Fiscal Years 2024 through 2026 Promoting Resilient Operations for Transformative, Efficient, and Cost-Saving Transportation Competitive Grant Program, Resilience Grant Application, PROTECT



The NC 88 Mountain Corridor Resilience and Stabilization Project

NCDOT Priority #11

Applicant:
North Carolina Department of Transportation

October 9, 2026

Fiscal Years 2024 through 2026 Promoting Resilient Operations for Transformative, Efficient, and Cost-Saving Transportation Competitive Grant Program
Resilience Grant Application Template

Summary

Project Title	**The NC 88 Mountain Corridor Resilience and Stabilization Project**
Lead Applicant Name	**North Carolina Department of Transportation**
Lead Applicant Type	Select from the below statutory eligible applicants: ☒ A State or political subdivision of a State. ☐ A metropolitan planning organization. ☐ A unit of local government. ☐ A special purpose district or public authority with a transportation function, including a port authority. ☐ A federally recognized Indian Tribe (as defined in Section 207(m)(1)). ☐ A Federal land management agency that applies jointly with a State or group of States. ☐ A multi-State or multijurisdictional group of entities described above.
Type of Grant(s)	☒ Resilience Improvement ☐ Community Resilience and Evacuation Route ☐ At-Risk Coastal Infrastructure
Eligible Activities	**Resilience Improvement Grants (23 United States Code (U.S.C.) § 176(d)(4)(A)(ii)):** ☒ Resurfacing, restoring, rehabilitating, replacing, improving, or realigning a facility eligible for assistance under this program (see eligible facilities in the row below). ☐ Incorporating natural infrastructure. ☒ Upgrading existing surface transportation facilities to meet/exceed FHWA design standards. ☒ Installing flood mitigation measures. ☒ Strengthening rainwater removal systems. ☒ Upgrading or installing structural stormwater controls. ☒ Constructing a resilience project that addresses vulnerabilities described in the Resilience Improvement Plan (RIP) in your jurisdiction. ☐ Relocating roadways in a base floodplain. ☒ Stabilizing slide areas or slopes. ☒ Installing riprap. ☒ Lengthening or raising bridges. ☒ Increasing size or number of drainage structures.

	☐ Installing seismic retrofits on bridges. ☐ Adding scour protection on bridges. ☐ Adding scour, stream stability, coastal, and other hydraulic countermeasures, including spur dikes. ☐ Implementing vegetation management in the right-of-way. ☐ Installing any other protective features, including natural infrastructure. **Community Resilience and Evacuation Route Grants (23 U.S.C. § 176(d)(4)(B)(ii)):** ☐ Constructing a Resilience Improvement project under 23 U.S.C. § 176(d)(4)(A)(ii) that will improve an evacuation route. ☐ Restoring or replacing an evacuation route to ensure it can provide safe passage and/or making improvements to reduce the risk of damage to evacuation routes (e.g., steps to protect routes from mud, rock, or other debris slides). ☐ Expanding capacity of evacuation routes. This includes installation of communications and intelligent transportation systems, counterflow measures, and shoulders. (*Note: if yes, explain how existing evacuation routes are not sufficient to adequately facilitate evacuations)* ☐ Constructing new or redundant evacuation routes. (*Note: if yes, explain how existing evacuation routes are not sufficient to adequately facilitate evacuations)* ☐ Acquiring evacuation route or traffic incident management equipment/signage ☒ Constructing a project that will ensure access or service to critical destinations[1]
Long-Term Infrastructure Cost Reduction	For At-Risk Coastal Infrastructure Grant applications only *(check if yes):* ☐ The proposal will reduce long-term infrastructure costs by avoiding larger future maintenance or rebuilding costs. Documentation: N/A
Project Area	NC 88 between Warrensville and Smethport, Ashe County, North Carolina
Amount of Funding Requested Under this NOFO	$60,000,000

[1] "Critical destinations" could include hospitals and other medical or emergency service facilities, major employers, critical manufacturing centers, ports and intermodal facilities, utilities, and Federal facilities. See 23 U.S.C. § 176(d)(4)(B)(ii).

Cost Share Requested[2]	87%
Total Project Cost	$104,933,425
Which type(s) of natural hazards does the project address?	Flooding Landslides
Which transportation modes are addressed by the project?	Roadway

Project Description

The North Carolina Department of Transportation (NCDOT), requests Resilience Improvement funding under the federal PROTECT program for the NC 88 Mountain Corridor Resilience and Stabilization Project ("the Project"). The Project will modernize and fortify a highly vulnerable 3.76-mile mountainous section of NC 88 stretching from the NC 194 intersection in Smethport to the NC 194/NW School Road intersection in Warrensville.

Located in the flood-prone Blue Ridge Mountain region, this critical corridor suffers from sharp curves and severe structural vulnerabilities to flooding along Buffalo Creek. The proposed Project will replace two critically at-risk bridges over Buffalo Creek which were built in 1949 and are now rated as in poor condition (4 out of 10). The Project will also implement curve realignments, construct systemic drainage improvements, and add 5-foot paved shoulders along with a modern roundabout.

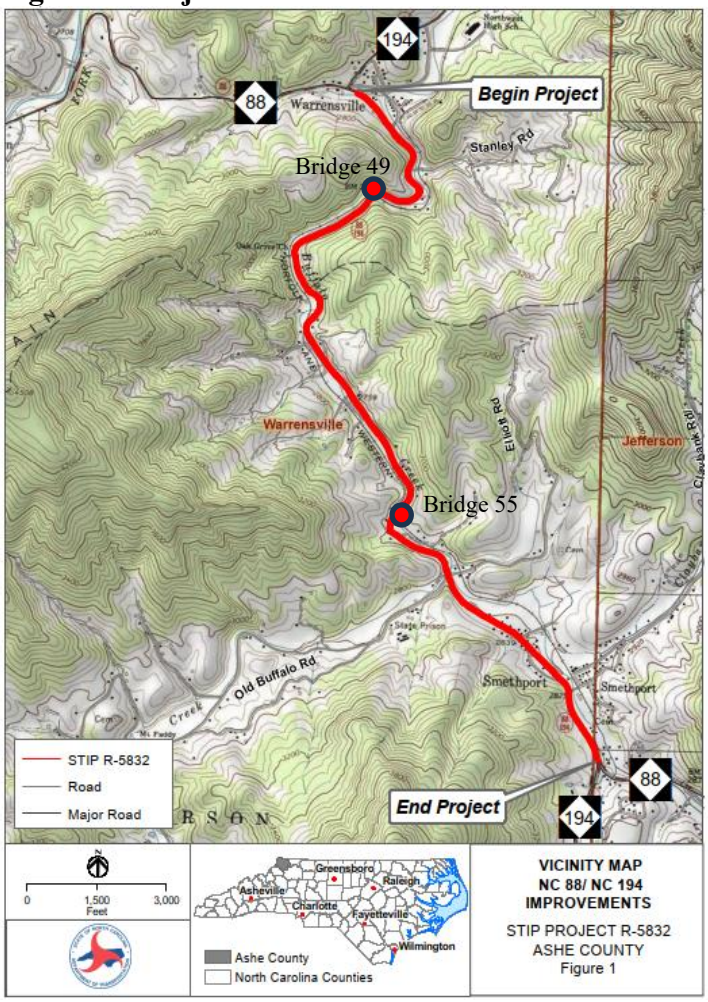
The NC 88 corridor serves as a primary logistics, economic, and emergency service spine for northern Ashe County. It serves rural residents, agricultural commerce, and local school bus routes. However, the existing infrastructure is not equipped to handle the intensified severe weather events impacting the Appalachian high country. This was evidenced during Hurricane Helene, when full and partial closures of the roadway reduced the redundancy and reliability of the emergency transportation network serving the community. The loss or degradation of this primary transportation corridor could substantially increase emergency response times and create additional operational risks for both responders and the public.

Attachments:	NCDOT11-2026 PROTECT Appendix A Letter of Financial Commitment NCDOT11-2026 PROTECT Appendix B Letters of Support NCDOT11-2026 PROTECT Appendix C NC 88 Budget Narrative NCDOT11-2026 PROTECT Appendix D Categorical Exclusion

I. Project Information

1	**Project Title**	The NC 88 Mountain Corridor Resilience and Stabilization Project
2	**Project State**	North Carolina

[2] See NOFO Section C.2 for Cost Sharing or Matching information.

3	**Project Location**	The NC 88 Mountain Corridor Resilience and Stabilization Project is located on a 3.76-mile mountainous section of NC 88 stretching from the NC 194 intersection in Smethport to the NC 194/NW School Road intersection in Warrensville, Ashe County, North Carolina. Ashe County is in the northwest corner of North Carolina, within the Blue Ridge Mountain Region, framed by Tennessee and Virginia. NC 88 serves as the primary road for residents in the region and serves as a Major Traffic Artery that crosses east to west through the county. It connects to NC 194 and provides access to US Highway 221 to the South. Figure 1 provides a map of the Project's location and connections to existing infrastructure, while Table 1 sets out the latitude and longitude of the Project start and end points. **Figure 1: Project Location**  Source: NCDOT

<table>
<tr><td></td><td></td><td>Table 1: Latitude/Longitude of Project Start and End Points
<table>
<tr><th>Start Point/End Point</th><th>Latitude</th><th>Longitude</th></tr>
<tr><td>Start: Warrensville</td><td>36.461014</td><td>-81.520033</td></tr>
<tr><td>End: Smethport</td><td>36.420514</td><td>-81.500246</td></tr>
</table></td></tr>
<tr><td>4</td><td>Which Census tract(s) does the project encompass?</td><td>Census Tracts 9704 and 9705</td></tr>
<tr><td>5</td><td>Is the project fully located in a Rural area?[3]</td><td>☒ Yes
☐ No</td></tr>
<tr><td>6</td><td>Is the project located in a base floodplain?</td><td>☒ Yes
☐ No
The Project is located in a FEMA Flood Hazard Zone AE. The Project will implement components of the risk mitigation plan under section 322 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5165), with respect to the area (23 U.S.C. § 176(d)(5)(B)(ii)), by including the identification of natural hazards, risks, and vulnerabilities of the corridor; and by identifying and prioritizing mitigation actions as resources become available from the state or Federal governments.</td></tr>
<tr><td>7</td><td>Other Parties</td><td>N/A</td></tr>
<tr><td>8</td><td>Eligible Facility Type</td><td>Select from list below (check all that apply):
☒ Highway project eligible for assistance under Title 23;
☐ Public transportation facility or service eligible for assistance under chapter 53 of Title 49;
☐ Facility or service for intercity rail passenger transportation (as defined in Section 24102 of Title 49); or
☐ Port facility, including a facility that:
a. Connects a port to other modes of transportation;
b. Improves the efficiency of evacuations and disaster relief; or
c. Aids transportation. (23 U.S.C. § 176(d)(5)C).</td></tr>
<tr><td>9</td><td>Project Background</td><td>Located in the flood-prone Blue Ridge Mountain region, the NC 88 Mountain Corridor suffers from a high volume of flood and heavy rainfall events. Over the ten years between June 2016 to June 2026, Ashe County suffered at least 27 flood events and 22 heavy rain events. Taken together, the Corridor has experienced an average of five severe storm events every year over the past decade.[4]</td></tr>
</table>

[3] For purpose of this notice, the PROTECT Competitive Grant Program defines a rural area as any area outside of an Urbanized Area with a population over 200,000. (23 U.S.C. § 176(d)(5)(H)(ii)). Applicants can use the FHWA HEPGIS maps of MPO and 2020 Census Urban Areas to find this information: https://hepgis-usdot.hub.arcgis.com/apps/72bcd861285c423c9d4aec6b8e48a496/explore.

[4] National Centers for Environmental Information. National Oceanic and Atmospheric Administration (NOAA)

		The most significant of these events occurred in September 2024 with Hurricane Helene. The resulting flooding caused numerous small landslides along NC 88 West, creating intermittent hazards and impeding the ability of law enforcement, fire, rescue, and EMS personnel to safely and efficiently reach residents. Hurricane Helene had an estimated property damage of $116.6 million and one fatality reported in Ashe County alone. The infrastructure along the NC 88 Corridor is not equipped to withstand the scale and intensity of storm events affecting the region. The roadway has sharp curves and severe structural vulnerabilities to flooding from Buffalo Creek. The Corridor also has two critically at-risk bridges (Bridges 040055 and 040049) over Buffalo Creek which were built in 1949 and are now rated as in poor condition. The proposed Project will reconstruct the roadway into a storm-resilient corridor engineered to withstand severe inland precipitation and safeguard mountainous supply lines. This will include widening the road, improving the horizontal alignment, constructing systemic drainage improvements, and adding 5-foot paved shoulders along with a modern roundabout. It will also replace Bridges 040055 and 040049 over Buffalo Creek and make numerous rock cuts with soil nail walls that will stabilize the mountains above the road. The Project is at 75% design, with a Type III NEPA Categorical Exclusion (CE) completed. The right-of-way (ROW) acquisition process is underway. The Project is anticipated to be let in August 2028, with construction beginning in September 2028.
10	**Is the proposed project prioritized on a RIP developed in accordance with 23 U.S.C. § 176(e)?**	☒ Yes ☐ No The Project is prioritized in North Carolina Department of Transportation's RIP. It is included in the priority list as object ID #s 3882 and 3883 and can be found here.
11	**Has a RIP been incorporated into an applicable State DOT or MPO long range transportation plan?**	☐ Yes ☒ No .

II. Budget and Funding

1	**PROTECT Competitive Grant Program Request Amount**	$60,000,000
2	**Other Federal Funding**	Estimated total of other Federal funding, excluding PROTECT Competitive Grant Program requested funding, in year-of-expenditure dollars: $10,189,126 Other Federal programs and estimated amounts: Program: BGLT5 Amount: $10,189,126
3	**Non-Federal funding**	Source: State Highway Trust Fund Amount: $11,510,299
4	**Future Eligible Project Cost**	$81,689,425
5	**Previously incurred project costs (if applicable)**	Amount: $6,527,700
6	**Total Project Cost**	$104,933,348
7	**Grant Funds, Sources and Uses of Project Funds (Detailed Budget)**	Activity: Prior Expenditures (PE, ROW, Utilities) Cost: $6,527,700 Prior Activity: PE Cost: $5,243,923 Partial Prior Activity: ROW Cost: $16,300,000 Partial Prior Activity: Utilities Cost: $1,700,000 Activity: Mobilization and Site Prep Cost: $22,530,346 Activity: Roadway Construction Cost: $24,983,325 Activity: Structures Cost: $9,406,815 Activity: Miscellaneous Cost: $9,781,881 Activity: Engineering and Contingency Cost: $11,009,539 Activity: Grant Administration Cost: $3,977,519 ☒ A detailed budget is attached separately. The file is named: NCDOT11-2026 PROTECT Appendix C NC 88 Budget Narrative
8	**Does the project involve the construction of new capacity?**	☐ Yes ☒ No
9	**Does the project involve development phase activities, including planning, feasibility analysis, revenue forecasting, environmental review, preliminary engineering**	☐ Yes ☒ No

	and design work, and other preconstruction activities described under 23 U.S.C. § 176(d)(5)(F)(I)?	
10	**Has the applicant submitted previous applications for Federal funding for this project?**	☐ Yes ☒ No

III. Merit Criteria

Criterion #1: Vulnerability and Risk

A. *The application describes the relevant current or future weather events, natural disasters, or changing conditions to which the project area is exposed and that the project will address.*

The NC 88 Mountain Corridor is located in an extremely flood-prone area of the Appalachian high country in North Carolina. Sandwiched between Buffalo Creek and the Blue Ridge Mountains, the roadway is vulnerable to flooding from heavy rainfall events, which are increasingly frequent and disruptive in terms of their impact. As noted previously, Ashe County has experienced at least 27 flood events and 22 heavy rain events over the past decade (2016 to 2026). The most significant of these events occurred in September 2024, when Hurricane Helene dumped an excessive amount of rain on western North Carolina, including Ashe County. Runoff from continued heavy rain that day resulted in numerous roads becoming flooded and impassable across Ashe County. Buffalo Creek flooded, covering NC 88 with several inches of flowing water. The resulting flooding caused an estimated property damage of $116.6 million in Ashe County, with one fatality reported.[5]

Figure 2: FEMA Flood Zones in Project Area



Source: FEMA National Flood Hazard Layer (NFHL) Viewer

As shown in Figure 2, large sections of the NC 88 roadway between Warrensville and Smethport are in a FEMA Flood Hazard Zone AE, indicating there is at least a 1% chance of

[5] National Centers for Environmental Information. National Oceanic and Atmospheric Administration (NOAA)

flooding annually. NC 88 runs alongside Buffalo Creek, which makes travel along this critical corridor vulnerable to flooding until the infrastructure has been reconstructed to withstand heavy rainfall events.

B. *The application describes how the project addresses each element, as applicable, of vulnerability-exposure, sensitivity, and adaptive capacity.*

The Project will address the three components of vulnerability for the NC 88 corridor as noted in the Resilience Improvement Plan: exposure, sensitivity[6] and adaptive capacity.[7]

The exposure of NC 88 is determined by the degree to which it is affected during flood events. To address this element, corridor-wide drainage improvements including upgraded culverts and stormwater conveyance systems, will enhance stormwater collection and conveyance, reducing roadway flooding, erosion, pavement damage, and localized drainage failures. These improvements will strengthen the roadway's ability to withstand severe precipitation events.

The Project addresses the sensitivity of the corridor by improving the roadway's ability to cope with heavy rainfall events. This includes enhancing the safety of NC 88 for travelers by widening and adding paved shoulders (the typical section for the Project includes two undivided 12-foot travel lanes with five to eight-foot paved shoulders) and adding retaining walls, which will improve visibility and reduce the potential (i.e. exposure) for collisions.

Finally, by replacing Bridges 040049 and 040055, the Project enhances the adaptive capacity of the corridor, by addressing the two most vulnerable points of failure. Both of these bridges were rated as in poor condition according to the National Bridge Inventory.[8] Inspections for both bridges noted significant corrosion, cracks, exposed rebar, delamination, spalling, and clogging of deck drains (see Figure 3). Replacing these bridges will ensure the safety and mobility of roadway users on the primary route servicing northwest Ashe County. In a no-build scenario, failure of either of these bridges would cause substantial disruptions to county operations.

Figure 3: Spall/Delamination (Bridge 040055) and Exposed Rebar (Bridge 040049)



Source: NCDOT Structure Safety Inspection Reports, May 2026

[6] RIP ranks NC 88 for Flood Exposure and Sensitivity Indices as 1. Others include Criticality 2, and Priority 4.
[7] NC 88 priority scores for flood exposure and sensitivity are 1, criticality 2, and priority 4.
[8] Federal Highway Administration (FHWA) LTBP Infobridge Data

C. *The application demonstrates that there is a high risk to the transportation asset or system from current or future weather events, natural disasters, or changing conditions (risk is a function of the likelihood of negative impact and the consequence should the impact occur).*

There is a high risk to the safety and mobility of travelers using the NC 88 corridor because of the increasing likelihood and intensity of storm events in the area. The decade from 1996 to 2006 saw 21 flood/heavy rain events in Ashe County over 10 years. This almost doubled between 2006 and 2016, with 40 flood/heavy rain events recorded. In the most recent decade, between 2016 and 2026, this has risen again, as Ashe County experienced 49 flood/heavy rain events. The risk of further flood events affecting NC 88 is additionally highlighted by FEMA's flood map. As shown in Figure 2, large sections of the NC 88 roadway between Warrensville and Smethport are in a FEMA Flood Hazard Zone AE, indicating there is at least a 1% chance of flooding annually.

The consequences of future flood events will be significant. The current infrastructure along the NC 88 corridor is not equipped to handle such heavy rainfall events, and the roadway's tight curves increase the risk of poor visibility and collisions. In addition, Bridges 040055 and 040049 will not be in adequate condition to handle future heavy rainfall events. Both bridges are currently rated as in poor condition (4) for all structural elements (deck, substructure, superstructure). By 2028, the mean Infobridge condition forecast projects all bridge elements for Bridge 040055 to be in "serious condition" (3), meaning local failure is a real possibility.[9] The superstructure for Bridge 040049 is also expected to be in serious condition by 2027 at the latest. If the NC 88 infrastructure is left unaddressed, the high likelihood and significant impact of future flood events will cause long-lasting disruption to local communities and families in northwest Ashe County who rely on this primary corridor for access to their daily destinations.

Criterion #2: Criticality to American Families and Communities

A. The application demonstrates that the project is critical to support continued operation or rapid recovery of crucial local, regional, or national surface transportation assets and facilities that serve families and communities

NC 88 is a critical regional connector for American families and communities traveling to homes, schools, hospitals and businesses across the region. In terms of access to services and employment, the corridor connects the northwest portion of Ashe County with US 221, which enables residents to access the larger population centers of Jefferson and West Jefferson. These towns are home to critical community services and business destinations. For example, as the county seat, Jefferson is where government services, industrial development and other economic drivers are located. The adjacent city of West Jefferson offers a vibrant arts and retail downtown area.

The NC 88 corridor is critical for access to education. In the Ashe County School District, students attending the Blue Ridge Elementary (348 students) and Ashe County Middle School

[9] Federal Highway Administration (FHWA) LTBP Infobridge Data

(401 students) in Warrenville will graduate to taking a school bus along NC 88 to attend Ashe County High School or Ashe Early College, both located in West Jefferson.
The Project Corridor also serves as a primary connector to hospitals and medical services for Northern Ashe County. According to the Ashe Memorial Hospital Community Health Needs Assessment (2023),[10] all but one of the hospital medical facilities, including the emergency room, are in the Jefferson/West Jefferson valley.

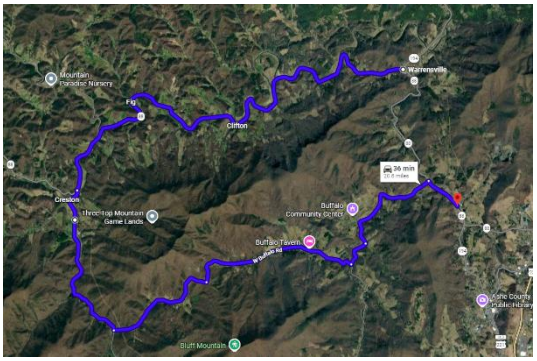
B. The application demonstrates the project would be timely to address transportation infrastructure risks to the community and that consequences are severe if resilience improvements are not made in the near term.

The high risk to the safety and mobility of travelers using the NC 88 corridor is underlined by the increasing likelihood, intensity and potential disruption of storm events in the area. In the most recent decade, between 2016 and 2026, Ashe County has experienced 49 flood/heavy rain events. Floodplain Zones A, AE, AE Floodway, AH, AO, A99, & V are present throughout the project area. The need to mitigate against future flooding risks is therefore critical and urgent to the community.

However, the current infrastructure along the NC 88 corridor is not equipped to handle future heavy rainfall events. The tight curves increase risk of poor visibility and collisions, while Bridges 040055 and 040049 are currently in poor condition (4) for all structural elements (deck, substructure, superstructure). By 2028, the mean Infobridge condition forecast projects all bridge elements for Bridge 040055 to be in "serious condition" (3), meaning local failure is a real possibility.[11] The superstructure for Bridge 040049 is also expected to be in serious condition by 2027 at the latest.

If the infrastructure along NC 88 is left unaddressed, there will be severe impacts to local communities and families in northwest Ashe County who rely on this major traffic artery. These consequences were highlighted in the aftermath of Hurricane Helene, which changed communities and damaged the roads that connected them. The failure of the roadway would have substantial impacts, requiring a 30-minute detour to travel between Warrensville and Smethport if any section of the roadway is closed (see Figure 4).

Figure 4: Detour if NC 88 closed



The Project corridor carries 8,800 vehicles every day. As such, based on this estimated detour, the closure of NC 88 would generate 4,400 additional vehicle hours traveled (VHT) and 152,240 vehicle miles traveled (VMT) every day. In time savings alone, the implementation of the project is estimated to generate over $23 million of travel time benefits each year (in 2024 dollars). Similarly, annual vehicle operating cost savings have been estimated at over $31.1 million, in 2024 dollars.

[10] Ashe Memorial Hospital, Community Health Needs Assessment, 2023, https://www.ashememorial.org/docs/Ashe_Memorial_Hosptial_2023_CHNA_v3_voice.pdf
[11] Federal Highway Administration (FHWA) LTBP Infobridge Data

C. *The application demonstrates the project is critical to supporting community functions (such as economic activities or emergency operations during evacuations).*

Economic Activities

According to the Ashe County Economic Development Office,[12] the economy is thriving with a growing and diverse industrial base focusing on machined and rotation parts for aircraft at GE Aerospace, electrical and electronic products at Leviton Manufacturing, and custom ambulance manufacturing at American Emergency Vehicles.

In addition, Ashe County is one of the largest producers of Christmas trees in the nation. County farmers are also known for cattle, pumpkins, strawberries and other crops. The local food movement has grown over the last decade resulting in a thriving farm-to-table movement. Finally, tourism continues to be a growing industry as visitors enjoy outdoor activities in the nearby mountains. According to recently released state data,[13] tourism spending brings $128.8 million to the Ashe County economy - a 4.0% increase over the previous year. Tourism also supports 598 local jobs. By avoiding a 30 minutes detour via 3 Top Road, the Project will ensure these industries continue to thrive and prosper by providing reliable transportation through the mountains connecting the rural communities to the job opportunities in commercial hub of the county seat.

Emergency Operations

NC88 Corridor serves as a primary connector for emergency services for Northern Ashe County. According to the Ashe Memorial Hospital Community Health Needs Assessment (2023),[14] all but one of the hospital medical facilities, including the emergency room, are in the Jefferson/West Jefferson Valley. Consequently, NC88 is a primary route for ambulances responding to calls from the northern part of the county.

NC 88 also connects travelers to the Ashe High School, which was used as a public shelter and distribution center for food and supplies during Hurricane Helene. The other local schools provided additional support and resources to affected residents.[15] The use of Ashe County schools as shelters was anticipated in the 2023 Ashe County Emergency Operations Plan.[16] In a rural mountainous area where alternate routes are limited, the loss or degradation of a primary transportation corridor can substantially increase emergency response times and create additional operational risks for both responders and the public.

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[12] Ashe County Economic Development, https://growashe.com/

[13] Visit North Carolina Economic Impact of Travel, Visitor Spending by County -2025, Ashe County, https://www.visitnc.com/sites/default/files/2026-08/2025%20County%20Level%20Visitor%20Expenditures.pdf

[14] Ashe Memorial Hospital, Community Health Needs Assessment, 2023, https://www.ashememorial.org/docs/Ashe_Memorial_Hosptial_2023_CHNA_v3_voice.pdf

[15] After 33 days, Ashe County students return to school, published October 30, 2024, EdNC website, https://www.ednc.org/after-33-days-ashe-county-students-return-to-school/

[16] Ashe County Emergency Operations Plan 2023, Ashe County Emergency Management, https://nmcdn.io/e186d21f8c7946a19faed23c3da2f0da/9daed2ecce2a4df2845caa12db947e3d/files/departments/emergency-management/Ashe-County-EOP--final-revision.pdf

Criterion #3: Design Elements, including Addressing Core Infrastructure

A. *The application identifies the anticipated service life of the facility or asset and identifies design element(s) to address current and future vulnerabilities over that service life.*

The Project would provide a safe, reliable, and resilient transportation connection along the 3.76-mile section of N.C. 88 between Smethport and Warrensville throughout its anticipated 75-year service life. The improvements are designed to address existing vulnerabilities while preparing the corridor for increasingly severe weather conditions.

To reduce flood-related risks, the Project will replace two aging bridges over Buffalo Creek, which will eliminate critical infrastructure deficiencies and reduce the likelihood of disruptions caused by flooding or structural deterioration. The Project also includes corridor-wide drainage improvements, including upgraded culverts and stormwater conveyance systems, to better manage runoff during heavy rainfall events and reduce roadway flooding, erosion, and infrastructure damage. The Project also addresses slope instability and rockfall hazards through rock-cut modifications, soil nail walls, and other stabilization measures informed by detailed geotechnical investigations.

B. *The application documents the source of relevant evidence-based data, projections, and scenarios used or proposed for use as the basis for resilience design element(s).*

The Project, STIP Project R-5832, is included in NCDOT's Resilience Improvement Plan (RIP) and received a priority score of 4 as a highway resilience project. Developed by NCDOT, the RIP is a comprehensive, data-driven assessment of transportation infrastructure across the state that evaluates assets based on hazard exposure, asset sensitivity, and transportation system criticality to identify where resilience investments are most needed. Using a GIS-based methodology, NCDOT overlaid transportation assets, including roadways, bridges, and culverts, with hazard datasets to identify areas of elevated vulnerability, including the Project area. Data sources for the analysis include the NCDOT Road Inundation Tool (RIT), the Geotechnical Asset Management (GAM) database, FEMA datasets, National Bridge Inventory data, and additional state and federal transportation and hazard information.

For inland flooding, the RIP relies on flood-inundation modeling from the NCDOT RIT, which incorporates FEMA flood studies and evaluates exposure across multiple flood recurrence intervals ranging from 10-year to 500-year events. The analysis considers both the likelihood of flooding and the expected depth of inundation. In western North Carolina, where the project is located, geotechnical hazards are a significant concern. Accordingly, the analysis uses information from the GAM database to identify locations vulnerable to landslides, rockfalls, rockslides, and embankment failures. This assessment incorporates factors such as failure potential, maintenance history, precipitation patterns, groundwater conditions, and the forecast consequences of asset failure.

Furthermore, the RIP considers the importance of transportation assets to the broader network and the communities they serve through measures of roadway criticality, socioeconomic conditions, and health and safety. The Health and Safety Index specifically evaluates access to

hospitals, emergency shelters, and utilities, linking transportation resilience to essential community services. Supporting this analysis, the 2023 Ashe Memorial Hospital Community Health Needs Assessment (CHNA) identifies approximately 1,700 residents in Warrensville and notes that 35% of Ashe County residents are age 60 or older.

C. *The application describes how the design elements will reduce current and future vulnerabilities and risks to surface transportation infrastructure*.

The Project would replace two aging Buffalo Creek bridges constructed in 1949 that are currently rated in poor condition. Modern bridge structures and associated hydraulic improvements will reduce structural vulnerabilities, improve flood performance, and lower the risk of weather-related deterioration, maintenance needs, and transportation disruptions.

Corridor-wide drainage improvements will enhance stormwater collection and conveyance, reducing roadway flooding, erosion, pavement damage, and localized drainage failures. These improvements complement the Buffalo Creek bridge replacements by addressing flood-related vulnerabilities throughout the corridor and strengthening the roadway's ability to withstand severe precipitation events.

The mountainous terrain along NC 88 is susceptible to rockfalls, erosion, and slope failures, particularly during heavy rainfall. The Project will construct rock cuts and soil nail walls to stabilize slopes, reducing the risk of debris reaching the roadway and minimizing potential roadway closures caused by geotechnical hazards.

Roadway realignment, improved horizontal geometry, and 5-foot paved shoulders would enhance safety, operational reliability, and emergency access. The added shoulders would provide space for disabled vehicles, maintenance activities, and emergency response, improving corridor functionality during disruptive events.

D. The application describes how the project will improve the condition and safety of the surface transportation infrastructure by reducing current and future vulnerabilities.

The Project would improve the condition, safety, and reliability of N.C. 88 by addressing aging infrastructure, flooding, drainage issues, and slope instability. These improvements would reduce disruptions, strengthen resilience to future hazards, and provide a safer, more dependable connection for the communities that rely on NC 88.

E. The application describes how the funded design elements will be maintained for the anticipated life of the facility, identifies which entity will be responsible for maintaining the project, and anticipated funding sources for future maintenance.

After construction, the Project will be maintained by NCDOT throughout its service life. As part of the state highway system, NC 88 and all other Project assets, including bridges, pavement, drainage infrastructure, slope stabilization measures, signage, and pavement markings, will be incorporated into NCDOT's established inspection, asset management, and maintenance programs. The Division of Highways and Structures Management Unit will oversee ongoing inspection, preservation, and maintenance activities. Future maintenance will

be funded through NCDOT's existing state highway maintenance programs, including the Highway Fund, with additional support from applicable State and federal bridge preservation programs.

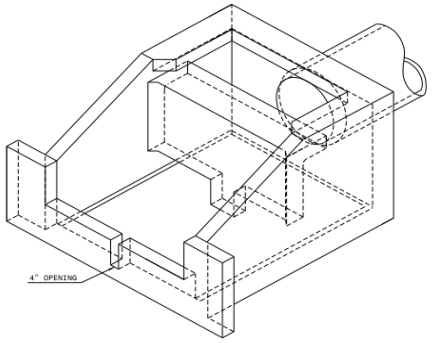
F. In support of reinvesting in the American family: the project improves wayfinding and considers the accessibility of the transportation system for families and persons with disabilities.

The Project improves accessibility, wayfinding, and travel predictability for families, caregivers, older adults, persons with disabilities, and other roadway users. Improved roadway geometry, a modern roundabout, five-foot paved shoulders, updated signage, and enhanced pavement markings will make the corridor easier to navigate and support safer, more reliable access to healthcare, schools, businesses, and other essential community destinations. These improvements are particularly important in Ashe County, where 35 percent of residents are age 60 or older, and dependable transportation is critical for accessing healthcare and daily services. Ashe Memorial Hospital is a Critical Access Hospital with a 24-hour emergency room serving Ashe County and surrounding communities, and reliable transportation is particularly important for residents with ongoing healthcare needs.

Criterion #4: Innovation

B. The project employs innovative or emerging technologies or techniques that will be used to mitigate risk of structural failure or increase reliability of the surface transportation assets throughout its anticipated service life, reinforcing the Nation's leadership in technology and innovation.

Figure 5: Passive Energy Dissipator



The Project plans to utilize prefabricated passive energy dissipators to slow the flow of water off the mountain before it enters Buffalo Creek. Passive energy dissipators are an innovative technique, applying hydraulic design to reduce structural risk and thereby improving long-term reliability. The device is designed to reduce the velocity and turbidity of stormwater flows before they enter the waterway, in this case Buffalo Creek. The pipe brings the water into the prefabricated box, allowing the water's energy to dissipate, reducing its impact before entering the creek. Without the energy dissipator, scour forces would impact foundations, leading to erosion and potentially structural failure during high-flow events. Avoiding these risks increases the reliability of the newly-constructed roadway, and protects aquatic environments from further impact.

NCDOT plans to install 24 such dissipators along Buffalo Creek and 2 along Little Buffalo Creek in the corridor. The modular design speeds installation and minimizes construction in the stream environment, reducing negative environmental impacts. The predictability of the water velocity reduces the maintenance costs of both the waterway and the road corridor. By bringing standardized resilience features like energy dissipators into the Project, NCDOT

advances national leadership in innovation and best practices, demonstrating how prefabricated devices can extend the service life of infrastructure.

In addition to the energy dissipators, NCDOT will install a flood-monitoring gauge on Buffalo Creek that will feed real-time data into the agency's Flood Inundation Mapping and Alert Network for Transportation (FIMAN-T) program. Integrating the gauge with FIMAN-T enables staff to continuously track water levels and assess potential roadway impacts, improving the ability to protect the traveling public. The system converts raw water-level measurements into actionable tools for flood prediction, mapping, and alerting, allowing officials and the public to receive earlier warnings of rising waters and enabling emergency operations to shift from reactive response to proactive, data-driven decision-making.

C. The project employs innovative project delivery methods.

The Project incorporates innovative practices and technologies that enhance project delivery, construction efficiency, and transportation system resilience. Delivered through NCDOT's Resurfacing, Restoration, and Rehabilitation (3R) program, the Project utilizes a proactive asset-management approach that preserves and extends the service life of existing infrastructure through targeted rehabilitation and reconstruction rather than full facility replacement. This approach maximizes the value of prior transportation investments, minimizes construction impacts, reduces lifecycle costs, and provides a cost-effective method of addressing documented safety and operational deficiencies.

To improve project delivery and construction efficiency, the Project will incorporate Subsurface Utility Engineering (SUE) during design. SUE is an FHWA Every Day Counts (EDC) innovation that uses advanced utility investigation and engineering practices to accurately identify and characterize underground infrastructure before construction begins. By reducing unknown utility conflicts, improving utility-location accuracy, and supporting better design decisions, SUE minimizes change orders, reduces construction delays, lowers project risk, and improves cost and schedule certainty.

In addition, the Project will be managed through NCDOT's Project Delivery Network (PDN), a digital project-management platform that integrates design, environmental review, utility coordination, right-of-way acquisition, and construction activities. PDN provides centralized project information, standardized workflows, and milestone-based coordination that promote collaboration among project teams and stakeholders. This integrated approach supports early issue resolution, improves project transparency, reduces schedule risk, and enhances overall project delivery efficiency.

IV. Project Readiness

Readiness: Technical Assessment

A. The applicant has the resources to deliver the project.

NCDOT has fully demonstrated its ability and readiness to deliver the Project. The cost estimate was developed in 2024 by NCDOT's engineering consultant using unit prices and design assumptions specific to the Project area and has been escalated by 4% per year to the

midpoint of the estimated spending year. NCDOT has already advanced the Project through design and into Right of Way acquisition using state funds, demonstrating both its commitment and financial capacity to complete the Project.

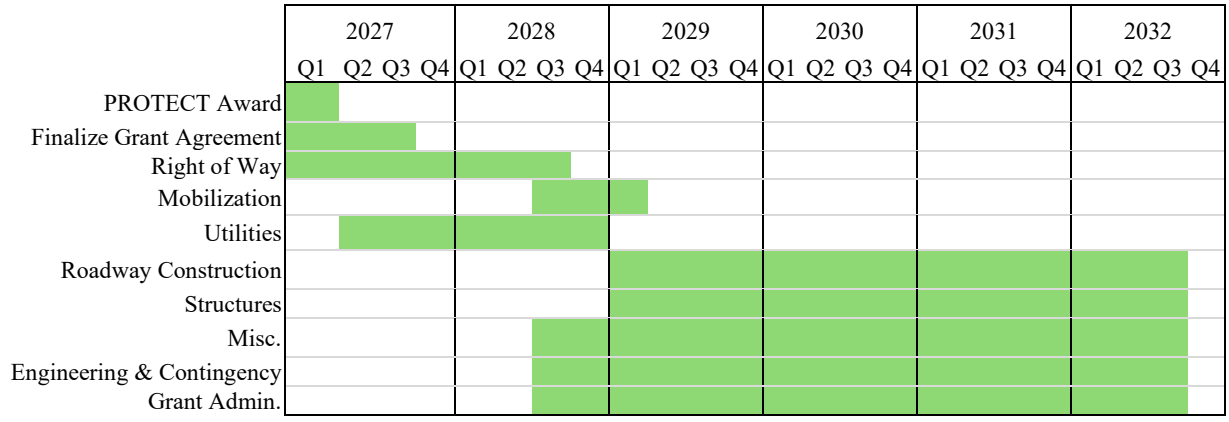
The non-federal match funding for construction will come from the state's Highway Trust Fund; the match funds are secured, available and eligible for all components and completion of the Project. Each task includes an appropriate contingency, and NCDOT will cover any cost overruns to ensure uninterrupted progress. With dedicated funding, an established delivery pathway, and a proven track record of advancing this Project to date, NCDOT is prepared to execute all remaining components through completion.

B. The project will comply with all applicable Federal requirements.

The Project will comply with all applicable Federal requirements, including, but not limited to, Buy America provisions, Americans with Disabilities Act (ADA) Regulations, Civil Rights requirements, Federal Motor Vehicle Safety Standards (FMVSS), Clean Air Act, the Federal Motor Carrier Safety Regulations (FMCSR), and criteria under 23 USC 217(e), if applicable.

C. The applicant demonstrates a commitment for timely project delivery as demonstrated by the schedule information in the application, including meeting PROTECT Competitive Grant Program obligation deadlines.

NCDOT demonstrates a clear commitment to timely project delivery through a schedule that aligns with all PROTECT Competitive Grant Program obligation requirements. The Project schedule assumes a February 2027 award and finalization of the grant agreement by August 2027, ensuring the Project is positioned to obligate funds well in advance of the FY26 deadline of September 30, 2029. The schedule further reflects prudent planning by initiating mobilization in September 2028, providing additional flexibility for agreement execution, early coordination, finalization of right of way acquisition, and Federal review. This structure underscores NCDOT's readiness, capacity, and disciplined approach to meeting all required milestones and advancing the Project efficiently into construction.



D. The applicant demonstrates the technical feasibility of the project.

The Project is informed by a significant level of preliminary planning, engineering analysis, and corridor-specific research by NCDOT and its consultants. Over the past few years, as the project advanced through planning and design, NCDOT evaluated roadway geometry, soil and bridge conditions, crash history, and drainage considerations, resulting in design plans for curve realignments, intersection improvements, bridge replacement, and improved and more resilient drainage infrastructure.

In addition, NCDOT has advanced multiple related projects in the corridor, including earlier drainage studies, structure inspections, and design development for adjacent segments. These efforts produced design drawings, environmental documentation, and erosion and sediment control plans that directly inform the current Project. Lessons learned from these prior studies—particularly regarding flood behavior, soil conditions, and constructability constraints—have been incorporated into the proposed design. The Project is at 75% design, with Type III NEPA Categorical Exclusion (CE) completed. The right-of-way (ROW) acquisition process is underway.

NCDOT has the legal authority, financial capacity, and technical expertise to deliver the Project. The Department has a long history of successfully completing major transportation infrastructure projects with Federal funding, consistently meeting schedule, budget, and performance expectations. With established engineering foundations, proven delivery capability, and a clear path to final design and construction, the Project is technically feasible and ready for advancement.

Readiness: Financial Completeness Assessment

A. The application demonstrates the costs in the estimate are reasonable and necessary to complete the project.

The Project cost estimate has been developed using established planning-level cost estimation methodologies and reflects the scope, complexity, and anticipated requirements of the project. Cost estimates are based on recent comparable projects, current market conditions, available data, and professional engineering and planning judgment. The project budget includes all activities necessary to successfully complete the project, including project management, right of way acquisition, utility relocations, construction and implementation, and project monitoring. NCDOT has carefully reviewed all cost assumptions to ensure that project expenses are both reasonable and directly related to achieving the project's objectives. The budget reflects a prudent use of federal funds while ensuring sufficient resources are available to deliver all project components as proposed. A 4% annual cost escalation was assumed to bring the cost estimate to year of expenditure dollars, and contingency is also included in the project budget (see Detailed Budget attachment for more information).

B. *The application includes a plan to address potential cost overruns.*

NCDOT has established procedures for monitoring expenditures, managing risks, and addressing unforeseen conditions that may affect project costs. Throughout project implementation, costs will be tracked against established budgets and milestones through

regular financial and project management reviews. Should cost increases occur due to factors such as market fluctuations, unforeseen site conditions, or scope refinements, NCDOT will evaluate value-engineering opportunities, phase project components if appropriate, and coordinate with project partners to identify additional funding sources. NCDOT and its partners have a demonstrated history of managing federally funded projects and maintaining fiscal accountability through proactive risk management and financial oversight. NCDOT will be responsible for covering cost overruns.

C. *The application demonstrates reasonable availability of all funding needed to complete the project with an award.*

NCDOT has identified the non-federal funding sources necessary to complete the project and is committed to providing all required matching funds. Federal and non-federal funding commitments are supported by agency budgets, planning documents, partner commitments, and applicable programming processes. The proposed funding package provides a clear and achievable strategy for project completion. In addition to the requested PROTECT funds, state resources have been identified to support project delivery. NCDOT will ensure all necessary funds remain available throughout project development and implementation, minimizing the risk of project delays or funding shortfalls.

D. *For construction projects, the proposal includes information on how future operation, maintenance and preservation costs will be funded.*

NCDOT is committed to the long-term operation, maintenance, and preservation of the proposed improvements following project implementation. The project is already programmed in the North Carolina State Transportation Improvement Program (STIP), demonstrating NCDOT's commitment to advancing and delivering the project. Ongoing operations and maintenance costs will be incorporated into existing agency operating budgets and capital maintenance programs and supported through established local, state, regional, and federal transportation funding sources.

The project will not create a significant financial burden beyond NCDOT's capacity. Routine maintenance, asset management, and preservation activities will be conducted in accordance with established agency standards and maintenance schedules to ensure the continued safety, reliability, and performance of the transportation network throughout the project. This commitment protects the federal investment and ensures the project will continue delivering long-term mobility, safety, and economic benefits to military personnel, residents, freight operators, and surrounding communities.

E. *For construction projects, the budget must ensure that no more than 10 percent of the grant is spent on development phase activities (23 U.S.C. § 176(d)(5)(F)(i)).*

The full budget for the Project (100%) is allocated to construction phase activities.

Readiness: Permitting Risk Assessment

A. *The National Environment Policy Act (NEPA)* review is complete, or the application demonstrates NEPA will be complete in time to meet the project schedule.*

A Type III Categorical Exclusion has been obtained for the Project, and is included as an attachment to this PROTECT grant application in Appendix D.

B. *All necessary permits have been obtained, or the application demonstrates permits and approvals will be obtained in time to meet the project schedule.*

NCDOT has evaluated the anticipated permitting and approval requirements associated with the Project and has incorporated these activities into the Project schedule. Preliminary Jurisdictional Determinations (PJD) were submitted to the US Army Corps of Engineers (USACE) on August 23, 2019 and January 12, 2024. It is anticipated that a RGP 50, a Section 401 Water Quality Certification (WQC), and Trout Buffer Variance from the NC Division of Land Resources will be needed for the project. The regulatory permitting agencies hold the final discretion as to what additional permits will be required to authorize project construction. Based on the current scope of work, NCDOT anticipates that all necessary federal, state, and local permits, approvals, and clearances can be obtained within the timeframe needed to support timely project delivery.

NCDOT will work closely with the Federal Highway Administration (FHWA), the US Army Corps of Engineers, local governments, and other relevant stakeholders to ensure that permitting and environmental review activities are initiated early and completed efficiently. Project milestones have been developed to accommodate permitting requirements, and NCDOT has extensive experience coordinating environmental reviews and regulatory approvals for transportation projects. This proactive approach minimizes permitting risk and supports the Project's successful implementation.

C. *Public engagement has occurred or will occur, and any known public controversy has been or will be addressed or mitigated.*

Public and stakeholder engagement is a key component of NCDOT's transportation planning and Project development process, and has established a Statewide Public Involvement Plan (SPIP) to guide the process. The Project has benefited from ongoing coordination with local governments, transportation agencies, community organizations, business stakeholders, and the public through regional planning efforts and project development activities. For example, Start of Study Letters were sent to federal and state resources, regulatory agencies, and local government officials on October 22, 2018. An in-person public meeting was held on March 21, 2023. A total of 134 comments were received through comment forms left at the public meeting, voicemails to the project phone number, and the Project's publicinput.com website.[17]

[17] NCDOT Public Input Website, https://www.publicinput.com/A7120

Due to the public outreach, changes were made to the scope of the Project, as the roundabout at the northern end was eliminated from the preferred alternative.

The Project is consistent with regional transportation plans and local transportation priorities and has been developed through coordination with partner agencies and stakeholders. NCDOT will continue to follow the Statewide Public Involvement Plan process to monitor potential risks throughout Project implementation and maintain open communication with regulatory agencies, Project partners, and affected communities to identify and address issues before they impact the Project schedule. Through proactive Project management, stakeholder engagement, and agency coordination, NCDOT has established a framework for minimizing Project delivery risks and ensuring successful Project advancement.

D. *The application discloses any known and unmitigated issues posing high risk to project delivery. Examples include litigation, known public controversy, or Agency opposition to the project on environmental grounds.*

At this time, no significant known unmitigated issues have been identified. Should concerns arise during project development, NCDOT will work collaboratively with affected stakeholders to identify appropriate mitigation measures and incorporate feedback where feasible. This approach will help build public support, address potential concerns early, and reduce risks to project delivery.

V. Statutory and DOT Selection Priorities

Statutory Selection Priorities
For Resilience Improvement Grants: ☐ The benefits of the eligible activity proposed to be carried out by the eligible entity exceed the costs of the activity (as demonstrated by the economic analysis); and ☐ There is a need to address the vulnerabilities of surface transportation assets of the eligible entity with a high risk of, and impacts associated with, failure due to the impacts of weather events, natural disasters, or changing conditions, such as sea level rise, wildfires, and increased flood risk; or ☒ The eligible activity is included in a RIP as described by 23 U.S.C. 176(e)(2). ☐ None of the above apply to the project.
Statutory Selection Priorities
The NC 88 Mountain Corridor Resilience and Stabilization Project is listed in the North Carolina Department of Transportation Resilience Improvement Plan (Object ID 3882 and 3883).[18]
DOT Selection Priorities
☒ The project supports critical infrastructure for industries of national interest.

[18] NCDOT Resilience Plan. https://www.ncdot.gov/initiatives-policies/Transportation/transportation-resilience/Pages/studies-reports.aspx

☒ The project would contribute to promoting economic prosperity in communities, including rural areas and Tribal communities.
☒ The project prioritizes improvement of the condition and safety of existing transportation infrastructure, particularly infrastructure with high cost of failure, such as bridges with lengthy detours, impacts to critical corridors, or failures that will cause economic disruption.
☒ The project demonstrates an ability to meet PROTECT Competitive Grant Program obligation deadlines.
☐ The project improves access to national security and defense facilities or facilitate movement of military cargo or personnel.
☒ The project will reduce roadway traffic congestion.
☐ The project repurposes existing specialized travel lanes for bicycles, buses, or pedestrians for general purpose use by all motor vehicles, including single-occupant motor vehicles, and the applicant demonstrates the repurposing will meet the PROTECT program purpose, will reduce congestion on the facility, will utilize 40 percent or less of requested PROTECT funds for adding capacity consistent with 23 U.S.C. 176(d)(5)(G)(i)(I), will address safety consistent with the merit criteria described in Section F of the NOFO, and will comply with applicable federal requirements, including the Clean Air Act and criteria under 23 U.S.C. 217(e).
☐ None of the above apply to the project.

DOT Selection Priorities: *Briefly describe below how the project meets the checked DOT priorities.*

The project supports critical infrastructure for industries of national interest.

Improving the NC 88 corridor through curve realignment, flood-risk reduction, and bridge reconstruction would strengthen critical infrastructure for industries of national importance. In Ashe County, NC, the Christmas Tree sector is directly impacted by the inefficiencies, delays, and accessibility challenges created by the poor condition of the Project corridor, and especially the bridges. North Carolina produces over 22% of the real Christmas trees in the United States, and the state's Christmas tree industry is ranked second in the nation. Christmas trees from North Carolina have decorated the White House and the Capitol Building, plus over 1,500 trees were sent to service member families at Fort Bragg, Fort Benning, and MCAS Cherry Point.[19] The industry relies on dependable rural transportation routes to move trees and equipment between farms, markets, and ensure visitors are safely able to access the farms seasonally. Some farms depend on narrow roads with sharp turns, and some bridges are weight-posted, limiting the number of vehicles and the volume of trees that are able to move off the farm. These transportation limitations also cause safety risks to roadway users and can result in delays for shippers and retailers, especially during hazardous weather. Modernizing the corridor enhances freight mobility, reduces weather-related disruptions, and ensures reliable access for agricultural producers to get their products to national markets. By improving the corridor, the Project supports the continuity of the nationally significant Christmas Tree industry, strengthening the area's economy.

[19] North Carolina Christmas Tree Association, 2025 Trees for Troops Sends Over 1,500 Christmas Trees to Service Member Families, https://ncchristmastrees.com/trees-for-troops/

The project would contribute to promoting economic prosperity in communities, including rural areas and Tribal communities.

Ashe County is the largest Christmas tree-producing county in the United States, with about 12,000 acres of trees in production and an estimated 20 million trees harvested annually. This industry is vitally important in the rural economy, supporting over 700 year-round jobs and more than 2,000 seasonal positions.[20] The farms in northern Ashe County rely on the Project bridges and the network of rural roads they connect to move seeds, fertilizer, equipment, and mature trees to markets. The posted and deteriorating bridges pose a barrier to the movement of tractors and machinery, and operators must detour to longer alternate routes that increase costs, reduce efficiency, introduce additional mileage and safety risks, and longer travel times.

Additionally, this part of North Carolina is a nationally-known destination for agritourism - those seeking to cut down their own Christmas trees. The inefficient and unreliable operation of the Project bridges and roadway hinder access for tourists and households in the region who drive to cut their own tree and drive it home. Replacing the Project bridges will reduce the expense accrued by farmers moving goods and equipment while simultaneously facilitating tourists' ability to support the regional economy.

The Project will allow local industries such as Christmas tree farms to conduct their work more efficiently by increasing the reliability and efficiency with which they are able to move large equipment or goods-laden trucks through the region, thereby allowing farmers to be more profitable and supporting rural incomes Because transportation costs are a significant share of the production process, improvements to the transportation system improve farmers' and foresters' bottom line. Replacing the Project bridges will support the Christmas tree farms found in the region, as well as the broader agricultural industry by providing a safer, more reliable network for the agritourism supply chain.

The project prioritizes improvement of the condition and safety of existing transportation infrastructure, particularly infrastructure with high cost of failure, such as bridges with lengthy detours, impacts to critical corridors, or failures that will cause economic disruption.

The primary focus of the Project is to improve the condition and safety of a critical rural corridor whose failure would impose severe detours, isolate communities, and disrupt economic activity. The route is used daily by school buses, commuters, farmers, tourists and other regular travelers moving between more remote areas of Ashe County and the economic and population centers of Jefferson and West Jefferson.

Recent flooding events, and especially Hurricane Helene in September 2024, drove home the importance of the infrastructure and the high cost of failure including damaged bridges, unstable roadways and foundations, and closures due to excessive flooding. Most importantly, first responders recall the importance of the corridor for moving rescue teams and response personnel and supplies in a timely manner. As described by the Director of Ashe County Emergency Management in the aftermath of Hurricane Helene: "*These conditions directly affected all major emergency response disciplines. Law enforcement personnel faced*

[20]Hart-T-Tree Farms, Christmas Trees in Ashe County, https://hartttreefarms.com/blog/blog-post-title-one-t4g67

additional travel time and route restrictions when responding to calls, conducting welfare checks, securing affected areas, and providing assistance to isolated residents. Fire departments experienced increased difficulty reaching structure fires, vehicle incidents, hazardous-materials incidents, and other emergencies with apparatus and personnel. Rescue agencies faced additional challenges when transporting specialized rescue equipment and personnel into areas affected by landslides, flooding, and unstable roadway conditions. EMS personnel faced potentially significant delays in reaching patients and transporting critically ill or injured individuals to definitive medical care." Strengthening this corridor will ensure reliable access for essential services, emergency responders, and safeguard the local economy to continue serving this remote area of the state.

The project demonstrates an ability to meet PROTECT Competitive Grant Program obligation deadlines.

NCDOT demonstrates a clear commitment to timely project delivery through a schedule that aligns with all PROTECT Competitive Grant Program obligation requirements. The Project schedule assumes a February 2027 award and finalization of the grant agreement by August 2027, ensuring the Project is positioned to obligate funds well in advance of the FY26 deadline of September 30, 2029. The schedule further reflects prudent planning by initiating mobilization in September 2028, providing additional flexibility for agreement execution, early coordination, finalization of right of way acquisition, and Federal review. This structure underscores NCDOT's readiness, capacity, and disciplined approach to meeting all required milestones and advancing the Project efficiently into construction.

The project will reduce roadway traffic congestion.

The Project will reduce roadway traffic congestion by reducing the opportunity for roadway failure. The Project corridor carries 8,800 vehicles every day and, as described above, when the road is impassable, the alternative routes can be limited and unreliable and not built to handle the traffic detours in the long-term.

The closure of this section of NC 88, due to bridge failure, flooding, or the failure of other roadway elements, would require a detour of 30 minutes (17.3 miles) via 3 Top Road, Ben Bolen Road, and West Buffalo Road. Based on this estimated detour, the closure of NC 88 would generate 4,400 additional vehicle hours traveled (VHT) and 152,240 vehicle miles traveled (VMT) every day of the closure. The implementation of the project is estimated to generate over $23.0 million of travel time benefits and approximately $8.2 million of congestion savings each year (undiscounted, in 2024 dollars).[21]

VI. Benefit-Cost Analysis

[21] USDOT Benefit-Cost Analysis Guidance (May 2025)

Resilience Improvement Grant 23 U.S.C. § 176(d)(5)(E)(ii)(I)	BCA is required for the project to be prioritized, unless the project is prioritized in a RIP. Please check the appropriate box: ☐ The applicant is not requesting Resilience Improvement Grant funds. ☐ The applicant requests Resilience Improvement Grant Funding, and the project is not prioritized in a RIP. A BCA is attached. ☒ The applicant requests Resilience Improvement Grant funding, and the project is prioritized in a RIP. ☐ The application is from a federally recognized Indian Tribe that is requesting Resilience Improvement Grant funds but is opting to provide raw data with its application to support the need for a project, without additional BCA*. The raw data is attached.

