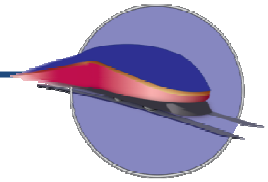
*Corridor Program Name:* NC T2.2 - SEHSR - Piedmont 4th Frequency *Date of Submission:* 10/02/09 *Version Number:* C

## High-Speed Intercity Passenger Rail (HSIPR) Program



# Track 2–Corridor Programs: Application Form

Welcome to the Application Form for Track 2–Corridor Programs of the Federal Railroad Administration's High-Speed Intercity Passenger Rail (HSIPR) Program.

This form will provide information on a cohesive set of projects—representing a phase, geographic segment, or other logical grouping—that furthers a particular corridor service.

**Definition: For purposes of this application, a "Corridor Program" is "a group of projects that collectively advance the entirety, or a 'phase' or 'geographic section,' of a corridor service development plan."** *(Guidance, 74 Fed, Reg. 29904, footnote 4).* **A Corridor Program must have independent utility and measurable public benefits.**

In addition to this application form and required supporting materials, applicants are required to submit a Corridor Service Overview.

An applicant may choose to represent its vision for the entire, fully-developed corridor service in one application or in multiple applications, provided that the set of improvements contained in each application submitted has independent utility and measurable public benefits. The same Service Development Plan may be submitted for multiple Track 2 Applications. Each Track 2 application will be evaluated independently with respect to related applications. Furthermore, FRA will make its evaluations and selections for Track 2 funding based on an entire application rather than on its component projects considered individually.

We appreciate your interest in the HSIPR Program and look forward to reviewing your entire application. If you have questions about the HSIPR program or the Application Form and Supporting Materials for Track 2, please contact us at HSIPR@dot.gov.

Instructions for the Track 2 Application Form:

- Please complete the HSIPR Application electronically. See Section G of this document for a complete list of the required application materials.
- In the space provided at the top of each section, please indicate the Corridor Program name, date of submission (mm/dd/yyyy), and an application version number assigned by the applicant. The Corridor Program name must be identical to the name listed in the Corridor Service Overview Master List of Related Applications. Consisting of less than 40 characters, the Corridor Program name must consist of the following elements, each separated by a hyphen: (1) the State abbreviation of the State submitting this application; (2) the route or corridor name that is the subject of the related Corridor Service Overview; and (3) a descriptor that will concisely identify the Corridor Program's focus (e.g., HI-Fast Corridor-Main Stem).
- Section B, Question 10 requires a distinct name for each project under this Corridor Program. Please the following the naming convention: (1) the State abbreviation; (2) the route or

corridor name that forms part of the Corridor Program name; and (3) a project descriptor that will concisely identify the project's focus (e.g., HI-Fast Corridor-Wide River Bridge). For projects previously submitted under another application, please use the **same name** previously used on the project application.

- For each question, enter the appropriate information in the designated gray box. If a question is not applicable to your Track 2 Corridor Program, please indicate "N/A."
- Narrative questions should be answered within the limitations indicated.
- Applicants must up load this completed and all other application materials to www.GrantSolutions.gov by October 2, 2009 at 11:59 pm EDT.
- Fiscal Year (FY) refers to the Federal Government's fiscal year (Oct. 1- Sept. 30).

*Corridor Program Name:* NC T2.2 - SEHSR - Piedmont 4th Frequency *Date of Submission:* 10/02/09 *Version Number:* C

# A. Point of Contact and Application Information

| | | | | |
|---|---|---|---|---|
| **(1) Application Point of Contact (POC) Name:**<br>**Patrick Simmons** | | **POC Title:**<br>**Director, Rail Division, NCDOT** | | |
| **Applicant State Agency or Organization Name:**<br>**NCDOT** | | | | |
| **Street Address:**<br>**1 South Wilmington Street** | **City:**<br>**Raleigh** | **State:**<br>**North Carolina** | **Zip Code:**<br>**27601** | **Telephone Number:**<br>**(919) 733-7245 ext. 263** |
| **Email: pbsimmons@ncdot.gov** | | **Fax: (919) 715-6580** | | |

# B. Corridor Program Summary

**(1) Corridor Program Name**: NC T2.2 - SEHSR - Piedmont 4th Frequency

**(2) What are the anticipated start and end dates for the Corridor Program?** *(mm/yyyy)*
**Start Date:** Upon notice to proceed **End Date:** 09/2013

**(3) Total Cost of the Corridor Program:** (Year of Expenditure (YOE) Dollars*) $ 510,265,722

**Of the total cost above,, how much would come from the FRA HSIPR Program:** (YOE Dollars**) $ 473,752,458

**Indicate percentage of total cost to be covered by matching funds:** 7.2 %

**Please indicate the source(s) for matching funds:** Fed, state, local, private (See Sect. F)

***** Year-of-Expenditure (YOE) dollars are inflated from the base year. Applicants should include their proposed inflation assumptions (and methodology, if applicable) in the supporting documentation.
** This is the amount for which the Applicant is applying.

**(4) Corridor Program Narrative.** *Please limit response to 12,000 characters.*

Describe the main features and characteristics of the Corridor Program, including a description of:

- The location(s) of the Corridor Program's component projects including name of rail line(s), State(s), and relevant jurisdiction(s) (include a map in supporting documentation).
- How this Corridor Program fits into the service development plan including long-range system expansions and full realization of service benefits.
- Substantive activities of the Corridor Program (e.g., specific improvements intended).
- Service(s) that would benefit from the Corridor Program, the stations that would be served, and the State(s) where the service operates.
- Anticipated service design of the corridor or route with specific attention to any important changes that the Corridor Program would bring to the fleet plan, schedules, classes of service, fare policies, service quality standards, train and station amenities, etc.
- How the Corridor Program was identified through a planning process and how the Corridor Program is consistent with an overall plan for developing High-Speed Rail/Intercity Passenger Rail service, such as State rail plans or plans of local/regional MPOs.
- How the Corridor Program will fulfill a specific purpose and need in a cost-effective manner.
- The Corridor Program's independent utility.
- Any use of new or innovative technologies.
- Any use of railroad assets or rights-of-way, and potential use of public lands and property.
- Other rail services, such as commuter rail and freight rail that will make use of, or otherwise be affected by, the Corridor Program.
- Any PE/NEPA activities to be undertaken as part of the Corridor Program, including but not limited to: design studies and resulting program documents, the approach to agency and public involvement, permitting actions, and other key activities and objectives of this PE/NEPA work.

• The 4th Frequency represents a set of inter-related projects which must be completed in order to provide more frequent passenger rail service along the NCRR Piedmont Corridor. The projects comprise part of the federally designated SEHSR corridor extending from Charlotte, through VA and connecting with the NEC in D.C. Projects will also benefit Norfolk Southern Railway (NS) and CSX Transportation (CSXT).

• NC's SDP envisions providing a total of 8 passenger trains servicing the Piedmont Corridor with 4 trains traveling daily onto the NEC. (2 trains currently exist.) This application would fund all activities required to create a 4th passenger train frequency, enabling the state to realize its HSIPR vision by 2017. Additionally, NCDOT has identified the work required and the funding necessary in its Capital and Finance plans within its SDP in order to reach this vision.

• The corridor program includes 20 inter-related projects all of which are currently on the NCDOT TIP thus demonstrating the state's commitment to funding these programs. The origins of the corridor improvements are heavily influenced by the FRA Technical Monograph (Jan 2004).

The projects are designed to lower trip times, increase capacity, and ensure safety and reliability through: track construction and reconfiguration (i.e., double tracking, passing siding extension/addition, crossovers/interlocking, curve realignment, and higher speed turnouts); highway/railroad grade crossing safety improvements; renovated/new support facilities; upgraded/enhanced passenger stations; and additional vehicle capacity. These projects are summarized in the following narrative along with a map (attached) that shows the geographic locations of the various projects.

o Hopson Rd Grade Separation MP H64.7-H65.2 - A grade separated bridge will be built to replace an existing substandard rail grade bridge over SR 54; the Church Street at-grade rail crossing will be closed and the street rerouted and connected to Hopson Rd; and the NCRR H Line in this project area will be realigned and straightened to support faster train speeds.

o Clegg to Nelson Passing Siding MP H63.6-H66.0 - This project involves building a parallel passing siding along the track between Clegg and Nelson to allow trains travelling in opposite directions to pass, and to allow faster passenger or higher priority trains to pass slower or lower priority trains.

o Carmon Rd Crossing Closure MP H9.1 – Improve the utility of the 10,000 ft long passing siding by eliminating two intersecting at-grade crossings at Carmon Rd and rerouting Carmon Rd. Train sets currently using this siding must be broken-up to ensure emergency vehicle access through the crossings.

o Morrisville Parkway Grade Separation MP H69.6 – This project will eliminate an at-grade rail road crossing by building a bridge over the Morrisville Parkway.

o No. 24 Universal Crossover at Powell MP H76.7 – The FRA's Technical Monograph notes that:, "there is no interlocking between Fetner and Boylan - a distinct handicap in this area of special complexity" (pg. 6-22). The Powell project will allow for meets and passing of trains.

o Burlington Station Platform Extension MP H21.4 – The station platform will be extended by 200 ft. This project will expedite boarding/alighting and reduce dwell time.

o Double Track Restoration: Bowers and Lake MP 309.9-314.0/Cox and Hoskins MP289.3-291.1/Reid and North Kannapolis MP 337.3-347.3/Haydock and Junker MP 360.1-372.2 – This project will add 35 miles of new second track along four segments of the main line. These projects would provide an uninterrupted double track spanning 92 miles between Greensboro and Charlotte. The restoration of double track along the main line is critical to ensuring on time performance and reliability goals along the Piedmont Corridor and the entire SEHSR corridor.

o Turner Rd & Upper Lake Rd Grade Separation MP 313.1 & 311.2 – Two grade separation projects would involve bridges over Turner Rd MP 313.09 and Upper Lake Rd MP311.18

o Caldwell Rd Area Grade Separation MP360.1-372.2 – Several public and private at-grade railroad crossings within an undeveloped area in Charlotte will be eliminated to improve public safety and enhance passenger and freight train performance. This project will create a four mile long grade separated track.

o Klumac Rd Grade Separation MP 335.2 – A grade separated crossing will be built over Klumac Rd to separate a busy intersection from passing trains; the road will also be relocated to reduce the impact on existing homes and businesses.

o High Point Station Parking MP 299.4 – The number of customer parking spaces will be increased from 9 to 29, allowing more customers to find convenient parking and to attract new users.

o Kannapolis Station Platform Canopy MP 349.0 – An outdoor canopy will be built over the passenger boarding platform to provide shelter from the elements.

o Curve Realignment at Duke MP 327.4 – A segment of P-line track near Duke interlocking at Linwood Yard would be flattened and adjusted to improve train movement along the tracks and increase passenger train speeds from 45 mph to 65 mph.

o Private Crossing Safety Initiative MP H0-H75.7 & 295.2-366.5 – This project involves removing and/or mitigating safety hazards at 15 private crossings along the Piedmont Corridor through median separators, crossbacks, automatic flashers and gates, signals, and locking gates. This project is part of NCDOT's Sealed Corridor program, which is a nationally recognized safety program.

o CRISP - Charlotte Maintenance Facility MP NS378.6 – The service facility would have two service tracks that will pass though a building to allow for cleaning, refueling and minor servicing. The site will also include two layover tracks. This facility would service and store both Raleigh–Charlotte and NEC–Charlotte equipment.

o CRISP Grade Separation MP377.1NS & 330.6 CSXT – This project would grade separate NS and CSXT lines where they cross at-grade in Charlotte. The grade separation would place the CSXT track in a concrete trough 3,400 ft in length and eliminate nine at-grade crossings. Rail operations will be modernized through Charlotte benefitting NS, CSXT, Amtrak Piedmont Corridor services, and future CATS commuter trains.

o Purchase 4 Used Passenger Cars & Rehab 7 cars to "like new" condition – NCDOT will refurbish 7 used passenger rail cars to accommodate the 4th Frequency. These passenger cars will be coaches, baggage/lounge and baggage/coach cars.

o Capital Yard Phase I Improvements –This facility in Raleigh will be renovated and expanded to support additional service frequencies. Improvements include: lengthening tracks 1 and 2 and constructing additional layover service facilities.

o Installation of Public Information Display Systems – ADA/FRA mandated Public Information Display Systems (PIDS) and their related component parts will be purchased and installed in all passenger stations along the corridor.

• This corridor program is designed to provide a 4th passenger frequency of service along the existing Amtrak Piedmont Corridor between Charlotte and Raleigh. This service will serve the following nine stations: Raleigh, Cary, Durham, Burlington, Greensboro, High Point, Salisbury, Kannapolis, and Charlotte.

• This corridor program is designed to provide a 4th Frequency of service along the Piedmont Corridor between Raleigh and Charlotte. Service is currently provided through the corridor by Amtrak's Piedmont and Carolinian services. The Piedmont operates between Charlotte and Raleigh, while the Carolinian extends from NYC to Charlotte. Each of these services provides one round trip per day. The 4th Frequency service will provide two additional round trips between Charlotte and Raleigh. There are no changes planned in terms of service, fare policies, or quality of service standards. However, passenger amenities will be enhanced through more comfortable rail cars and physical and technological improvements at passenger train stations.

• The implementation of high speed rail from D.C. to Charlotte has involved more than a decade of planning and implementation. The process formally began when the SEHSR was designated a high speed rail corridor by the USDOT in October 1992. To move the corridor closer to realization, the two states of NC and VA agreed to jointly develop the required planning and environmental documentation required. In 1998, a memorandum of understanding for this process was entered into by NCDOT, VA DRPT, FHWA, and FRA.

In 1991, a Tier I EIS was begun with 9 alternatives. A draft EIS was concluded in 2001 and a final EIS with a preferred corridor issued in June 2002. A record of decision was jointly issued by FRA and FHWA in October 2002. The Tier II EIS for the Richmond to Raleigh segment of SEHSR is well under way, with the completion currently slated for early 2010 and a ROD expected in 2011.

Both VA and NC have a history of issuing comprehensive state rail plans to guide the development of freight and passenger rail in their states. These rail plans have continually recognized the vision of high speed rail through their states and actively planned and programmed projects to implement SEHSR. NC has elected to use an incremental building block approach for the implementation of SEHSR. This approach provides additional rail passenger service frequencies one at a time with the infrastructure improvements necessary to accommodate each frequency. As each frequency is added, the state moves one step closer to the vision of high speed rail between Charlotte & D.C.

In NC, each project that has been identified as critical to the implementation of one of the additional frequencies and the completed SEHSR (and all projects for which ARRA funding is being requested) have been placed on the state's TIP. This demonstrates NC's commitment to funding these programs.

• The purpose of the 4th Frequency is to provide round trip service between Raleigh and Charlotte and provide needed upgrades for the continuation of existing service through the corridor. This will be developed in a cost effective manner while still providing service quality. The Piedmont Corridor is being designed as a passenger and freight corridor using the existing rail line and 200 ft wide ROW owned by the NCRR. The ROW can accommodate multiple tracks and other railroad infrastructure without significant additional land purchases. The NCRR tracks and ROW is a billion dollar asset that would be nearly impossible to assemble today.

• This Corridor Program is designed as one building block of SEHSR service. Benefits (i.e., two additional round trips and enhanced passenger amenities) are fully realized upon implementation and are not dependent upon additional service frequencies or the implementation of the SEHSR service.

• The 4th Frequency includes projects using NCDOT "Sealed Corridor" program, which designs innovative solutions to crossing safety, including median separators; quiet zones; and automatic flashers, signals, and four quadrant locking gates. The Sealed Corridor program is widely considered to be one the most effective state programs in the country.

• This Corridor program exclusively uses ROW and trackage owned by the NCRR, NS and CSXT. The NCRR itself is owned by NC with freight usage rights given to NS.

• This Corridor Program is designed to principally benefit intercity passenger rail operated between Charlotte and Raleigh. However, several projects will also provide considerable benefits to the freight railroads by increasing capacity and improving schedule reliability. Major projects benefitting freight operations include the restoration of double track along the P-line, the construction of grade separations, and improving the utility of passing sidings.

• The Corridor Program does not propose any PE/NEPA work.

**(5) Describe the service objective(s) for this Corridor Program** *(check all that apply):*

☒ Additional Service Frequencies
☒ Improved Service Quality
☒ Improved On-Time performance on Existing Route
☐ Reroute Existing Service
☒ Increased Average Speeds/Shorter Trip Times
☒ New Service on Existing IPR Route
☐ New Service on New Route
☒ Other *(Please Describe):* Station improvements and other passenger amenities; improve safety and mobility (grade separation).

**(6) Right-of-Way-Ownership.** Provide information for all railroad right-of-way owners in the Corridor Program area. Where railroads currently share ownership, identify the primary owner. *If more than three owners, please detail in Section F of this application.*

| Type of Railroad | Railroad Right-of-Way Owner | Route Miles | Track Miles | Status of agreements to implement projects |
|---|---|---|---|---|
| Regional or Sh | North Carolina Railroad (NCCR) | 173 | 229 | Master Agreement in Place |
| Class 1 Freight | Norfolk Southern (NS) | n/a | n/a | Master Agreement in Place |
| Class 1 Freight | CSX Transporation (CSXT) | n/a | n/a | Master Agreement in Place |

**(7) Services.** Provide information for all existing rail services within Corridor Program boundaries (freight, commuter, and intercity passenger). *If more than three services, please detail in Section F of this application.*

| Type of Service | Name of Operator | Top Speed Within Boundaries | | Number of Route Miles Within Boundaries | Average Number of Daily One-Way Train Operations within Boundaries[1] | Notes |
|---|---|---|---|---|---|---|
| | | Passenger | Freight | | | |
| Freight | Norfolk Southern (NS) | n/a | 60 | 173 | 26 | 26 (Greensboro to Charlotte)<br>5 (Greensboro to Raleigh) |
| Intercity Pass | Amtrak | 79 | n/a | 173 | 6 | 4 (Greensboro to Raleigh)<br>6 (Greensboro to Charlotte) |
| Intercity Pass | | | | | | |

**(8) Rolling Stock Type.** Describe the fleet of locomotives, cars, self-powered cars, and/or trainsets that would be intended to provide the service upon completion of the Corridor Program. *Please limit response to 2,000 characters.*

In providing the needed capacity for the 4th frequency, NCDOT will purchase 4 used passenger railcars and spare parts; and rehabilitate 7 state-owned passenger cars to "like new" condition. These vehicles will compliment the rolling stock supporting the Amtrak Piedmont service. NCDOT will ship the 7 state-owned railcars to an out of state shop where they will be rebuilt and reconfigured to match the specifications and design of the existing NCDOT passenger railcar fleet. The vehicles will become a combination of coaches, combined baggage/lounge cars, and combined coach/baggage cars.

All rebuilt and redesigned equipment as well as the components and materials used in the rebuilds will comply with safety standards and practices of the FRA, APTA, American Association of Railroads, Amtrak, and the state of North Carolina; the vehicles will be designated FRA "Tier I" or suitable for a maximum of 110 MPH operation.

This proposal is consistent with NCDOT practice of purchasing used railcars that can be refurbished to “like new” condition. This allows the state to obtain equipment more quickly and more inexpensively than purchasing new equipment; this procedure also allows the state to purchase a small number of cars and increase the size of their fleet incrementally.

**(9) Intercity Passenger Rail Operator.** If applicable, provide the status of agreements with partners that will operate the benefiting high-speed rail/intercity passenger rail service(s) (e.g., Amtrak). If more than one operating partner is envisioned, please describe in Section F.

Name of Operating Partner: Amtrak

Status of Agreement: Preliminary executed agreement/MOU

[1] One round trip equals two one-way train operations.

**(10) Master Project List.** Please list all projects included in this Track 2 Corridor Program application in the table below. If available, include more detailed project costs for each project as a supporting form (see Section G below).

| Project Name | Project Type | Project Description | Project Start Date (*mm/yyyy*) | Estimated Project Cost (Millions of YOE Dollars, One Decimal) | | Was this Project included in a prior HSIPR application? Indicate track number(s). | Are more detailed project costs included in the Supporting Forms? |
|---|---|---|---|---|---|---|---|
| | | | | Total Cost | Amount Applied For | | |
| SEHSR NC T2.2 Proj #8 CRISP - Charlotte Maintenance Facility | PE/ NEPA | Supports safety, service, and maintenance of passenger equipment. | 01/2010 | 23.4 | 23.4 | No | Yes |
| SEHSR NC T2.2 Proj #9 CRISP - Create grade separation for NS/CATS/CSXT in Charlotte | PE/ NEPA | Provides critical access to Charlotte Gateway Station for SEHSR and intercity passenger service. Required for grade separation of busy mainline and planned CATS commuter service. Reduces emissions and noise from waiting trains. Moving Tryon Yard facilitates construction and removal of local switching interference with passenger train movements. | 01/2010 | 129.2 | 128.3 | No | Yes |
| SEHSR NC T2.2 Proj #10a NCRR Improvement Program (NCRRIP) - Restore Double Track Charlotte to Greensboro - Haydock to Junker | PE/ NEPA | Improves capacity by allowing planned passenger trains to pass without delay, and improves safety and OTP. Completes double track Greensboro to Charlotte. Design speed 79 mph with future upgrade to 90 mph. | 01/2010 | 95.1 | 92.1 | No | Yes |
| SEHSR NC T2.2 Proj #10b NCRRIP - Restore Double Track Charlotte to Greensboro - Reid to North Kannapolis | PE/ NEPA | Improves capacity by allowing planned passenger trains to pass without delay, and improves safety and OTP. Completes double track Greensboro to Charlotte. Design speed 79 mph with future upgrade to 90 mph. Includes crossing closures and improvements, limited grade separations. | 01/2010 | 92.6 | 92.6 | No | Yes |
| SEHSR NC T2.2 Proj #10c NCRRIP - Restore Double Track Charlotte to Greensboro - Bowers to Lake | PE/ NEPA | Improves capacity by allowing planned passenger trains to pass without delay, and improves safety and OTP. Completes double track Greensboro to Charlotte. Design speed 79 mph with future upgrade to 90 mph. Eliminates crossing | 01/2010 | 47.5 | 44.5 | No | Yes |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | hazards through grade separation of heavy truck crossings at Turner Rd. and Upper Lake Rd. and closure of Lower Lake Rd. | | | | | |
| SEHSR NC T2.2 Proj #10d NCRRIP Restore Double Track Charlotte to Greensboro - Cox to Hoskins | PE/ NEPA | Improves capacity by allowing planned passenger trains to pass without delay, and improves safety and OTP. Completes double track Greensboro to Charlotte. Design speed 79 mph with future upgrade to 90 mph. | 01/2010 | 18.4 | 6.9 | No | Yes |
| SEHSR NC T2.2 Proj #11 Kannapolis Station Platform Canopy | PE/ NEPA | Provides safe shelter from the elements for passengers increasing customer satisfaction. | 01/2010 | 0.3 | 0.3 | No | Yes |
| SEHSR NC T2.2 Proj #12 Klumac Road Grade Separation | PE/ NEPA | Improves safety and area mobility. | 01/2010 | 9.2 | 6.1 | 1a | Yes |
| SEHSR NC T2.2 Proj #13 Curve realignment at Duke south of Linwood yard | PE/ NEPA | Increases passenger train speed from 45 mph to 65 mph and reduces travel time per train by 1 minute. | 01/2010 | 4.4 | 1.4 | No | Yes |
| SEHSR NC T2.2 Proj #14 High Point Station parking | PE/ NEPA | Provides needed parking for passenger rail customers facilitating increased ridership. | 01/2010 | 2.2 | 2.2 | 1a | Yes |
| SEHSR NC T2.2 Proj #15 Carmon Road Crossing Closure and 1-mile road realignment on new location | PE/ NEPA | Eliminates 2 crossings in a passing siding, increasing its utility for passenger trains to pass long freight trains. Eliminates associated hazard to traveling public. | 01/2010 | 6.6 | 4.8 | No | Yes |
| SEHSR NC T2.2 Proj #16 Burlington Station platform extension | PE/ NEPA | Allows all passengers to board faster/safer without repositioning train thus improving travel time. | 01/2010 | 0.3 | 0.3 | 1a | Yes |
| SEHSR NC T2.2 Proj #17 NCRRIP - Clegg to Nelson Passing Siding | PE/ NEPA | Improves capacity by allowing planned passenger trains to pass without delay, and improves safety and OTP. Main track design speed 79 mph with future upgrade to 90 mph. | 01/2010 | 8.8 | 8.8 | No | Yes |
| SEHSR NC T2.2 Proj #18 NCRRIP - Hopson Road Grade Separation, Church Street Closure and associated traffic rerouting | PE/ NEPA | Improves safety and increases speed by flattening curve. Existing speed 55 mph. Design speed 79 mph with future upgrade to 90 mph. | 01/2010 | 13.9 | 9.3 | No | Yes |
| SEHSR NC T2.2 Proj #19 Morrisville Parkway Grade Separation | PE/ NEPA | Improves safety and area mobility. | 01/2010 | 16.0 | 14.0 | No | Yes |
| SEHSR NC T2.2 Proj #20 Design and construct #24 universal crossover at Powell between Fether and Method | PE/ NEPA | Allows for meets and passing of trains to improve operational efficiency and reduce travel time. | 01/2010 | 2.7 | 2.7 | 1a | Yes |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| SEHSR NC T2.2 Proj #21 Private Crossing Safety Initiative - Raleigh to Charlotte | PE/ NEPA | Removes and/or mitigates hazards at 15 private crossing locations along SEHSR corridor between Raleigh to Charlotte. | 01/2010 | 20.0 | 16.4 | No | Yes |
| SEHSR NC T2.2 Proj #22 Purchase 4 used passenger cars and rehabilitate 7 cars | PE/ NEPA | Provides needed equipment for additional frequency. | 01/2010 | 11.8 | 11.8 | No | Yes |
| SEHSR NC T2.2 Proj #23 Capital Yard Phase I Improvements | PE/ NEPA | Supports service and maintenance of passenger equipment. | 01/2010 | 6.1 | 6.1 | 1a | Yes |
| SEHSR NC T2.2 Proj #24 Equip 9 Piedmont Corridor stations and platforms with ADA/FRA mandated Public Information Display Systems | PE/ NEPA | Provides required video and audio information for passengers that are hearing and sight impaired. | 07/2010 | 1.5 | 1.5 | No | Yes |
| | PE/ NEPA | | | | | | Yes |

**Note:** In addition to **program** level supporting documentation, all applicable **project** level supporting documentation is required prior to award. If project level documentation is available now, you may submit it; however, if it is not provided in this application, this project may be considered as a part of a possible Letter of Intent but will not be considered for FD/Construction grant award until this documentation has been submitted.

**In narrative form, please describe the sequencing of the projects listed in Question 10. Which activities must be pursued sequentially, which can be done at any time, and which can be done simultaneously?** *Please limit response to 4,000 characters.*

Projects within the SEHSR program are sequenced to minimize rail traffic interferences and delays while providing a cost effective contracting approach. Current conditions have been used as the basis for initial project sequencing; future rail traffic and economic conditions may suggest different approaches, particularly in the out years of deploying SEHSR. There are also instances where it may be necessary to do projects in the later frequency applications earlier than projects in the preceding frequency. SEHSR represents a continuum of projects that yields the capacity to run additional, faster passenger trains while accommodating freight traffic growth. These applications correspond to increases in network capacity and passenger train frequencies. Situations may present themselves in the future that would provide earlier implementation of some of the projects at lower cost than budgeted. These may occur when the railroads are upgrading facilities or systems and can piggyback SEHSR projects that are mutually beneficial.

All parties involved must coordinate their individual efforts closely. Railroad related projects such as signals, double tracking, sidings, and interlockings will be the responsibility of the railroad owner using railroad forces or specialized railroad contractors under their management. Other infrastructure projects will use contractors who specialize in the activity required. NCDOT is the SEHSR Program Manager. NCDOT will need to utilize consultant and other outside contractors to execute the contracts. Individual projects may need to be staggered based on funding, contractor availability, materials, NCDOT, and railroad staff resources. On large and complex SEHSR components NCDOT will name a project manager who will be responsible for overall project implementation and timely completion. Project managers will be responsible for defined segments of the corridor and all the projects in the given territory to ensure proper interface with all involved parties.
Initial project sequencing is described below:

- Project #s 9, 12, 15, 19, and 21 are grade separations and grade crossing safety improvements. These projects may be done independently and simultaneously depending on how the contract(s) is/are structured;

- Project #18 will be undertaken sequentially with grade separation followed by track realignment and roadway rerouting;

- Project #10C will be undertaken sequentially with grade separations followed by double track installation;

- Project #s 10A, 10B, 10D involve the installation of double track and Project #17 involves the installation of a passing siding. These projects may be done independently, simultaneously or sequentially depending on how the contract(s) is/are structured;

- Project #s 13 and 20 involve track realignment and reconfiguration. These projects may be done independently, simultaneously or sequentially depending on how the contract(s) is/are structured;

- Projects # 8 and 24 involve support facility construction and renovation and Projects # 11, 14, 16, and 25 involve passenger station renovations. These projects may be done independently, simultaneously or sequentially depending on how the contract(s) is/are structured; and

- Project # 22 involves the acquisition and rehabilitation of passenger rail cars and can be accomplished independently, simultaneously or sequentially.

*Corridor Program Name:* NC T2.2 - SEHSR - Piedmont 4th Frequency *Date of Submission:* 10/02/09 *Version Number:* C

# C. Eligibility Information

**(1) Select applicant type, as defined in Appendix 1.1 of the HSIPR Guidance:**

☒ State
☐ Amtrak

**If one of the following, please append appropriate documentation as described in Section 4.3.1 of the HSIPR Guidance:**

☐ Group of States
☐ Interstate Compact
☐ Public Agency established by one or more States
☐ Amtrak in cooperation with a State or States

**(2) Establish completion of all elements of a Service Development Plan.** Note: One Service Development Plan may be referenced in multiple Track 2 Applications for the same corridor service.
**Please provide information on the status of the below Service and Implementation Planning Activities:**

| | **Select One of the Following:** | | | **Provide Dates for all activities:** | |
|---|---|---|---|---|---|
| | No study exists | Study Initiated | Study Completed | Start Date (mm/yyyy) | Actual or Anticipated Completion Date (mm/yyyy) |
| **Service Planning Activities/Documents** | | | | | |
| Purpose & Need/Rationale | ☐ | ☐ | ☒ | | 06/2002 |
| Service/Operating Plan | ☐ | ☐ | ☒ | | 09/2002 |
| Prioritized Capital Plan | ☐ | ☐ | ☒ | | 09/2009 |
| Ridership/Revenue Forecast | ☐ | ☐ | ☒ | | 09/2009 |
| Operating Cost Forecast | ☐ | ☐ | ☒ | | 09/2009 |
| Assessment of Benefits | ☐ | ☐ | ☒ | | 06/2002 |
| **Implementation Planning Activities/Documents** | | | | | |
| Program Management Plan | ☐ | ☐ | ☒ | | 08/2009 |
| Financial Plan (capital & operating – sources/uses) | ☐ | ☐ | ☒ | | 09/2009 |
| Assessment of Risks | ☐ | ☐ | ☒ | | 08/2009 |

**(3) Establish Completion of Service NEPA Documentation (the date document was issued and how documentation can be verified by FRA).** The following are approved methods of NEPA verification (in order of FRA preference): 1) References to large EISs and EAs that FRA has previously issued, 2) Web link if NEPA document is posted to a website (including www.fra.gov), 3) Electronic copy of non-FRA documents attached with supporting documentation, or 4) a hard copy of non-FRA documents (large documents should not be scanned but should be submitted to FRA via an express delivery service). See HSIPR Guidance Section 1.6 and Appendix 3.2.9.

Note to applicants: Prior to obligation of funds for FD/Construction activities under Track 2, all project specific documents will be required (e.g. Project NEPA, Financial Plan, and Project Management Plan).

| **Documentation** | **Date** *(mm/yyyy)* | **Describe How Documentation Can be Verified** |
|---|---|---|
| Tier 1 NEPA EIS (Programmatic) | 06/2002 | See application attachment |
| Tier 1 NEPA EA | | |
| Tier 1 NEPA EA | | |

**(4) Indicate if there is an environmental decision from FRA (date document was issued and web hyperlink if available)**

| **Documentation** | **Date** *(mm/yyyy)* | **Hyperlink** *(if available)* |
|---|---|---|
| Record of Decision | 10/2002 | www.fra.dot.gov/downloads/RRDev/setier1rod.pdf |
| Finding of No Significant Impact | | |
| Finding of No Significant Impact | | |

# D.Public Return on Investment

**(1) 1A. Transportation Benefits.** *See HSIPR Guidance Section 5.1.1.1. Please limit response to 8,000 characters.*

How is the Corridor Program anticipated to improve Intercity Passenger Rail (IPR) service? Describe the overall transportation benefits, including information on the following *(please provide a level of detail appropriate to the type of investment):*

- Introduction of new IPR service: Will the Corridor Program lead directly to the introduction of a new IPR service that is not comparable to the existing service (if any) on the corridor in question? Describe the new service and what would make it a significant step forward in intercity transportation.
- IPR network development: Describe projected, planned, and potential improvements and/or expansions of the IPR network that may result from the Corridor Program, including but not limited to: better intermodal connections and access to stations; opportunities for interoperability with other services; standardization of operations, equipment, and signaling; and the use of innovative technologies.
- IPR service performance improvements *(also provide specific metrics in table 1B below)*: Please describe service performance improvements directly related to the Corridor Program, as well as a comparison with any existing comparable service. Describe relevant reliability improvements (e.g., increases in on-time performance, reduction in operating delays), reduced schedule trip times, increases in frequencies, aggregate travel time savings (resulting from reductions to both schedule time and delays, e.g., expressed in passenger-minutes), and other relevant performance improvements.
- Suggested supplementary information (*only when applicable*):
  - Transportation Safety: Describe overall safety improvements that are anticipated to result from the Corridor Program, including railroad and highway-rail grade crossing safety benefits, and benefits resulting from the shifting of travel from other modes to IPR service.
  - Cross-modal benefits from the Corridor Program, including benefits to:
    - ✓ Commuter Rail Services – Service improvements and results (applying the same approach as for IPR above).
    - ✓ Freight Rail Services – Service performance improvements (e.g., increases in reliability and capacity), results (e.g. increases in ton-miles or car-miles of the benefiting freight services), and/or other congestion, capacity or safety benefits.
    - ✓ Congestion Reduction/Alleviation in Other Modes; Delay or Avoidance of Planned Investments – Describe any expected aviation and highway congestion reduction/alleviation, and/or other capacity or safety benefits. Also, describe any planned investments in other modes of transportation (and their estimated costs if available) that may be avoided or delayed due to the improvement to IPR service that will result from the Corridor Program.

The elements contained in this application provide an array of transportation benefits to the region. As a part of the federally designated SEHSR Corridor, the benefits extend beyond NC State lines to the north as a natural extension of the Northeast Corridor (NEC) and to the south, by expanding intercity passenger rail (IPR) to an ever increasing number of travelers along the East Coast. Improving passenger rail service in the corridor and ensuring its place as an integral part of the region's transportation network is crucial to the economic vitality and quality of life of those who live and work along the corridor. In the states of SEHSR, where population is expected to grow by 21-52% over the next 20 years, (NC's projected growth of 52% is 7th in the nation) passenger rail will be counted upon to move more people, more efficiently, reliably and frequently.

The elements herein, continue NC's long history of developing and improving passenger rail service begun in the 19th century; and of investing in Rail service over the years as 1 of only 14 States to actively invest in intercity passenger rail service routes. Primarily, those investments have been in support of the 2 services initiated by the state in the 1990's – the Piedmont, (Raleigh to Charlotte) and the Carolinian, (Washington to

Charlotte).

IPR ridership as a result of the implementation of the 4th Freq. service will grow steadily. Projections show that in the 1st full year of operation, annual passenger trips will be 70,802 and will grow to 80,480 in the 5th yr and to 92,324 in the 10th full year. On Time Performance (OTP) is estimated to be 70% in the 1st year, improving to 80% in the 5th year and holding steady at 80% in the 10th year. Top operating speeds (even as infrastructure improvement projects are underway) are projected to be 79 mph and Annual Passenger Miles in the 1st yr of operation are expected to be 8.50 million, 9.50 million in the 5th year, and 10.56 in the 10th year. With shorter trip times and improved reliability, the results will lead to faster, more efficient, desirable, and accessible service, that will help provide congestion relief for the overburdened highway systems in NC, while offering viable transportation alternatives to the traveling public. The operation of the 4th frequency is expected to divert nearly 66,000 intercity auto trips and approximately 8 million vehicle miles of travel from the Charlotte to Raleigh highway corridor in its 1st full year of operation.

To accommodate increased ridership, and improve reliability, NCDOT will purchase 4 used passenger cars; and rehabilitate 7 cars to "like new" condition. These additions will attract new riders, improve efficiency, modernize the service and enhance customer convenience – all contributing factors to promoting the benefits of passenger rail travel over other modes.

There will be investments made on the corridor to equip 9 NC stations and platforms with ADA/FRA mandated Public Information Display Systems. (PIDS) PIDS will provide connections to local law enforcement 911 centers, the NC State Emergency Management monitoring center and Amtrak's National Control Center. PIDS will also provide video and audio information for passengers that are hearing and sight impaired.

Safety is a major priority, as it is for the entire SEHSR corridor effort. NC's historic Sealed Corridor Program, along the existing high-speed rail corridor from Charlotte to Raleigh was the first such program in the nation. As described in the "FRA USDOT Technical Monograph: Transportation Planning for the Richmond-Charlotte Railroad Corridor" (January 2004) "The Sealed Corridor Initiative serves as a model for grade crossing hazard elimination. With its program of technology installation, testing, and assessment, the Initiative is a prime example of a cost-effective, comprehensive, corridor-wide grade crossing treatment."

A particularly innovative aspect of the NC Sealed Corridor Program is "The Private Crossing Safety Initiative". As part of the elements of the 4th Freq. application, the Initiative will remove and mitigate hazards at 15 private crossing locations along SEHSR between Raleigh and Charlotte, benefitting public safety and removing hazards that impact train operations and business and residential development.

Importantly, the NC Sealed Corridor Program has proven to be effective – it saves lives – according to the USDOT Volpe Center – their Fatal Crash Analysis estimated 19.7 potential "lives saved" with the projects implemented on the Sealed Corridor through December 2007. In fact, as recently as July 24, 2009, in its Safety Strategy Discussion Draft for Public Outreach, FRA stated that "there have been demonstrated successes in deploying 'sealed corridor' technology in designated High-Speed Rail Corridors. The most mature of these corridors is on the North Carolina Railroad, the route of Intercity Corridor Passenger Service sponsored by the NCDOT".

In addition to the Sealed Corridor Program, implementation of the Health Monitoring System – an Intelligent Signal Monitoring System is installed at each Norfolk Southern maintained public crossing along the Sealed Corridor to notify railroad personnel about malfunctions of crossing equipment. These "health monitoring" devices can be linked electronically to local authorities to use for re-routing of police, fire and rescue vehicles if a crossing signal is malfunctioning as part of Intelligent Transportation System (ITS) applications.

In general, along with improving passenger rail travel, the individual elements described in this application such as; double tracking; curve realignments and passing sidings, will also benefit freight railroads by increasing speeds, improving capacity, safety, schedule reliability; resulting in increases in ton miles and car miles.

Specifically, elements of this application will each provide crucial corridor-wide transportation benefits to be accrued by the public and private sector. One example, the Hopson Road Grade separation Church Street Closure and Track Realignment, combined with the Clegg to Nelson Passing Siding, will benefit the public by improving safety, OTP (allowing trains to pass by without delay at Clegg to Nelson) and increasing speed

(flattening the curve at the Hopson Rd section to go from 55 to 79 mph with future upgrade to 90 mph). These and other projects, such as; completing Double Tracking from Greensboro to Charlotte, (highlighted in the application) will improve capacity, increase design speeds, prevent delays, and improve OTP. Most importantly at Clegg Rd, as in similar projects, improvements will eliminate crossing hazards that could well result in accidents and, in the end, will save lives. On the freight side, these improvements will benefit efficiency and capacity.

Station improvements at Burlington, High Point, and Kannapolis will address various capacity and efficiency needs and result in public benefits accruing in the areas of safety, mobility, air quality, customer satisfaction, accessibility and ridership growth. In total, the 4th freq service will serve 9 station stops from Raleigh to Charlotte, providing commuter-like intercity connectivity and easy access to regional and local transit service as well.

The Charlotte Rail Improvement and Safety Program (CRISP) is a critical part of this corridor application. CRISP has a comprehensive capital plan designed to modernize rail operations throughout the city to accommodate increased service needs for both passenger and freight rail services. The CRISP project at the Charlotte maintenance facility will support safety, service, and maintenance of passenger equipment. The grade separation project will provide access to Charlotte Gateway Station for SEHSR for passenger rail and grade separation of the mainline and planned CATS.

**1B. Operational and Ridership Benefits Metrics:** In the table(s) below, provide information on the anticipated levels of transportation benefits and ridership that are projected to occur in the corridor service or route, following completion of the proposed Corridor Program.

**Note: The "Actual—FY 2008 levels" only apply to rail services that currently exist. If no comparable rail service exists, leave column blank.**

| Corridor Program Metric | Actual – FY 2008 levels | Projected Totals by Year | | |
|---|---|---|---|---|
| | | First full year of operation | Fifth full year of operation | Tenth full year of operation |
| Annual passenger-trips | n/a | 70,802 | 80,480 | 94,482 |
| Annual passenger-miles (millions) | n/a | 8.50 | 9.50 | 10.56 |
| Annual IPR seat-miles offered (millions) | n/a | 22.7 | 22.7 | 22.7 |
| Average number of daily round trip train operations (typical weekday) | n/a | 1 | 1 | 1 |
| On-time performance (OTP)[2]– percent of trains on time at endpoint terminals | n/a | 80.0 | 80.0 | 80.0 |
| Average train operating delays: minutes of en-route delays per 10,000 train-miles[3] | n/a | 1,228 | 1,228 | 1,053 |
| Top passenger train operating speed (mph) | n/a | 79 | 79 | 79 |
| Average scheduled operating speed (mph) (between endpoint terminals) | n/a | 55.2 | 55.2 | 55.2 |

[2] 'On-time' is defined as within the distance-based thresholds originally issued by the Interstate Commerce Commission, which are: 0 to 250 miles and all Acela trains—10 minutes; 251 to 350 miles—15 minutes; 351 to 450 miles—20 minutes; 451 to 550 miles—25 minutes; and 551 or more miles—30 minutes.

[3] As calculated by Amtrak according to its existing procedures and definitions. Useful background (but not the exact measure cited on a route-by-route basis) can be found at pages E-1 through E-6 of Amtrak's May 2009 Monthly Performance Report at http://www.amtrak.com/pdf/0905monthly.pdf

**(2) A. Economic Recovery Benefits:** *Please limit response to 6,000 characters. For more information, see Section 5.1.1.2of the HSIPR Guidance.*

Describe the contribution the Corridor Program is intended to make towards economic recovery and reinvestment, including information on the following:

- How the Corridor Program will result in the creation and preservation of jobs, including number of onsite and other direct jobs (on a 2,080 work-hour per year, full-time equivalent basis), and timeline for achieving the anticipated job creation.
- How the different phases of the Corridor Program will affect job creation (consider the construction period and operating period).
- How the Corridor Program will create or preserve jobs or new or expanded business opportunities for populations in Economically Distressed Areas (consider the construction period and operating period).
- How the Corridor Program will result in increases in efficiency by promoting technological advances.
- How the Corridor Program represents an investment that will generate long-term economic benefits (including the timeline for achieving economic benefits and describe how the Corridor Program was identified as a solution to a wider economic challenge).
- If applicable, how the Corridor Program will help to avoid reductions in State-provided essential services.

NC has long recognized the importance of investing in the development of intercity passenger rail service; while also being cognizant of the benefits those investments will have on the economic vitality of the state, and the region. On October 19, 2007, the NC House Select committee on Expanding Rail Service made a recommendation to the General Assembly that supports the implementation of passenger service to southeastern and western NC and recommended that it "should consider increasing investments in passenger rail and rail transit to increase choice, reduce high congestion, and promote economic development…the communities in these corridors have demonstrated long-term support for renewal of passenger rail service and have stressed the capacity of passenger rail to provide greater choice and opportunity to their citizens and to promote urban and regional economic development."

A central element of the ARRA legislation is the rapid mobilization of the US workforce and the creation of new high paying jobs. It has been shown that investment in rail transportation and infrastructure will create significant employment benefits. In fact, the USDOT has stated that investment in public transportation creates almost 20% more jobs than similar investment in building roads or highways would.

Investments in the 4th Frequency will help to further the efforts to successfully develop the Piedmont Corridor in NC and, in the "big picture," help to progress the SEHSR corridor and its natural connection to the NEC.

With the current downturn in the homebuilding and non-residential building industry, construction workers will enjoy a much-needed and significant economic boost with the construction and development elements contained in this Corridor Program. It is estimated that a total of 178 direct construction activity jobs will be created or preserved in NC in 2010, with 1,099 additional jobs in 2011, increasing to 1,726, in 2012 and to 1,208 in 2013. There will also be 177 indirect construction activity jobs created or preserved in 2010 in NC growing to 1,092 in 2011, and to 1,714 in 2012, and to 1,200, in 2013. In total, 8,395 direct and indirect jobs will be created or preserved in the state of NC as a result of the construction activities resulting from the various components that comprise this application. Of those, 6,615 will be jobs within the Piedmont Corridor.

Additionally, as a result of equipment purchase and rehabilitation for 4th Freq use, jobs will be created or preserved in states in the lower 48 states of the US where supplies/materials are provided and/or, equipment is manufactured, and where the rehab work is to be performed. Jobs created or preserved related to this work in the US in 2010 will be 14 direct and 78 indirect and in 2011 there will be 16 direct and 90 indirect jobs created – for a total of 199 as a result of the purchase and/or rehab of equipment for the 4th Freq and related elements of this corridor program.

There will also be significant professional service positions created or preserved as a result of the activities related to the 4th Freq. It is projected that there will be in 2010 - 216 direct jobs created and 99 in 2011, 74 in 2012, and 68 in 2013. Indirect professional service positions created in 2010 are projected to be 265, with 121 in 2011, 91 in 2012 and 64 in 2013. In total, the net effects of professional service Activity – Direct and Indirect jobs related to the Piedmont Corridor and 4th Freq. are 1,017 jobs in the state of NC – of which 897 of those jobs will be in Raleigh, NC.

Operating the 4th Freq will also create additional employment – direct and indirect. Direct jobs would include; 2 NCDOT

Administrative personnel, 11 Amtrak conductors, assistant conductors, 6 engineers, 4 NCDOT station attendants and 1 NCDOT mechanical manager; and 3 non-union mechanical contractors and 1 contractor mechanical manager. Engineers, conductors & staff hired to support service expansion will spend their wages and create proportional increase in demand for a range of goods and services which project to support the creation or preservation of a total of 61 jobs in the corridor communities to operate the 4th Freq. In total, operating the 4th Freq will immediately create 88 jobs in the 1st full year (2014) of operation (27 direct and 61 indirect). Of these 86 will be in the corridor and all 88 will be jobs created in NC. These numbers are sustained through the 5th yr of operation and on through the 10th yr. As more frequencies are added to this developing corridor – new employees will be needed and more jobs will be created.

Since many NC counties traversed by the Corridor meet the Economically Distressed Area (EDA) criteria, it can be reasonably assumed that there will be EDA workers supported by the elements of the corridor program.

The elements of the 4th Freq will provide strong support for workers located in several EDAs during the construction period. With an avg of 7.04% over the most recent 24 months, NC's avg. unemployment rate exceeds the US avg. of 6.26% over the same period by over 1 % point. This means that NC itself meets the definition of EDA. These jobs will be created quickly and will provide much-needed support to struggling communities, many of which currently have jobless rates in double digits. NC's unemployment rate is 10.9% (July 2009), more than a full percentage point above the US avg.

As jobs are created, NC is in a unique position of having a skilled and qualified resource re-entering the workforce with a large number of military veterans returning to NC after completing their tour of duty. The NC Military Business Center (NCMBC) is working with the Governor's office to develop programs, identify skills and encourage veterans to remain in NC. NCMBC participates in MATCH FORCE.com, matching actual skills with actual jobs as well as developing new programs to keep veterans in NC and in the workforce.

**2B. Job Creation.** Provide the following information about job creation through the life of the Corridor Program. Please consider construction, maintenance and operations jobs.

| Anticipated number of onsite and other direct jobs created (on a 2080 work-hour per year, full-time equivalent basis). | FD/ Construction Period | First full year of operation | Fifth full year of operation | Tenth full year of operation |
|---|---|---|---|---|
| | 9,412 | 88 | 88 | 88 |

**(3) Environmental Benefits.** *Please limit response to 6,000 characters.*

How will the Corridor Program improve environmental quality, energy efficiency, and reduce in the Nation's dependence on oil? Address the following:

- Any projected reductions in key emissions (CO2, $O^3$, CO, PMx, and NOx) and their anticipated effects. Provide any available forecasts of emission reductions from a baseline of existing travel demand distribution by mode, for the first, fifth, and tenth years of full operation *(provide supporting documentation if available).*
- Any expected energy and oil savings from traffic diversion from other modes and changes in the sources of energy for transportation. Provide any available information on changes from the baseline of the existing travel demand distribution by mode, for the first, fifth, and tenth years of full operation (*provide supporting documentation if available*).
- Use of green methods and technologies. Address green building design, "Leadership in Environmental and Energy Design" building design standards, green manufacturing methods, energy efficient rail equipment, and/or other environmentally-friendly approaches.

The Piedmont Corridor and 4th Frequency Corridor Program would improve environmental quality, energy efficiency and contribute toward reducing the Nation's dependence on oil as summarized below.

Within the U S, transportation is the largest source of greenhouse gas (GHG) emissions after electricity generation. The NCDOT recognizes the importance that rail transportation can play in reducing GHG emissions and improving environmental quality, as rail transportation offers important environmental advantages due to its inherent energy and infrastructure efficiencies, as well as its potential to facilitate sustainable, compact transit-oriented development.

The 4th Frequency would shift travel from automobiles to intercity passenger rail. The associated environmental benefits include reduced GHG emissions and fuel consumption. Traveling by intercity rail is a greener travel option, per passenger mile, than traveling either by car, bus, or airplane. For example, the average carbon dioxide (CO2) emissions per passenger mile travelling by rail are 0.18 kilogram (kg), compared with 0.21 kg for car travel and 0.35 kg for air travel (Carbonfund.org, 2007).

Projected reductions in emissions from reduced automobile travel diverted to passenger rail would be realized as a result of the project as summarized in the table below.

Estimated Emissions Reductions in Tons/Year

| Key Emissions Variable | First full year of operations (2011) | Fifth full year of operations (2015) | Tenth full year of operations (2020) |
|---|---|---|---|
| CO | 52,434 | 50,339 | 52,738 |
| CO2 | 1,859 | 2,113 | 2,424 |
| VOC | 2,670 | 2,244 | 1,760 |
| NOx | 4,257 | 2,977 | 1,916 |
| PM2.5 | 65 | 52 | 42 |
| PM10 | 109 | 99 | 91 |

Within the project area several counties are classified as Nonattainment for air quality. Davidson and Guilford counties are currently nonattainment for PM 2.5. Carabus, Mecklenburg and Rowan counties are currently nonattainment for O3. The estimated emissions reductions from reduced automobile travel diverted to passenger rail realized as a result of the project would contribute towards improving air quality in the project area counties.

With regard to potential energy and oil savings, intercity passenger rail consumes 2,586 British thermal units (BTUs) per passenger mile as compared to 3,514 BTUs for personal cars, 3,101 BTUs for airplanes and 4,315 BTUs for buses (DOE, 2009). Thus the project is anticipated to result in energy and oil savings over the no build condition, assisting in reducing the Nation's dependence on domestic and foreign oil.

Leadership in Environmental and Energy Design (LEED) would be implemented for the construction of the proposed stations and associated buildings. The NCDOT would work with each host city to meet the requirements needed to achieve the LEED certified level at a minimum. As a result, the NCDOT would strive to maximize debris diverted from landfills, increase the use of locally manufactured products, reuse or recycle materials and design and construct energy efficient buildings and stations.

Reduction in CO2 is critical for NC. Currently, the residents of Durham emit greater than 15% more GHG than the average U.S citizen. In comparison, New York City residents emit an average of 66% less than the national per capita average. (1) Urban form, i.e. land use and density, are critical in this reduction. Intercity passenger rail is a strong contributor to compact urban form.

NC has also created voluntary programs that provide incentives for emissions reductions. The NC Division of Air Quality offers Mobile Source Emissions Reduction grants. This program began in 1995, when the NC general Assembly passed Clean Air Legislation providing 1/64 of a cent of each gallon of gasoline for emissions reduction grants. The goal of 2008 grants was to reduce emissions from diesel engines, particularly VOC and NOX which contribute to the formation of ozone.

An innovative concept in which NC is an active participant, and which adds benefits to the Piedmont Corridor, is that of entering into agreements and State partnerships with fellow SESHR states; Va., S C, Ga. and also Florida to provide a seamless transition for multi-state environmental and design documentation related to HSIPR – improving efficiency and effectiveness.

Additionally, NCDOT has incorporated both equipment refurbishing and new locomotive purchases as key elements necessary to progress the 4th Freq and attain the goals of enhancing the environment, and improving operational efficiency making modifications to meet or exceed FRA and APTA regulations.

In conjunction with the Piedmont Corridor Projects, NCDOT, in partnership with NC State University, USEPA, USDOT-FRA, has been engaged in an ongoing locomotive emissions research and alternative fuel analysis project. This project involves

extensive testing to determine optimum emissions on ultra low sulfur diesel fuel.

"The technical literature confirms what common sense dictates – people drive less in places with rich transportation choices. The empirical evidence shows that a typical resident of a traditional, walkable neighborhood emits significantly less transportation GHG emissions than typical auto-oriented development – 30 % lower on avg. For example, there is 40 % lower VMT in Chapel Hill, NC's Southern Village and 59 % lower in Atlanta's Atlantic Station development than the regional avg."(2)

(1) ICLEI Energy Services. 2007. Greenhouse gas and criteria air pollutant emissions inventory and local action plan for emission reductions <http://www.durhamnc.gov/ghg/pdf/ghg_lap_full_report.pdf>.

(2) Ewing, Reid, Keith Bartholomew, Steve Winkelman, Jerry Walters and Don Chen, 'Growing Cooler :The Evidence on Urban Development and Climate Change, Urban Land Institute, 2008.

**(4) Livable Communities Corridor Program Benefits Narrative.** (*For more information, see Section 5.1.1.3 of the HSIPR Guidance, Livable Communities). Please limit response to 3,000 characters.*

How will the Corridor Program foster Livable Communities? Address the following:

- Integration with existing high density, livable development: Provide specific examples, such as (a) central business districts with walking/biking and (b) public transportation distribution networks with transit-oriented development.
- Development of intermodal stations: Describe such features as direct transfers to other modes (both intercity passenger transport and local transit).

NCDOT's Mission, "Connecting people and places in North Carolina – safely and efficiently, with accountability and environmental sensitivity" directly relates to multimodal connectivity which, in itself, plays a large part in support of sustainable and "livable communities'. Connectivity provides a seamless transportation experience and is a critical component in NCDOTs mission. As passenger rail service accessibility and reliability in NC and along SEHSR matures, and as energy costs rise, multi-modal connectivity will become even more important in establishing and sustaining livable communities and enhanced quality of life for NC residents and visitors.

The NC Station restoration program has been a tremendous success. Stations statewide are in the process of being restored or have been restored and upgraded and have become thriving epicenters of their communities. As centers of their communities, these stations also serve as intermodal hubs providing seamless connectivity to the local area. In High Point, the local Transit system, HiTran, has 12 fixed routes, each of which uses the Broad Avenue Terminal which is located 200 feet away from the train station and is accessible via a covered pedestrian bridge over the tracks. Burlington is currently served by a County transit system via appointments with the train station as one destination point.

Involving community volunteers into the passenger rail program has also contributed greatly to North Carolina's integration of the community and the daily lives of the people it serves into its the program. One such example is that of the "Train Host Program" whereby more than 120 volunteers from across the state serve as good will ambassadors for North Carolina's Piedmont and Carolinian services. These Train Hosts volunteer their time to ride the trains to assist passengers, promote passenger services and answer questions about the route, ground transportation and area attractions. These volunteers bring the community to the train.

NCDOT has also adopted a "Complete Streets" policy (see application attachment) where all grade separations will have sidewalks to facilitate bicycle/pedestrian movement.

An innovative concept known as the "parallel trail" is a separate project, parallel to and outside of the rail right of way; but within the Piedmont Corridor. As such, all environmental work being conducted for the rail component is available for evaluation of the trail concept, thereby "clearing" it environmentally for funding. The 116-mile recreational trails expected to become part of the East Coast Greenway, running from Maine to Florida and could provide additional "value added" benefits to the communities all along the corridor. Such an innovative concept – will continue the efforts of NC and its partners along the corridor to improve the environment and enhance the overall quality of life and promote livable communities throughout the region

# E. Application Success Factors

**(1) Project Management Approach and Applicant Qualifications Narrative.** *Please provide separate responses to each of the following. Additional information on program management is provided in Section 5.1.2.1 of the HSIPR Guidance, Project Management.*

**1A. Applicant qualifications.**

Management experience: Does the applicant have experience in managing rail investments and Corridor Programs of a similar size and scope to the one proposed in this application?

☒ Yes - Briefly describe experience (brief project(s) overview, dates)
☐ No- Briefly describe expected plan to build technical and managerial capacity. Provide reference to Project Management Plan.

*Please limit response to 3,000 characters.*

Since 2001, NC has invested $100 million in grade crossing improvements, $47 million in track improvements, and $64 million in station improvements with additional ongoing programs budgeted for $174 million in state funding.

North Carolina Railroad (NCRR) owns 317 miles of track from Morehead City, NC to Charlotte, leased for Norfolk Southern freight services. NS maintains it, including for passenger services up to 90MPH. NCRR's financial situation is strong, with no debt, and revenue exceeding $20 million annually. NCDOT views the interim expenditures as an investment in the future to obtain in a timely way the necessary equipment for full operations.

NCDOT has an extensive record of successfully planning, designing, constructing and operating major rail projects. The state has made capital and operating investments in rail service since it began supporting Amtrak service in 1994.

Examples include:

- North Carolina Railroad Improvement Project (NCRRIP) - The NCDOT is investing state and federal funds to upgrade tracks and signals in the NCRR corridor. The program includes major track and signal work totaling over $150 million. Work on NCRRIP began in 2001 and 9 projects totaling over $30 million have been completed.

- Global TransPark GTP is a large industrial site in Eastern NC. NCDOT is constructing 5.8 miles of new track, including a railway bridge and 10 roadway crossings, to provide rail access for a major manufacturing facility. NCDOT has adopted an ultra-expedited approach to plan, design and construct the line in 3 years. Environmental documentation and FD are being developed concurrently and construction is expected to begin in early 2010, 16 months after project initiation.

- Equipment Procurement & Rehabilitation - NCDOT procures and refurbishes rail locomotives and passenger cars. NCDOT writes the specifications, solicits proposals, awards contracts, manages the work and inspects and tests the vehicles for final acceptance.

- Equipment Maintenance - NCDOT owns the trains used for the Piedmont service. This equipment is maintained at NCDOT maintenance facilities. NCDOT contracts with Herzog to maintain their rail equipment. The NCDOT Rail Operations Manager oversees the equipment maintenance functions performed by the contractor.

- Stations - NCDOT is upgrading all of the stations in the state. Sixteen stations have been renovated and 2 new stations have been built. NCDOT works with the localities to develop attractive station facilities that provide a welcoming gateway to the rail system and serve as key focal points in the communities.

Ultimately, SEHSR will be an extension of existing NC services linking them to Amtrak's NEC HSR services. Convenience, reliability and travel time are three main ingredients for its success. Eventually, SEHSR plus conventional train revenues are expected to handily exceed O&M costs for all state-supported services, per forecasts made by Amtrak.

**1B. Describe the organizational approach for the different Corridor Program stages included in this application (e.g.,**

**final design, construction), including the roles of staff, contractors and stakeholders in implementing the Corridor Program. For construction activities, provide relevant information on work forces, including railroad contractors and grantee contractors.** *Please limit response to 3,000 characters.*

NCDOT is responsible for planning and implementing all modes of transportation in the state. NCDOT was reorganized in 2008 to align its business units along functional lines to make the agency more strategically oriented, accountable, efficient and effective in implementing transportation projects. This new alignment eliminates redundancies and de-layers the organization and focuses the agency on outcomes-based performance.

The Rail Division is responsible for rail programs, including the planning, implementation and operation of passenger service, station improvements, grade crossing safety, industrial access and corridor preservation. The Division has extensive experience in delivering projects both by using its own staff and by hiring and managing contractors.

The Rail Division has several rail consulting firms under on-call contracts to ensure availability of specialized rail resources. Contractors are available to perform specialized planning and performance analysis studies, final design engineering and construction management.

NCDOT will utilize professional engineering contractor services for FD work. In some cases NCDOT may contract directly with the railroad owners and they will use their own forces to perform the FD work. In either case, NCDOT staff will manage these consultant contracts to ensure that the work is done to meet quality standards on budget and on schedule.

Different project delivery approaches are used to construct projects, depending on the project type. For work on active railroads, NCDOT will contract directly with the owning railroads which will do the work either with their own forces or through force accounts. For projects that are adjacent to, or completely off of an active railroad, NCDOT will procure and manage contractors. Coordination with key stakeholders, including railroads, localities and adjacent property owners is a critical role conducted by NCDOT staff on all projects.

**1C. Does any part of the Corridor Program require approval by FRA of a waiver petition from a Federal railroad safety regulation? (Reference to or discussion of potential waiver petitions will not affect FRA's handling or disposition of such waiver petitions).**

☐ YES- If yes, explain and provide a timeline for obtaining the waivers
☒ NO
*Please limit response to 1,500 characters.*

**1D. Provide a preliminary self-assessment of Corridor Program uncertainties and mitigation strategies (consider funding risk, schedule risk and stakeholder risk). Describe any areas in which the applicant could use technical assistance, best practices, advice or support from others, including FRA.** *Please limit response to 2,000 characters.*

In addition to funding availability, potential risks include:

- Equipment – NC DOT has managed several highly successful locomotive and coach rebuilds. Meticulous attention to contract development, monitoring, testing and acceptance provide the needed tools to conduct a successful procurement. Networking with other states will allow careful consideration of the financial benefits of economies of scale.

- Material Prices – Volatility in material prices is one aspect of a long-term recession. A mature understanding of material costs and provision of adequate contingencies will contribute to resolving changes.

- Standards – Because the project is based on all existing FRA requirements and industry best practices, success, timing, and cost are not predicated on waivers. This reduces risk.

- Construction Practices – Over the past decade NCDOT has partnered with host railroads to develop and deliver an on-going series of rail construction projects. The plan calls for construction by the host railroad and its subcontractors, augmented by contractors and private engineering firms through contracts with NCDOT. Railroad force accounts and

continuing contracts will be used. This will allow prompt purchase of material and mobilization of labor. Long lead time components will be specified and ordered prior to construction, such as turnouts and signal components.

Recent experience has shown increases in the cost of delivering rail projects, particularly in the area of materials and supplies. NCDOT mitigates this risk by using conservative budget estimates, reasonable contingency limits, and lump sum or not to exceed contracts with established completion dates. The state has demonstrated through its long history of funding rail capital and operating projects its willingness to provide adequate funding to ensure project completion.

**(2) Stakeholder Agreements Narrative.** *Additional information on Stakeholder Agreements is provided in Section 5.1.2.2 of the HSIPR Guidance.*

Under each of the following categories, describe the applicant's progress in developing requisite agreements with key stakeholders. In addition to describing the current status of any such agreements, address the applicant's experience in framing and implementing similar agreements, as well as the specific topics pertaining to each category.

**2A. Ownership Agreements** – Describe how agreements will be finalized with railroad infrastructure owners listed in the "Right-of-Way Ownership" and "Service Description" tables in Section B. If appropriate, "owner(s)" may also include operator(s) under trackage rights or lease agreements. Describe how the parties will agree on Corridor Program design and scope, benefits, implementation, use of Corridor Program property, maintenance, scheduling, dispatching and operating slots, Corridor Program ownership and disposition, statutory conditions and other essential topics. Summarize the status and substance of any ongoing or completed agreements. *Please limit response to 3,000 characters.*

NCDOT staff has negotiated very successfully with the operating railroads over the past 20 years or more. This success has been based on a thorough understanding of the issues on both sides of the table and the reality of the negotiation process. Our understanding of operating, financing and maintenance issues, among others, is augmented where necessary by experienced consultants that have additional experience dealing with typical and extraordinary railroad issues that are encountered with every project.

NCDOT has solid base agreements in place that deal with the most standard issues among the parties and have a number of site-specific, executed agreements in place that provide for short-term and longer-term items, as well as provide for ways to deal with issues that can develop over time that were not originally anticipated.

North Carolina further invested $71 million for outstanding shares of the NC Railroad. The state owns 100% of the shares, which promote economic development and to ensure access to the railroad for passenger trains. The master agreement covers commuter, intercity, and high speed passenger rail service.

NCRR and NS entered into a master agreement to provide for NS' continued operation on the NCRR in July 1999, thereby granting NS exclusive freight trackage rights over the lines and properties of NCRR. This agreement is for a period of 15 years. The master agreement also provides for the prioritization of passenger rail service on the NCRR expressly permitting the operation of trains at speeds up to 90mph.

NCDOT has a master agreement with CSXT to establish terms, conditions and responsibilities for designing and constructing passenger projects on CSXT-owned rail corridor.

NC has a contract agreement with Herzog Company to maintain their equipment to FRA standards.

**2B. Operating Agreements** – Describe the status and contents of agreements with the intended operator(s) listed in "Services" table in the Application Overview section above. Address Corridor Program benefits, operation and financial conditions, statutory conditions, and other relevant topics. *Please limit response to 3,000 characters.*

Amtrak: NCDOT has a contractual agreement with the Amtrak to subsidize the operations of the Carolinian and Piedmont trains. Under this agreement, which is renewed annually, NCDOT is responsible for covering all of the losses incurred in the operation of these trains. NCDOT makes payments to Amtrak one month in advance, and quarterly adjustments are made to reflect actual revenues and fuel costs. As part of the agreement with Amtrak, NCDOT owns and maintains the rail equipment used to operate the Piedmont service between Charlotte and Raleigh. NCDOT has a fleet of refurbished passenger coaches and locomotives which it stores and maintains in Capital Yard in Raleigh.

Norfolk Southern Railway: On July 27, 1999, NCRR and NS entered into a master agreement to provide for NS's continued operations on the NCRR. This agreement gives NS the exclusive right to conduct freight operations over the lines and properties of NCRR including performance of local freight service. NCRR also granted to NS such operating rights on NCRR ROW as will permit continuation of the existing operations of Amtrak service on NCRR. The master agreement has a length of 15 years, with two additional 15 year option periods.

The master agreement provides for prioritization of passenger service in the NCRR corridor. The agreement requires NS to give priority to scheduled passenger trains over freight trains and provides for a procedure to resolve any disputes about how trains are dispatched. The master agreement expressly permits the operation of trains at speeds up to 90 mph. Trains can operate at speeds faster than 90 mph only if they are on dedicated separate infrastructure on the right of way and dispatched and maintained by a party other than NS.

If any passenger service or any third-party passenger operations are added to the NCRR line, the passenger service operator or other third-party passenger operator is required to make and pay for capital improvements on the line adequate to assure that none of NS's capacity, either the capacity NS is currently using or unused capacity that is available to NS, is diminished or disadvantaged.

CSXT: NCDOT has recently developed a master agreement with CSXT which establishes terms, conditions, and responsibilities for designing and constructing passenger rail projects on CSXT.

The master agreements also provide for the implementation of NCDOT's Rail Impact program, a package of improvements designed to increase passenger speeds, while not adversely affecting freight operations.

**2C. Selection of Operator** – If the proposed operator railroad was not selected competitively, please provide a justification for its selection, including why the selected operator is most qualified, taking into account cost and other quantitative and qualitative factors, and why the selection of the proposed operator will not needlessly increase the cost of the Corridor Program or of the operations that it enables or improves. *Please limit response to 3,000 characters.*

The State of North Carolina has been financially supporting Amtrak service since 1990. Amtrak currently operates three frequencies in the Piedmont Corridor, thus making Amtrak the most efficient choice in providing additional passenger rail service. The State intends to continue to use Amtrak as its HSIPR operator.

As additional service frequencies are offered, Amtrak expects NCDOT to obtain the requisite equipment for additional service. NCDOT intends to acquire the additional motive power, rolling stock, and construct the maintenance and repair facilities necessary to accommodate the additional service.

**2D**. **Other Stakeholder Agreements** – Provide relevant information on other stakeholder agreements including State and local governments. *Please limit response to 3,000 characters.*

NCDOT has endeavored to work with all stakeholders who are affected by the introduction of HSIPR. These include: communities owning rail stations, landowners, transit systems, and businesses.

In Charlotte, NCDOT has been working with the city, Charlotte Area Transit System (CATS), and area businesses that are impacted by the ACWR relocation project and the Charlotte Gateway Station project. Charlotte has signed an MOU supporting the roadway closures part of CRISP. With regard to CATS, there is a presentation on October 12 which should result in a Resolution of Support for CRISP.

CATS is very supportive of the CRISP program as it is designed to benefit the introduction of their commuter rail efforts as well as their existing bus service. The City of Charlotte or NCDOT owns the area roads and supports grade separations where they are proposed. The city wholeheartedly supports construction of the Charlotte Gateway station.

Station ownership is mixed with most controlled by the respective city or the state. In all instances license agreements exist between the various parties to permit the existing use and future station improvements. As part of its station program, NCDOT negotiates agreements with localities that govern construction or renovation. These agreements establish partnerships for the capital phase of the projects permitting the state and locality to work together to complete station construction and renovations. The agreements establish the terms for turning over the station to the municipality for ongoing management, operation and maintenance once construction is complete.

Across the corridor NCDOT works with municipalities or other property owners impacted by rail improvements and subsequently enters into a stakeholder agreement. If an agreement is unable to be reached, NCDOT has condemnation

powers.

SEHSR Corridor states (VA, NC, GA, FL, SC) executed an MOU to initiate studies on the corridor in 8/1994. NC agreed to take the lead role with information and financial support coming from the other states. This MOU has served as a foundation for work that has led to a ROD, issued by FRA on 10/2002.

North Carolina and Virginia both passed legislation in 2004 to create the Virginia - North Carolina Interstate High-Speed Rail Compact. The compact consists of five members from VA and five members from NC whos purpose it is to study, coordinate efforts, advocate and secure funding and resources for HSIRP services in the southeast.

**2E. Agreements with operators of other types of rail service -** Are benefits to non-intercity passenger rail services (e.g., commuter, freight) foreseen? Describe any cost sharing agreements with operators of non-intercity passenger rail service (e.g., commuter, freight). *Please limit response to 3,000 characters.*

As the corridor is improved to accommodate additional high speed passenger train frequencies, capacity on the corridor will increase which will benefit both freight and passenger train operations. Benefits include improved on time performance, safety, efficiency and improved operating speeds.

NCDOT is currently in active discussions with the railroad owners seeking cost sharing agreements; however, the railroads view the capacity improvements as necessary measures to provide HSIRP service and do not consider the improvements to be critical to their network or operations.

Per NCGS directive 136-20, the NCDOT Secretary of Transportation is empowered to assess the net benefits of constructing grade separations and assessing railroad companies up to 10 percent of the project's cost. NCDOT cost-shares with freight railroads on a case by case basis. Where there is a project benefit to both the freight railroad and to NCDOT's rail passenger program, NCDOT endeavors to negotiate cost-sharing. This is accomplished by NCDOT and the benefitting railroad(s) entering into a project agreement which commits the railroad(s) to cost sharing contributions and in-kind services. NCDOT intends to continue using project agreements, more specifically, master agreements and addendums/supplementals, in this regard.

As mentioned in E2D above, CATS is supportive of NCDOT's HSIPR initiative. CATS plans to use a portion of the NCRR corridor for commuter rail service. Cost sharing discussions between NCDOT, NCRR and CATS have occurred and are ongoing.

**(3) Financial Information**

**3A. Capital Funding Sources.** Please provide the following information about your funding sources (if applicable).

| Non FRA Funding Sources | New or Existing Funding Source? | Status of Funding[4] | Type of Funds | Dollar Amount (millions of $ YOE) | % of Program Cost | Describe uploaded supporting documentation to help FRA verify funding source |
|---|---|---|---|---|---|---|
| Other Federal | Existing | Committed | Capital | 22.2 | 4.1 | See application attachment |
| NC State Funds | Existing | Committed | Capital | 12.3 | 2.4 | See application attachment |
| Private | New | Committed | Capital | 3.0 | 0.6 | See application attachment |
| | New | Committed | | | | |

[4] Reference Notes: The following categories and definitions are applied to funding sources:
**Committed:** Committed sources are programmed capital funds that have all the necessary approvals (e.g. legislative referendum) to be used to fund the proposed phase without any additional action. These capital funds have been formally programmed in the State Rail Plan and/or any related local, regional, or State Capital Investment Program CIP or appropriation. Examples include dedicated or approved tax revenues, State capital grants that have been approved by all required legislative bodies, cash reserves that have been dedicated to the proposed phase, and additional debt capacity that requires no further approvals and has been dedicated by the sponsoring agency to the proposed phase.
**Budgeted**: This category is for funds that have been budgeted and/or programmed for use on the proposed phase but remain uncommitted, i.e., the funds have not yet received statutory approval. Examples include debt financing in an agency-adopted CIP that has yet to be committed in their near future. Funds will be classified as budgeted where available funding cannot be committed until the grant is executed, or due to the local practices outside of the phase sponsor's control (e.g., the phase development schedule extends beyond the State Rail Program period).
**Planned:** This category is for funds that are identified and have a reasonable chance of being committed, but are neither committed nor budgeted. Examples include proposed sources that require a scheduled referendum, requests for State/local capital grants, and proposed debt financing that has not yet been adopted in the agency's CIP.

**3B. Capital Investment Financial Agreements.** Describe any cost sharing contribution the applicant intends to make towards the Corridor Program, including its source, level of commitment, and agreement to cover cost increases or financial shortfalls. Describe the status and nature of any agreements between funding stakeholders that would provide for the applicant's proposed match, including the responsibilities and guarantees undertaken by the parties. Provide a brief description of any in-kind matches that are expected. *Please limit response to 3,000 characters.*

NCDOT has had great success in undertaking projects with the railroads by entering into project agreements, which commit the railroads to cost sharing contributions and in-kind services. NCDOT intends to continue using project agreements, more specifically, master agreements and addendums/supplementals, in this regard. In-kind services such as flagging, engineering design and oversight, etc. may be among the contributions from the railroad. North Carolina will provide in-kind services, including project management and oversight, administrative support, and access to the NCRR.

Concerning project overruns, NCDOT intends to commit to conservative budgeting and lump sum agreements with contractors, thus minimizing potential financial shortfalls. The state has demonstrated through its long history of funding rail capital and operating projects its willingness to provide adequate funding to cover any project shortfalls.

Per NCGS directive 136-20, the NCDOT Secretary of Transportation is empowered to assess the net benefits of constructing grade separations and assessing railroad companies up to 10 percent of the project's cost. NCDOT cost-shares with freight railroads on a case by case basis. Where there is a project benefit to both the freight railroad and to NCDOT's rail passenger program, NCDOT endeavors to negotiate cost-sharing. This is accomplished by NCDOT and the benefitting railroad(s) entering into a project agreement which commits the railroad(s) to cost sharing contributions and in-kind services. NCDOT intends to continue using project agreements, more specifically, master agreements and addendums/supplementals, in this regard

In its prioritized capital plan, NCDOT identifies all matching funds proposed to be used for each project. NCDOT and NCRR have made contributions to developing this program to the best of their ability. NCDOT will continue to provide administrative oversight of the program and NCRR is required by statute to reinvest in its railroad infrastructure.

**3C. Corridor Program Sustainability and Operating Financial Plan.**

Please report on the Applicant's projections of future financial requirements to sustain the service by completing the table below (in YOE dollars) and answering the following question. Describe the source, nature, share, and likelihood of each identified funding source that will enable the State to satisfy its projected financial support requirements to sustain the operation of the service addressed in this Corridor Program. *Please limit response to 2,000 characters.*

NC owns the NCRR, which is leased to NS, which in turn maintains it. NCRR's financial position is strong, with no debt and $20 million in rental income. NCDOT's Operating Financial Plan (OFP) in its Service Development Plan shows the fractional passenger maintenance expense and the capital asset renewal charge (CARC) for the 175 miles used by passenger trains. Since 2001, NC has invested $200 Million in rail improvements, with future programs budgeted at $174 Million.

Farebox revenues cover about 60% of current O&M expenses. As a 4th and 5th frequency are added, fares will cover about 50% of O&M expenses. Some CMAQ funds will be used to offset operating losses. NCDOT views its budgetary support as an investment to build a user- and environmentally-friendly passenger rail system.

SEHSR augments and extends NC services, linking them to Amtrak's NEC. Frequency, convenience, speed and reliability are key variables of the Amtrak Model used by NCDOT to forecast ridership and revenue. When SEHSR comes online, total revenues are expected to exceed O&M costs for all State supported services using conservative yields per passenger mile.

In addition:

- NCDOT will fund operating shortfalls. NCDOT has statutory authority to use State funds to support rail development and a mandate to increase the proportion of the State transportation budget devoted to passenger rail.

- NCDOT has entered into MOU's with NS and CSXT to accomplish mutually beneficial "matches".

• NCDOT can enter into PPP's. Station developments are particularly amenable to these, notably 32 acres that make up the Charlotte Gateway Station.

• Additionally, the OFP shows a significant positive earnings before interest, taxes, depreciation and amortization, indicating the possibility for a PPP concerning operations.

NC recently sold its second series of Garvee bonds rated AA by Fitch and S&P and As3 by Moodys, allowing NC to capitalize on future transportation revenue to fund current investment.

**Note: Please enter supporting projections in the Track 2 Application Supporting Forms, and submit related funding agreements or other documents with the Supporting Materials described in Part G of this Track 2 Application. The numbers entered in this table must agree with analogous numbers in the Supporting Forms.**

| **Funding Requirement (as identified on the Supporting Form)** | | **Projected Totals by Year ($ Millions Year Of Expenditure (YOE)* Dollars - One Decimal)** | | |
|---|---|---|---|---|
| | **Baseline Actual-FY 2009 Levels** (State operating subsidy for FY 2009 if existing service) | **First full year of operation** | **Fifth full year of operation** | **Tenth full year of operation** |
| **Indicate the Fiscal Year** | 2009 | 2014 | 2019 | 2024 |
| Surplus/deficit after capital asset renewal charge[5] | | (7.7) | (8.0) | (8.3) |
| Total Non-FRA sources of funds applicable to the surplus/deficit after capital asset renewal | | 7.7 | 8.0 | 8.3 |
| Funding Requirements for which Available Funds Are Not Identified | | 0 | 0 | 0 |

* Year-of-Expenditure (YOE) dollars are inflated from the base year. Applicants should include their proposed inflation assumptions (and methodology, if applicable) in the supporting documentation.

Note: Data reported in this section should be consistent with the information provided in the Operating and Financial Performance supporting form for this application.

[5] The "capital asset renewal charge" is an annualized provision for **future** asset replacement, refurbishment, and expansion. It is the annualized equivalent to the "continuing investments" defined in the FRA's Commercial Feasibility Study of high-speed ground transportation (*High-Speed Ground Transportation for America*, September 1997, available at http://www.fra.dot.gov/us/content/515 (see pages 5-6 and 5-7).

**(4) Financial Management Capacity and Capability** – Provide audit results and/or other evidence to describe applicant capability to absorb potential cost overruns, financial shortfalls identified in 3C, or financial responsibility for potential disposition requirements (include as supporting documentation as needed). Provide statutory references/ legal authority to build and oversee a rail capital investment. *Please limit response to 3,000 characters.*

Since 2001, NC has invested $100 million in grade crossing improvements, $47 million in track improvements, and $64 million in station improvements with additional ongoing programs budgeted for $174 million in state funding.

North Carolina Railroad (NCRR) owns 317 miles of track from Morehead City, NC to Charlotte, leased for Norfolk Southern freight services. NS maintains it, including for passenger services up to 90mph. NCRR's financial situation is strong, with no debt, and revenue exceeding $20 million annually.

NC-supported trains do not yet cover their O&M expenses. As a 3rd and 4th Piedmont frequency are added, fares will ultimately cover about 67% of O&M expenses. Meanwhile, NCDOT views the interim expenditures as an investment in the future to obtain in a timely way the necessary equipment for full operations.

Ultimately, SEHSR will be an extension of existing NC services linking them to Amtrak's NEC HSR services. Convenience, reliability and travel time are three main ingredients for its success. Eventually, SEHSR plus conventional train revenues are expected to handily exceed O&M costs for all state-supported services, per forecasts made by Amtrak

**(5) Timeliness of Corridor Program Completion** – Provide the following information on the dates and duration of key activities, if applicable. For more information, see Section 5.1.3.1 of the HSIPR Guidance, Timeliness of Corridor Program Completion.

| | |
|---|---|
| Final Design Duration: | 27 months |
| Construction Duration: | 60 months |
| Rolling Stock Acquisition/Refurbishment Duration: | 18 months |
| Service Operations Start date: | 10/2013 (mm/yyyy) |

**(6) If applicable, describe how the Corridor Program will promote domestic manufacturing, supply and industrial development, including furthering United States-based equipment manufacturing and supply industries**. *Please limit response to 1,500 characters.*

In general, elements to be constructed now and in the future will generate significant growth in manufacturing supply companies and industrial development across the country. As the service is implemented and ridership grows – substantial growth in equipment manufacturing will also result. In the short term, the elements, as described in this application, will involve a significant variety of materials and other resources. Equipment and materials such as frogs, signal equipment, plates, switches and rail will be purchased from U.S. vendors and supply industries to the greatest extent possible.

The 4th Frequency Application entails elements in which equipment purchase and/or upgrades will be involved. Seven cars would be rebuilt as one of the 4th Frequency Elements. The Delaware Car Company has won the three previous awards. They are located in Wilmington, Delaware. Company officials have suggested that they would hire six additional workers for this project. A high percentage of components manufactured or sold by North Carolina companies are used in the refurbishment of the cars. Some examples of the upgrades are; lateral breaking, passenger safety and ride quality items. Refurbished cars are also cost effective – at less than half the cost of new and half the production time.

**(7) If applicable, describe how the Corridor Program will help develop United States professional railroad engineering, operating, planning and management capacity needed for sustainable IPR development in the United States.** *Please limit response to 1,500 characters.*

The development of the SEHSR Piedmont Corridor 4th Frequency will lead to the need for additional railroad technicians, civil engineers trained in rail disciplines as well as planners, rail system operators and managers. There is a nationwide shortage within the State DOTs and within the industry itself. Universities are not focusing on rail studies and have not done so in years. Institutional barriers are evident in civil service hiring practices among DOTs – states will need technical support. The American Association of State Highways and Transportation Officials (AASHTO) through its Standing

Committee on Rail Transportation (SCORT), chaired by NCDOT's Secretary of Transportation, Gene Conti, is undertaking an effort to develop a national program (working with FRA) to provide states with technical support to begin to address the many workforce development challenges they face today and to work towards resolving capacity issues the states and the industry will contend with as they prepare, in partnership, to deliver the most robust rail program in the nation's history. This October, with the guidance of SCORT, AASHTO expects to amend its 5 year Strategic Plan to include 2 Goals related to this issue: 1.Promote the development of a National High Speed and Intercity Passenger Rail Network and 2. Develop technical services to support state rail programs for freight and high speed and intercity passenger rail. .

*Corridor Program Name:* NC T2.2 - SEHSR - Piedmont 4th Frequency *Date of Submission:* 10/02/09 *Version Number:* C

# F. Additional Information

**(1) Please provide any additional information, comments, or clarifications and indicate the section and question number that you are addressing** (e.g., Section E, Question 1B). *This section is optional.*

B3: It is NCDOT's policy to aggressively seek match dollars to leverage all federal funds including the ARRA dollars we are requesting currently. NCDOT will continue to actively pursue, state, local and private match in this vein. For example, NCDOT just completed negotiations with the NCRR whereby NCRR has committed $13 million in additional match to complete the double-tracking of the NS mainline (the P Line) between Greensboro and Charlotte. This match commitment was obtained on 10/1/2009 after the production deadline for completing the FRA required financial forms for this application.

*Corridor Program Name:* NC T2.2 - SEHSR - Piedmont 4th Frequency *Date of Submission:* 10/02/09 *Version Number:* C

# G. Summary of Application Materials

Note: In addition to the requirements listed below, applicants must comply with all requirements set forth in the HSIPR Guidance and all applicable Federal laws and regulations, including the American Recovery and Reinvestment Act of 2009 (ARRA) and the Passenger Rail Investment and Improvement Act of 2008 (PRIIA).

| Application Forms | Required for Corridor Programs | Required for Projects [See Note Below] | Reference | Comments |
|---|---|---|---|---|
| ☐ This Application Form | ✓ | | HSIPR Guidance Section 4.3.3.3 | |
| ☐ Corridor Service Overview (Same Corridor Service Overview may be used for multiple applications) | ✓ | | HSIPR Guidance Section 4.3.3.3 | |
| **Supporting Forms** (*Forms are provided by FRA on Grant Solutions and the FRA website*) | **Required for Corridor Programs** | **Required for Projects [See Note Below]** | **Reference** | **Comments** |
| ☐ General Info | ✓ | ✓ | HSIPR Guidance Section 4.3.5 | FRA Excel Form |
| ☐ Detailed Capital Cost Budget | ✓ | ✓ | HSIPR Guidance Section 4.3.5 | FRA Excel Form |
| ☐ Annual Capital Cost Budget | ✓ | ✓ | HSIPR Guidance Section 4.3.5 | FRA Excel Form |
| ☐ Operating and Financial Performance and Any Related Financial Forms | ✓ | | HSIPR Guidance Section 5.3.5 | FRA Excel Form |
| ☐ Program or Project Schedule | ✓ | ✓ | HSIPR Guidance Section 4.3.5 | FRA Excel Form |

| **Supporting Documents** *(Documents to be generated and provided by the applicant)* | **Required for Corridor Programs** | **Required for Projects [See Note Below]** | **Reference** | **Comments** |
|---|---|---|---|---|
| ☐ Map of Corridor Service | ✓ | | Corridor Service Overview Question B.2 | |
| ☐ Service Development Plan | ✓ | | HSIPR Guidance Section 1.6.2 | |
| ☐ "Service" NEPA | ✓ | | HSIPR Guidance Section 1.6.2 | |
| ☐ Project Management Plan | ✓ | | HSIPR Guidance Section 4.3.3.2 | |
| ☐ "Project" NEPA (Required before obligation of funds) | | ✓ | HSIPR Guidance Section 1.6.2 | |
| ☐ PE Materials | ✓ | ✓ | HSIPR Guidance Section 1.6.2 | |
| ☐ Stakeholder Agreements | ✓ | ✓ | HSIPR Guidance Section 4.3.3.2 | |
| ☐ Financial Plan | ✓ | ✓ | HSIPR Guidance Section 4.3.3.2 | |
| ☐ Job Creation | ✓ | ✓ | HSIPR Guidance Section 1.6.2 | |

| **Standard Forms** *(Can be found on the FRA website and www.forms.gov)* | **Required for Corridor Programs** | **Required for Projects [See Note Below]** | **Reference** | **Comments** |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| ☐ SF 424: Application for Federal Assistance | ✓ | | HSIPR Guidance Section 4.3.3.3 | Form |
| ☐ SF 424C: Budget Information-Construction | ✓ | | HSIPR Guidance Section 4.3.3.3 | Form |
| ☐ SF 424D: Assurances-Construction | ✓ | | HSIPR Guidance Section 4.3.3.3 | Form |
| ☐ FRA Assurances Document | ✓ | | HSIPR Guidance Section 4.3.3.3 | Form |
| **Note: Items checked under "Corridor Programs" are required at the time of submission of this Track 2 Corridor Programs application. Items checked under "Projects" are optional at the time of submission of this Track 2 Corridor Programs application, but required prior to FD/Construction grant award.** | | | | |

**PRA Public Protection Statement:** Public reporting burden for this information collection is estimated to average 16 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. According to the Paperwork Reduction Act of 1995, a federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with, a collection of information unless it displays a currently valid OMB control number. The valid OMB control number for this information collection is **2130-0583**.