eateries, fostering a revitalized economic environment that will endure well beyond the Project's completion.

Freight and Commerce

These bridges are crucial for the state's freight movement. Efficient bridges mean faster transportation times, reduced wear and tear on vehicles, and timely deliveries. For a state that thrives on agriculture and manufacturing, this can translate to millions in savings and increased profits.

Through the avoidance of extensive detour-related vehicle miles traveled, the Project will directly lower fuel consumption by passenger vehicles and trucks. The Project is expected to result in the reduction of 212.4 million gallons of gasoline and 59.7 million gallons of diesel over the analysis period.

Additionally, the two bridges play a vital role in the 'last mile' transportation concept. In supply chain management and transportation planning, the last mile is the last leg of a journey comprising the movement of passengers and goods from a transportation hub to a final destination. The 'last-mile' describes the logistical challenges at the last phase of transportation getting people and packages from hubs to their final destinations.

Last-mile delivery is an increasingly studied field as the number of business-to-consumer (b2c) deliveries grow, especially from e-commerce companies in freight transportation, and ride-sharing companies in personal transportation. Some challenges of last-mile delivery include minimizing cost, ensuring transparency, increasing efficiency, and improving infrastructure.

Funding for the design of the infrastructure improvements to both Albemarle Sound and Three Rivers Bridge will ensure that these transportation networks can better handle the increasing demand and complexities of last-mile delivery. Effective last-mile logistics can lead to improved customer satisfaction, as it speeds up delivery times and reduces shipping costs. With the proper investment, these bridges could facilitate smoother traffic flow, reduce congestion, and serve as critical arteries for commercial activities, thereby directly contributing to the economic vitality of the region. The enhanced infrastructure would also support local businesses by providing more reliable delivery services, which is crucial for maintaining competitiveness in the fast-paced world of e-commerce.

Tourism and Connectivity

North Carolina, with its rich history and natural beauty, is a tourist magnet. Enhanced bridges not only facilitate smoother tourist inflow but also ensure that localities on either side of the bridge benefit from increased footfall and tourism dollars.

The Albemarle Sound area is neighbor to the Outer Banks of North Carolina. According to the state of Dare County 2022 tourism report[7], "Dare County had $1.83 billion in visitor spending in 2022, creating $67.6 million in state tax revenue and $79.2 million in local tax revenue".

South Approach

Both BRITE Bridges are major arteries to US Route 64 which is one of only two available vehicular routes to the Outer Banks. Should these two bridges fall into further disrepair and require closure, there could be a significant impact on the tourism industry not only making it significantly more difficult for tourists to access the area but freight and commerce supplying the hotels and restaurants as well.

4.4 Climate Change, Sustainability, Resiliency, and the Environment

Constructing with a Vision

In the face of 218 individual extreme weather events over the past decade, as categorized by the National Oceanic and Atmospheric Administration (NOAA)[8], the infrastructure must be resilient. The Project champions the use of sustainable materials, reducing carbon footprints and ensuring these bridges can endure the challenges of the next century.

Top Types of Weather Events	# of Weather Events from 2013 – 2023
Severe Thunderstorm	63
Heavy Rain	30
Winter Storm	23
Flood Events (Coastal/Flash)	19
Tropical Storm	17
Tornado	12

7 Dare County Tourism Statistics 2022
8 National Oceanic and Atmospheric Administration Storm Events Database 2013 - 2023

Embracing Sustainability

Recycling is a pivotal component of the Project, reflecting a commitment to environmental stewardship. Concrete demolition materials from the existing bridges will be repurposed, with possibilities including the enhancement of artificial fish reefs or processing into construction aggregates. Additionally, salvaged steel reinforcement bars will be recycled, aligning with sustainable practices. This approach not only mitigates environmental impact but also contributes to the circular economy by reusing materials in meaningful ways. Furthermore, the Project envisages partnerships with NC Works, local Workforce Development Centers, and Community Colleges to facilitate training and employment opportunities in construction trades, exceeding the standard Trainee Program requirements for Federally Funded Projects. This initiative is poised to not only build bridges but also bolster the local workforce and economy.

Resilience in Design

Beyond immediate rehabilitation, the Project will incorporate features to improve resiliency of at-risk infrastructure by improving disaster preparedness. This includes materials that can withstand temperature fluctuations and design elements that can handle increased water levels and storm surges.

Harmony with Nature

The surrounding areas, especially the Albemarle Sound, are rich in biodiversity. The Project will ensure minimal disruption to local habitats, with special measures to protect aquatic life during construction.

Albemarle Sound-Roanoke River

The striped bass (Morone sazatilis) fish is a critical species for the state's commercial and recreational fishing industries. According to the North Carolina Wildlife Resources Commission[9], "Striped bass are found in most habitats identified by the North Carolina Coastal Habitat Protection Plan (CHPP) including: water column, wetlands, submerged aquatic vegetation (SAV), soft bottom, hard bottom, and shell bottom (NCDEQ 2016). Each habitat is part of a larger habitat mosaic, which plays a vital role in the overall productivity and health of the coastal ecosystem".

The Albemarle Sound-Roanoke River (A-R) striped bass stock is managed jointly by the North Carolina Division of Marine Fisheries (NCDMF), the North Carolina Wildlife Resources Commission (NCWRC), and the South Atlantic Fisheries Coordination Office (SAFCO) of the U.S. Regional Fishery Management Councils. The Albemarle Sound Management Area (ASMA) includes Albemarle Sound and all its joint and inland water tributaries, (except for the Roanoke, Middle, Eastmost, and Cashie rivers), Currituck Sound, Roanoke and Croatan Sounds and all of their joint and inland water tributaries, including Oregon Inlet, north of a line from Roanoke

9 North Carolina Wildlife Resources Commission

Marshes Point to the north point of Eagle Nest Bay. The Roanoke River Management Area (RRMA) includes the Roanoke River and its joint and inland water tributaries, including Middle, Eastmost, and Cashie rivers, up to the Roanoke Rapids Lake Dam.

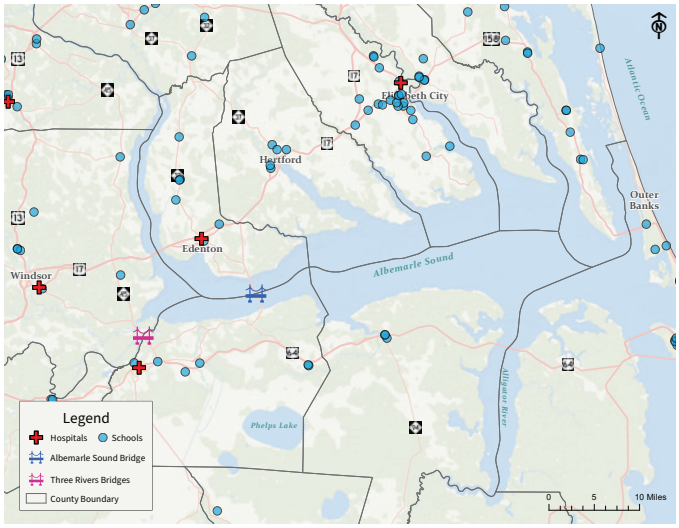
The design of the bridges themselves will pay homage to the region's rich ecological and historical significance. Parking areas and informational kiosks are proposed to educate visitors about the unique convergence of the three rivers—a cradle of early development in North Eastern North Carolina. The design will incorporate bridge railings that allow for an unobstructed appreciation of the natural environment, potentially utilizing Oregon-type metal railings instead of conventional solid concrete parapet walls. This design choice not only enhances safety but also ensures that travelers can fully engage with the scenic vistas of the crossing, fostering a deeper connection between infrastructure and the environment it traverses.

4.5 Equity and Quality of Life

Bridges that Bind Communities

Beyond facilitating commutes, these bridges connect families, friends, and communities. The results of the BRITE Bridges Project would reduce average travel times related to detours by 91% for travelers over the Albemarle Bridge and 98% for travelers over the Three Rivers Bridge. This translates to an additional 46.3 minutes and 63.4 minutes per avoided detour for commuters traversing the Albemarle and Three Rivers Bridges, respectively – all of which can be spent toward family time, recreation, or rest for the average commuter.

The map to the right shows the location of schools and hospitals in both Bertie and Washington counties. As previously stated, approximately 22% of the area population works in education. The BRITE Bridges support teachers and educators' ability to quickly and efficiently get to work. Additionally, the area has limited access to healthcare with only 3 major hospitals within the area of the BRITE Bridges.



Hospitals and Schools Using the BRITE Bridges

Most notably, Vidant Chowan Hospital in Edenton, North Carolina and Washington County Hospital in Plymouth, North Carolina have direct access via the Albemarle Sound and Three Rivers bridges, respectively. Should these bridges become impassable and/or unsafe, critical health support for the area would be in jeopardy. The additional 40-mile one-way trip to any of the hospital facilities would be an undue burden on the area.

The Albemarle Sound bridge is the main connection for Washington County to the Northeastern Regional Airport (EDE). While the airport is a small, regional airport, it does provide military landing rights and plays a part in the overall connectivity in the airspace along the eastern seaboard.

Community-Centric Planning

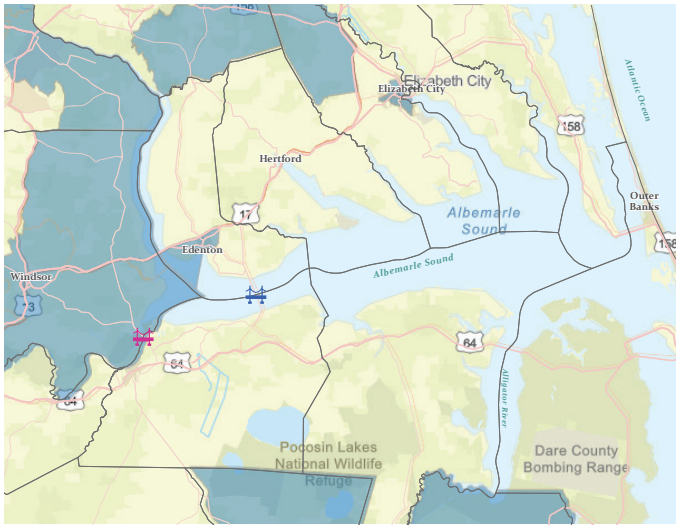
From the outset, community feedback will be integral to the Project. Regular town hall meetings, feedback sessions, and on-ground surveys will ensure that the rehabilitation reflects the needs and aspirations of the local communities. Feedback gathered from previous rehabilitation efforts has been used in scoping the Project.

Promoting Equity

Infrastructure projects of this scale offer ample employment opportunities. The Project will prioritize hiring locally, with a special focus on historically underrepresented groups, ensuring that the benefits of the Project are equitably distributed.

As shown in the EPA's Environmental Justice Screening and Mapping Tool[10] statistics map below, significant portions of Bertie County are designated as a 'food desert'. A food desert is defined as "an urban area in which it is difficult to buy affordable or good-quality fresh food". The EPA defines a 'food desert' as "low income and low access tract measured at 1 mile for urban areas and 10 miles for rural areas". The majority of Bertie County residents must travel more than 10 miles in order to find access to fresh food.

The Three Rivers Bridge is a lifeline for those experiencing food insecurities, as it provides direct access to the neighboring city of Plymouth, in Washington County. Should this bridge become unpassable, and additional 40-mile round trip would be added to those seeking food, further stressing the already depressed socio-economic situation in Bertie County.



Food Desert Map – EPA EJScreen

Further deepening the disparities that the area communities experience, the USDOT Justice40 initiative lists the area's transportation insecurities at 95% for Bertie County, 88% for Chowan County, and 80% for Washington County. Additionally, the UDSOT Equitable Transportation Community (ETC) states that the transportation cost burden in the area of the BRITE Bridges is higher than average.

County	Transportation Cost Burden *(% of household income spent on transportation)*	$ of Households with no Personal Vehicle
Bertie	27.44%	9.70%
Chowan	16.83%	4.00%
Washington	49.25%	14.10%

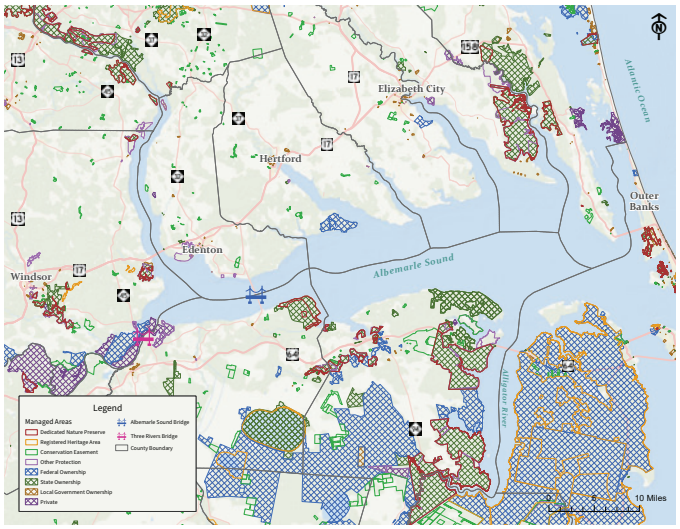
10 EPA's Environmental Justice Screening Justice 40 Tool

Couple the lack of access to public transportation, non-motorized methods of transportation, and the low walkability scores, these communities critically depend on the BRITE bridges in order to navigate daily life. It is imperative that the BRITE Bridges are restored to a good state of repair in order to continue serving these disadvantaged areas.

Enhancing Daily Lives

For many, these bridges are part of daily life, be it for work, school, or leisure. By reducing travel times and ensuring safer commutes, the Project aims to tangibly enhance the quality of life for thousands.

The area is steeped in natural beauty and area residents have opportunities to visit parks and national areas of recreation, such as the Pettigrew State Park in Washington County. However, as shown in the accompanying map, without the BRITE Bridges, access to these areas would become difficult if not extremely time consuming. The bridges allow residents and tourists to effectively navigate to and from the Outer Banks, as well as the many national fish and wildlife refuge spaces within the Albemarle Sound.



Locations of Parks/Green Space

The Three Rivers Bridge is identified as an official North Carolina bike route, specifically the NC 3 Ports of Call route[11] that traverses North Carolina's long and varied coastline including two major sounds – the Pamlico and Albemarle Sounds (Figure XX). The more than 300-mile route from Virginia to South Carolina passes through the major ports of the colonial era; Edenton, Bath, New Bern, Wilmington, and Southport among numerous other coastal communities. Not only does this bike route support tourism, but it connects the greater economically disadvantaged communities to additional areas of opportunity.

4.6 Innovation

Technological Integration

In the pursuit of enhancing the BRITE Bridges within the constraints of the waterways in Northeast North Carolina, innovative construction techniques become imperative. The limited depths of the Albemarle Sound, and the Roanoke, Middle, and Cashie Rivers (the Three Rivers) necessitate the use of construction methods that can adapt to restricted barge access. Elevated work trestle platforms or top-down construction methodologies are anticipated to be the primary means of bridge rehabilitation. These approaches allow for direct access to construction sites from above, mitigating the need for extensive in-water support systems, which is especially beneficial in shallow waters.

11 North Carolina DOT, Ports of Call Routes

Collaborative Approaches

As the Project enters the planning phase, it is crucial to engage with NCDOT Structures Management Unit experts to ascertain the corrosive nature of the environment, ensuring material choices are resilient to the existing conditions, ensuring the surrounding environment is not impacted by the construction efforts.

The potential of Carbon Fiber Prestressing Strand for piling emerges as a compelling option to enhance the durability and longevity of the bridge structures. Moreover, alternative materials for concrete reinforcement, such as Glass Fiber Reinforced Plastic (GFRP) and corrosion-resistant, high-strength reinforcing steel rebar, known as MMFX, present innovative possibilities for concrete caps and low water footings. These materials are renowned for their corrosion resistance and strength, making them ideal in the challenging environmental conditions expected at the Project site. The selection of materials will be critical to ensure the structures' resilience against the harsh environmental elements they will face, thus contributing to the overall sustainability of the Project.

This Project proposed to bundle two bridges for the purpose of project delivery, an innovation that is new to NCDOT. Doing this will allow for efficiencies in supplies and construction, and consideration for how to maintain regional traffic.

Given the complexities associated with access and the environmental sensitivity of the Project location, alternative delivery bidding methods like Construction Manager/General Contractor (CM/GC), Progressive Design-Build, or Conventional Design-Build could offer balanced solutions. These methods consider environmental considerations, constructability, and financial feasibility. They provide a platform for innovative problem-solving and facilitate a collaborative environment where design and construction professionals work in unison to address the unique challenges of the Project. This integrated approach is designed to yield efficient, cost-effective, and environmentally conscious outcomes.

5.0 BENEFIT COST ANALYSIS

The Project's purpose and need consist of addressing the poor condition of the existing bridges and preventing future closure to all vehicular traffic – thereby allowing the avoidance of significant detours and additional vehicle miles traveled. Without the Project and significant capital investment, the bridges must be replaced/preserve. According to the National Bridge Investment Analysis System (NBIAS), the Three Rivers Bridge is forecasted to require full closure to traffic beginning in 2037. According to the North Carolina Department of Transportation's Bridge Deterioration Model, the Albemarle Bridge's superstructure will reach a condition rating of 2 in 2045, the substructure will reach a condition rating of 2 in 2032, and the deck will reach a condition rating of 2 in 2053 – resulting in an average condition rating of 2 in 2043.[12] After applying the average natural rate of deterioration for bridges with a condition rating of 2 (3.68 years), the bridge is estimated to be fully closed in 2047.

As a result, the preservation of these bridges would avoid future closure of the bridges, thereby resulting in the avoidance of substantial additional vehicle miles traveled in the Build scenario while yielding significant project benefits related to travel time savings, vehicle operating cost savings, safety benefits, highway external use cost savings, and avoided emission cost savings.

12 Data provided by NCDOT bridge engineer.

The BCA quantifies and compares the net benefits and costs without and with the Project—the "No Build" and "Build" scenarios, respectively—and illustrates that over a 30-year analysis period, the Project's monetized benefits exceed the costs, as summarized in the table below. The full BCA is available in the Appendix.

Benefit-Cost Analysis Summary (Dollars in Thousands)

Description	Discounted (7%)*
Net Benefits	$1,354,870,859
Costs	$95,959,518
Benefit-Cost Ratio (BCR)	14.12
Net Present Value (NPV)	$1,258,911,341

* Except for CO_2 emissions, discounted at 3%, as per USDOT guidelines.

6.0 PROJECT READINESS AND ENVIRONMENTAL RISK

6.1 Technical Feasibility and Technical Competency

NCDOT has sufficient personnel resources and similar project experience to satisfactorily deliver a federally funded project through its technical capacity, fully committed local match, and consideration of environmental risks. The project presents a low-risk profile for numerous reasons:

- There will be minimal environmental impacts needing to be addressed during the permitting and NEPA process.
- Additional Right-of-Way acquisitions are not anticipated.
- NCDOT has a proven track record planning, designing, permitting, implementing, and constructing similar projects.
- The Project will be ready to start construction within the specified obligation deadline.
- $27,519,107.80 in State funding has been allocated for this project

6.2 Statement of Work

Both bridges are currently in the field scoping, evaluation, and preliminary engineering phase of project development.

This Project will include substantial preservation of both projects. The activities for the Albemarle Bridge include:

- Replace existing barrier rail with barrier that meets current standards
- Repair topside deck areas that will not be addressed with polymer-concrete overlay.
- Prepare the bridge deck surface and place polymer concrete deck overlay
- Replace bridge deck expansion joints and seals
- Repair concrete spalls and delaminations below bridge deck (on Superstructure and Substructure components)
- Inject larger select cracking with epoxy resin

- Coat above-water substructure concrete components and superstructure concrete components with silane treatment
- Install pile jackets with galvanic cathodic protection
- Install footing jackets with impressed-current cathodic protection
- Repair timber fender

The activities for the Three Rivers Bridge include:

- Repair damaged barrier rail
- Repair localized spalled or delaminated existing latex-modified concrete (LMC) overlay
- Treat cracking in existing LMC overlay with healer sealer
  (If field investigations indicate it is necessary, replace existing LMC with new LMC overlay, instead of localized repair and crack treatment)
- Replace bridge deck expansion joints and seals
- Repair concrete spalls and delaminations below bridge deck (on Superstructure and Substructure components)
- Inject larger select cracking with epoxy resin
- Coat above-water substructure concrete components and bridge deck parapet and soffit with silane treatment
- Clean and spot paint specific locations of structural steel members
- At expansion bearings, replace steel bearings with elastomeric bearings
- At fixed bearing locations, clean and paint with High Ratio Calcium Sulfonate Acrylic (HRCSA) coating
- Epoxy coat tops of bent caps and prestressed concrete girder ends
- Install pile jackets with galvanic cathodic protection
- Place rip rap slope protection at End Bent 2

The applicant, NCDOT, receives and manages Federal Highway Administration (FHWA) and some Federal Transit Administration (FTA) funding on behalf of the state of North Carolina. NCDOT has processes in place for implementing federally funded projects and works closely with USDOT and its operating agencies to ensure compliance with all federal regulations.

6.3 Project Schedule

NCDOT is prepared to deliver the Project on schedule. The following is the proposed schedule of milestones.

Milestone	Schedule
Preliminary Design	In Progress
25% Plans Completed	April 30, 2024
Final Plans Completed	October 25, 2024
PE Sealed Bid Documents Completed	January 7, 2025
Anticipated Letting Date	May 20, 2025
Work Completed: Albemarle Bridge	November 2027
Work Completed: Three Rivers Bridge	September 2028

Construction phasing of the Project is currently in the planning stage. While construction will begin on the Albemarle Bridge, NCDOT is planning for the contractor to have multiple crews working on the project so that activities can be occurring on both bridges. In the development of plans, NCDOT will develop a construction strategy that allows for work to move quickly and efficiently, while maintaining traffic operations. This will occur by phasing the work so that the bridges can serve as detours for each other when closures are necessary.

7.0 REQUIRED APPROVALS

7.1 Environmental Permits and Reviews

The Project is currently in preliminary engineering with NEPA to begin in early 2024. As this is a preservation project, a Categorical Exclusion is expected. NCDOT is experienced at managing the construction of bridges over ecologically sensitive areas and will have specific plans in plans to reduce the potential for impacts.

7.2 State and Local Approvals

Other than general requirements for project delivery by NCDOT, there are no identified state or local approvals necessary to move the Project forward. NCDOT will follow their standard process for approving the design and construction of the Project.

The BRITE Project is widely supported in the region, as shown by the letters of support provided in the Appendix. No specific local approvals are necessary to move this project forward, however NCDOT will coordinate with local municipalities throughout the design and construction of the Project.

7.3 Federal Transportation Requirements Affecting State and Local Planning

While the entirety of the Project is not in the STIP, NCDOT plans to include this project in a future amendment. As the Project is fully rural, there is not a Metropolitan Planning Organization serving the area.

7.4 Assessment of Project Risks and Mitigation Strategies

Due to the nature of this construction project, the risks are comparatively low. To manage financial issues related to inflation, the Project cost has been estimated for the year of expenditure. The schedule has been developed to mitigate risk of construction delays; with ample time for construction activities to be completed on both bridges.

Supplemental Materials are available here:
https://connect.ncdot.gov/resources/BIP2023-BRITE/Pages/default.aspx [connect.ncdot.gov]

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APPENDIX A:

LETTER OF FINANCIAL COMMITMENT

THE BRITE BRIDGES:

Bridging Resources for Infrastructure and Thriving Economies Project

APPENDIX B:

LETTERS OF SUPPORT

THE BRITE BRIDGES:

Bridging Resources for Infrastructure and Thriving Economies Project

APPENDIX C:

BENEFIT COST ANALYSIS (BCA)

THE BRITE BRIDGES:

Bridging Resources for Infrastructure and Thriving Economies Project

APPENDIX D:

BRIDGE INSPECTION REPORTS – ALBEMARLE

THE BRITE BRIDGES:

Bridging Resources for Infrastructure and Thriving Economies Project

APPENDIX E:

BRIDGE INSPECTION REPORT – THREE BRIDGES

THE BRITE BRIDGES:

Bridging Resources for Infrastructure and Thriving Economies Project

APPENDIX F:

CURRENT MAINTENANCE EXPENDITURES

THE BRITE BRIDGES:

Bridging Resources for Infrastructure and Thriving Economies Project

APPENDIX G:

CRASH SUMMARY

THE BRITE BRIDGES:

Bridging Resources for Infrastructure and Thriving Economies Project