SOUTHEAST CORRIDOR GREENWAY

Planning Level Environmental Analysis and Documentation

Southeast Corridor Greenway

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1. Background

The North Carolina Department of Transportation (NCDOT) and the Virginia Department of Transportation (VDOT) jointly funded planning and environmental analysis for a shared-use path (greenway) in coordination with a portion of the Southeast High Speed Rail (SEHSR) corridor. The goal of the Southeast Corridor Greenway project was to establish purpose and need, identify a preferred alignment, and estimate impacts of that alignment to the human and natural environment. These estimates are based upon environmental study corridor data collected for the SEHSR Tier II Raleigh to Richmond Environmental Impact Statement process.

This Southeast Corridor Greenway Plan details the project findings including: purpose; established need and objectives; the recommended greenway alignment; problem areas and estimated environmental impacts; and estimated construction cost. The information compiled in this plan is intended for use in future, detailed "build" documents prepared under the National Environmental Policy Act (NEPA) and to assist local jurisdictions in applying for grants for greenway construction.

2. Purpose and Need

The purpose of the Southeast Corridor Greenway project is to construct a bicycle and pedestrian shared-use greenway from Burgess, Virginia, to the Neuse River in Wake County, North Carolina, in coordination with the proposed SEHSR corridor.

The established need is to provide a non-motorized transportation corridor to link cities, counties, and the states of Virginia and North Carolina, to enhance a comprehensive regional and statewide transportation system that will support economic development and preserve historic and cultural resources, and to improve the quality of life for residents and visitors.

Specific objectives include:

1) To improve bicycle and pedestrian transportation by providing a shared-use path that can be used for both recreation and commuting.

2) To support and encourage the development of transportation plans that identify bicycle and pedestrian facility improvements as critical local transportation links to the Southeast Corridor Greenway and by extension the proposed high speed rail.

3) To stimulate economic development near the proposed greenway and high speed rail, while preserving historic, cultural, and recreational assets.

3. Report Methodology

The data used in this report were developed for the Richmond to Raleigh Southeast High Speed Rail Tier II Draft Environmental Impact Statement (DEIS). A detailed description of the data collection

efforts and methodology are available for download on the SEHSR DEIS website: http://www.sehsr.org/deis/sehsr_deis_download_files.html

The data from the SEHSR project were analyzed to assess the impacts of this greenway project on resources within its environmental study corridor and the SEHSR project limits.

- **Environmental Study Corridor.** The environmental study corridor encompasses approximately a 500-foot area on either side of the SEHSR project centerline, with variation. This corridor represents the area in which data were collected to support the SEHSR DEIS and is identical to the SEHSR DEIS environmental study corridor. At times, the proposed greenway alignment leaves the environmental study corridor to avoid impacts to private property or other resources. This document does not analyze the impacts associated with the portions of the proposed greenway that are outside of the environmental study corridor. These portions are shown in orange on the maps in Appendices B and E.

- **SEHSR Project Limits.** The SEHSR project limits represent the area that would be disturbed by the rail and road improvements associated with the SEHSR project. At times, the proposed greenway alignment may lie within the SEHSR project limits; however, it would be located outside the proposed rail right-of-way (ROW) for the SEHSR project. The extent of the SEHSR project limits is shown in dark salmon on the maps in Appendices B and E.

Greenway alignments within the study corridor vary from the SEHSR rail alignment in specific areas. The SEHSR rail alignment includes new-location realignments of the former Seaboard Air Line (SAL) and Raleigh Gaston Railroad Corridor (RGRC) track alignments to facilitate higher speeds. In these realignment areas, it is preferable, in some cases, for the greenway trail to follow the old rail alignment.

4. Recommended Greenway Alignment

The design of the greenway seeks to minimize the impact to the natural and built environment. Therefore, it is assumed that a 30-foot greenway "footprint" on a 60-foot ROW will be sufficient for the greenway in most cases. This should provide enough room for the greenway cut/fill slopes, while not interfering with the proposed SEHSR construction limits. It is again noted that the ROW for the rail portion of the SEHSR does not include ROW for the greenway trail. At times, realignments of the rail leave portions of existing, unused SAL/RGRC ROW that may be favorable to reuse as a greenway trail. The existing SAL/RGRC ROW is generally 100 feet wide, with exceptions. Areas identified with potential constraints will be highlighted (e.g., where ROW may be needed) and impacts calculated. Proposed greenway portions outside of the environmental study corridor are noted, but not analyzed as part of this plan. It is anticipated and preferable that the greenway utilize portions of the existing inactive SAL/RGRC ROW that will not be needed for new rail service.

The safety, construction, and design recommendations are based upon the following resources:

- Guide for the Development of Bicycle Facilities by the American Association of State Highway and Transportation Officials (AASHTO, 2012)
- Manual on Uniform Transportation Control Devices for Streets and Highways by the United States Department of Transportation Federal Highway Administration (MUTCD, 2009)
- Designing Sidewalks and Trails for Access Part II of II: Best Practices Design Guide by the Federal Highway Administration and Beneficial Designs, Inc. (FHWA, 2001)
- North Carolina Bicycle Facilities Planning And Design Guidelines, by the North Carolina Department of Transportation, Office of Bicycle and Pedestrian Transportation (NCDOT, 1994)
- Architectural Barriers Act (ABA) Accessibility Guidelines for Outdoor Developed Areas; Proposed Rule by the Architectural and Transportation Barriers Compliance Board (Access Board), 2007
- Other state and local guidelines

It is important to note that the designs included herein are considered high-level planning designs to assess the general footprint of the greenway. The design of "build" alternative(s) in future environmental documents should be used during final design. In that regard, additional and/or updated environmental data may be needed.

Table 1 is a quick reference guide of the technical aspects of the trail design and compares the greenway design elements to the ABA and AASHTO design manuals.

Table 1: Trail Design Guideline Comparison (ABA vs. AASTO)

Feature	SEHSR Greenway Concept Design Guidelines	Accessibility Guidelines for Outdoor Developed Areas; Proposed Rule (ABA, 2007)	Guide for the Development of Bicycle Facilities (AASHTO, 1999)
Surface	Firm and stable, such as concrete or asphalt	Firm and stable	Bicycles need the same firmness and stability as wheelchairs; skaters usually require a smooth, paved surface. Most shared-use paths are paved, although crushed aggregate surfaces are used on some paths.

Feature	SEHSR Greenway Concept Design Guidelines	Accessibility Guidelines for Outdoor Developed Areas; Proposed Rule (ABA, 2007)	Guide for the Development of Bicycle Facilities (AASHTO, 1999)
Running/ Longitudinal Slope	0-5% maximum	1:20 (5%) for any length; 1:12 (8.33%) for up to 200 ft; 1:10 (10%) for up to 30 ft; 1:8 (12.5%) for up to 10 ft; No more than 30% of the total trail length shall exceed 1:12.	Running slopes on shared-use paths should be kept to a minimum; grades greater than 5% are undesirable. Grades steeper than 3% may not be practical for shared-use paths with crushed stone or other unpaved surfaces. Where terrain dictates, grade lengths are recommended as follows: **Grade** / **Length** <5% (<1:20) / Any 5-6% (1:20-16.7) / ≤240 m (800 ft) 7% (1:14.3) / ≤120 m (200 ft) 8% (1:12.5) / ≤90 m (300 ft) 9% (1:11.1) / ≤60 m (200 ft) 10% (1:10) / ≤30 m (100 ft) 11+% (≥1:9.1) / ≤15 m (50 ft)
Cross Slope	2% cross slope (NOT crowned) on paved surfaces for drainage	Cross slope: 1:20 (5%) maximum; exceptions for open drains up to 1:10 (10%)	For drainage, shared-used paths should have a minimum 2% (1:50) cross slope on a paved surface. On unpaved shared-use paths, particular attention should be paid to drainage to avoid erosion. Curves on shared-use paths may require super elevation beyond 2% (1:50) for safety reasons. The Guide suggests limited cross slope for accessibility reasons.
Width (Clear Tread Width)	10 ft trail surface with 2 ft shoulder on both sides (14 ft total)	36 inches (3 ft; 915 mm); exception for 32 inches (815 mm)	Shared-use paths usually require a minimum 3 m (10 ft) width plus a 0.6 m (2 ft) safety buffer on both sides. A 2.4 m (8 ft) width may be allowed in low-use facilities. Posts or bollards installed to restrict motor vehicle traffic should be spaced 1.5 m (5 ft) apart. Posts or bollards should be brightly painted and reflectorized for visibility. When more than one post is used, use an odd number, with one on the centerline to help direct opposing traffic.
Vertical Clearance/ Protruding Objects	10 ft vertical clearance, NO protruding objects	Protruding objects: T405 provide a warning if vertical clearance is less than 80 inches (2,030 mm)	Protruding objects should not exist within the clear tread width of a shared-use path. Vertical clearance on shared-use paths should be a minimum of 3 m (10 ft) or the full clear width including safety buffers. Where vertical barriers and obstructions, such as abutments, piers, and other features, are unavoidable, they should be clearly marked.

Feature	SEHSR Greenway Concept Design Guidelines	Accessibility Guidelines for Outdoor Developed Areas; Proposed Rule (ABA, 2007)	Guide for the Development of Bicycle Facilities (AASHTO, 1999)
Tread Obstacles	None	Tread obstacles (changes in level, roots, rocks, ruts): up to 2 inches (50 mm); exception up to 3 inches (75 mm)	Tread obstacles are hazardous to bicyclists and skaters. The surface of a shared-use path should be smooth and should not have tread obstacles.
Passing Space	N/A if trail width is 10 ft	Passing space: at least 60 inches (1,525 mm) width within 1,000-ft (300-m) intervals. Advisory recommends more frequent intervals for some trail segments.	Shared-use paths should have a minimum clear width of 3 m (10 ft); exception for 2.4 m (8 ft)
Resting Intervals	N/A if trail width is 10 ft and slope is <5%	Resting intervals: size: 60 inches (1,525 mm) length, at least as wide as the widest trail segment adjacent to the rest area. Less than 1:20 (5%) slope in all directions. Resting areas are required where trail running slopes exceed 1:20 (5%) at intervals no greater than the lengths permitted under running slope.	The Guide does not address resting intervals.
Edge Protection/ Railings	42-inch minimum height railings for any ≥30 inch drop in grade OR 3:1 side slope adjacent to trail if <5 ft shoulder	Edge protection: where provided, 2-inch (75-mm) minimum height. Handrails are not required.	The Guide does not address edge protection. Some kinds of edge protection may be hazardous to bicyclists and skaters. The Guide has minimum railing height recommendations when needed for safety reasons.
Buffers/ Barriers (From Railroad)	Minimum 30 ft from edge of trail and 7 ft height of fence/barrier AND/OR grade separation AND/OR minimum 50 ft separation with no fence/barrier	N/A	N/A

Feature	SEHSR Greenway Concept Design Guidelines	Accessibility Guidelines for Outdoor Developed Areas; Proposed Rule (ABA, 2007)	Guide for the Development of Bicycle Facilities (AASHTO, 1999)
Openings/ Gaps	Maximum 0.25 inches (6 mm)	To prevent wheelchair wheels and cane tips from being caught in surface openings or gaps, openings in trail surfaces shall be of a size which does not permit passage of a 0.5-inch (13-mm) diameter sphere; elongated openings must be perpendicular or diagonal to the direction of travel; exception to permit parallel-direction, elongated openings if openings do not permit passages of a 0.25-inch (6-mm) sphere; second exception to permit openings which do not permit passage of a 0.75-inch (19-mm) sphere.	The AASHTO Guide does not specify a maximum dimension for a surface opening, but openings should be minimized. Openings should not permit a bicycle wheel to enter. Grates should be flush with the surface, and elongated openings should be perpendicular to the direction of travel (diagonal openings are more difficult for bicyclists to negotiate). Where openings are unavoidable, they should be clearly marked.
Signage	Part 9 of the Manual on Uniform Traffic Control Devices (MUTCD)	Accessible trails require designation with a symbol of accessibility, and information on total length of the accessible segment. No traffic control sign information.	Guidance on signing and marking is provided in the MUTCD, incorporated by reference as Federal regulation (23 CFR 655.601). A proposed amendment for Part 9 (Traffic Controls for Bicycle Facilities) was published in the Federal Register on June 24, 1999 (64 FR 33802).

More information regarding the design principles are contained in the Southeast High Speed Rail Multi-Use Trail Concept Design Guidelines from December 2009 (Appendix A).

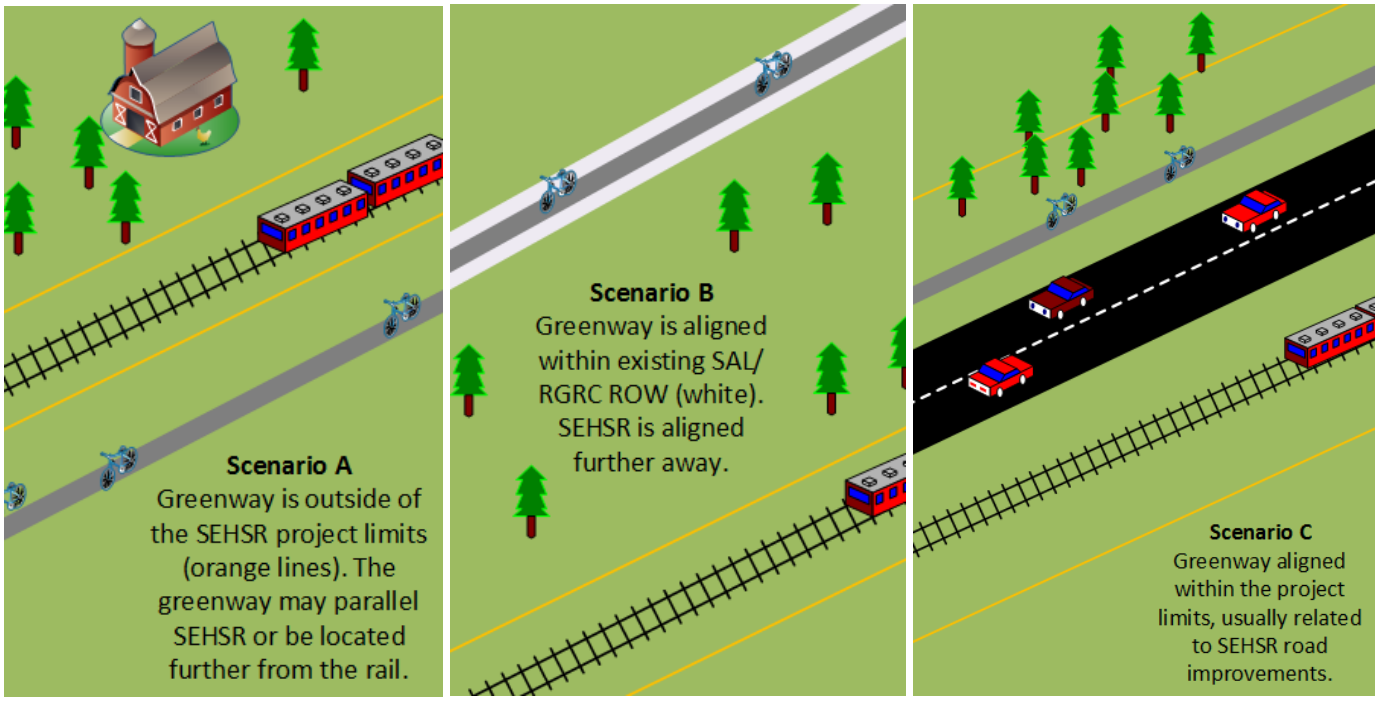
The greenway alignment along the SEHSR corridor generally falls within three scenarios (see Figure 1 for illustrations of each scenario):

- **Scenario A**. The greenway alignment is outside the SEHSR project limits. This scenario includes greenway alignments that are parallel and adjacent to the SEHSR alignment, as well as greenway alignments that diverge from the rail alignment to minimize impacts. In this scenario, the greenway is not located within the existing SAL/RGRC or the proposed SEHSR ROW.

- **Scenario B**. The SEHSR alignment diverges from the existing SAL/RGRC ROW, and the proposed greenway is aligned along the SAL/RGRC ROW. In this scenario, the greenway is not located within the proposed SEHSR ROW.

- **Scenario C.** The greenway alignment is within the SEHSR project limits. Generally, this occurs when the project limits are wider to accommodate road improvements associated with SEHSR. In these cases, the greenway is not located within the SEHSR ROW.

Figure 1: Greenway Alignment Scenarios



4.1 Phasing for Implementation

The proposed greenway has been divided into segments in order to detail the expected environmental impacts by jurisdiction and assess the ease of implementation. Table 2 lists the greenway segments, recommended phasing priority for implementation, potential ROW needed for implementation, and planning-level cost estimates for construction. Phasing priority was assessed based on the local characteristics within each segment, the potential for environmental impacts, and the potential amount of additional ROW that may be needed for implementation.

Table 2: Phasing Priority, ROW Needs, and Cost Estimates

Segments	Segment Length (Miles)	ROW Needed (Acres)	ROW Needed (Acres) / Linear Mile	Planning-Level Cost Estimate	Phasing Priority
Dinwiddie County	20.47	120.73	5.90	$17.6M	Medium
Brunswick County Line to Alberta	9.87	23.66	2.40	$8.5M	High
Alberta to Mecklenburg County Line	9.64	36.75	3.81	$8.3M	High
Mecklenburg County	18.66	75.84	4.06	$16M	Medium
North Carolina Line to Norlina	7.47	10.89	1.46	$6.4M	High
Norlina to Vance County Line	5.34	29.20	5.47	$4.6M	Medium
Vance County Line to Henderson	6.15	23.24	3.78	$5.3M	Medium
Henderson to Franklin County Line	7.61	54.83	7.20	$6.5M	Medium
Franklin County Line to Franklinton	4.28	21.24	4.96	$3.7M	Low
Franklinton to Wake County Line	6.97	42.85	6.15	$6M	Medium

The phasing is categorized as high, medium, and low priority for implementation. In general, the high priority sections are those where the greenway falls within the existing SAL/RGRC ROW (Scenario B) or within the SEHSR project limits (Scenario C) for significant portions of the section; the medium priority sections are those where the greenway alignment falls outside of the SEHSR project limits (Scenario A), but does not have any environmental impacts; and the low priority sections are those where the greenway alignment is outside of the project limits and either has environmental impacts or falls outside of the environmental study corridor.

The greenway alignment and the recommended phasing are detailed further in Section 4.2 for Virginia and Section 4.3 for North Carolina.

4.2 Virginia

The northern terminus of the greenway is just south of Petersburg and provides access to the Tri-Cities area, which includes Chester, Colonial Heights, and Petersburg. The greenway traverses south from Dinwiddie County adjacent to the I-85 corridor through rural and agricultural Brunswick and Mecklenburg counties. The greenway continues south across Lake Gaston just prior to entering into North Carolina.

Pictures (from top): Petersburg National Battlefield, Dinwiddie Landscape, Lake Gaston

The Tri-Cities area has an estimated population of over 70,000. Land use is primarily urban and suburban residential housing with some urban industrial use, but also includes many historic battlefields and museums due to its significant role in the Civil War.

Land use in Dinwiddie, Brunswick, and Mecklenburg counties is primarily rural agricultural. Population is sparse through this greenway section, but community centers do exist in Dinwiddie, McKenney, Alberta, and South Hill. Combined, these population centers account for approximately 10,000 residents.

Many of the recreational and tourist activities in Dinwiddie County center on Petersburg's urban center and the surrounding Civil War battlefields. Further south, in Brunswick and Mecklenburg counties, much of the recreation and tourism centers on Lake Gaston.

4.2.1 Dinwiddie County: Burgess Connector to Brunswick County Line (Maps 34-53)

The proposed greenway begins at the Burgess Connector and continues south adjacent to the I-85 corridor through Dinwiddie County. The greenway aligns west of, and immediately adjacent to, the SEHSR project limits (Scenario A). In several locations, specifically at roadway crossings, the greenway extends further away from the rail ROW to provide an improved experience for users by avoiding steep grades and sharp turning movements. Alternative designs have been proposed at these locations, including rail-under-roadway bridges; final design will determine if there is enough available space to fit both a rail line and greenway under these bridges and if it is likely that the operating railroad would allow for such a design.

The proposed greenway alignment is illustrated on Maps 34-53 in Appendix B.

Phasing Priority for Implementation

The recommended phasing for the Dinwiddie County segment of the greenway is categorized as a medium priority for implementation. The recommended alignment falls outside of the SEHSR project limits in multiple locations and deviates away from paralleling the existing rail ROW within eligible battlefield sites. One section from the proposed new road north of Carson Road south to Gatewood Road is primarily aligned within the existing SAL ROW (Scenario B) and is categorized as

high priority for implementation. Another high priority section stretches from Keelers Mill Road to Lew Jones Road within the SEHSR project limits (Scenario C). Part of this segment is located outside of the environmental study corridor. Additional environmental analysis and potential mitigation would be required for implementation. Details are outlined in the Table 3:

Table 3: Phasing Priority for Dinwiddie County Segment

Map #	Phasing Priority	Scenario(s) Present	Notes	Potential Trailheads
34	Low	A	Outside project limits; no possible trailheads; within eligible battlefield resource	None
35	Low	A, C	Outside project limits; within eligible battlefield resource; potential wetlands impacts	Dabney Mill Rd.
36	Low	A, C	Mostly outside project limits; partially outside environmental study area; within eligible battlefield resource; potential wetlands impacts	Dabney Mill Rd.
37	Low	A, C	Mostly outside project limits; within eligible battlefield resource	Quaker Rd.
38	Low	A	Outside project limits; no possible trailheads; within eligible battlefield resource	None
39	Medium	A, B, C	Mostly outside project limits; no major environmentally sensitive impacts	Honeycutt Rd.
40	High	A, B	Mostly within existing SAL ROW; no major environmentally sensitive impacts	Carson Rd.; new road north of Carson Rd.
41	High	A, B	Mostly within existing SAL ROW; no major environmentally sensitive impacts	Carson Rd.; Courthouse Rd.
42	High	A, B, C	Mostly within existing SAL ROW; no major environmentally sensitive impacts	Spring Creek Rd.; Gatewood Rd.
43	Low	A, C	Mostly outside project limits; within eligible battlefield resource	Gatewood Rd.; Boydton Plank Rd.
44	Low	A, C	Partially outside of project limits and within eligible battlefield resource; partially within project limits; potential wetlands impacts	Boydton Plank Rd.; Keelers Mill Rd.; anywhere along new road
45	High	A, C	Mostly within project limits; no major environmentally sensitive impacts	Anywhere along new road; Lew Jones Rd.
46	Medium	A, C	Mostly outside project limits; no major environmentally sensitive impacts	Snap Lodge Rd.
47	Medium	A, C	Mostly outside project limits; no major environmentally sensitive impacts	Karla Dr.
48	Medium	A, C	Mostly outside project limits; no major environmentally sensitive impacts	Karla Dr.
49	Low	A, C	Mostly outside project limits; no major environmentally sensitive impacts; southernmost portion extends outside of environmental study corridor	Ashbury Rd.; Unico Rd.
50	Low	A, C	Mostly outside project limits; partially outside environmental study corridor	Unico Rd.
51	Medium	A, B	Mostly outside project limits; no major environmentally sensitive impacts	None
52	Medium	A	Outside project limits; no trailheads; no major environmentally sensitive impacts	None
53	Medium	A	Outside project limits; no trailheads; no major environmentally sensitive impacts	None

Socio-Economic

Dinwiddie County is primarily rural with a low population density. According to the Environmental Protection Agency's (EPA) Environmental Justice (EJ) viewer online mapping tool, approximately 38% of the population adjacent to the greenway is considered minority, with 13% considered to be living below poverty. The county averages are 37% minority and 12% living below poverty. As such, the population living along the proposed greenway is proportionate to the rest of the county. Impacts are not expected to be disproportionately high or adverse to any of the EJ populations along the corridor, and relocations are not expected as a result of greenway construction. Of note, the construction of a greenway adjacent to minority and impoverished population centers could improve non-motorized access to regional destinations, including the proposed rail line.

Since the greenway is proposed adjacent to, or within, an existing or planned transportation corridor, impacts to public recreation or community services are not anticipated. In fact, the construction of a greenway could provide improved non-motorized access and connectivity to public recreation and community services.

Section 4(f) and Section 6(f)

The proposed greenway is designed to avoid sensitive and eligible historic resources, parks, recreational resources, and public wildlife areas. Dinwiddie County contains numerous historic Civil War Battlefield sites. Portions of these battlefields have already been developed and the trail seeks to minimize further impacts to the historic sites by using the existing SAL ROW (Scenario B) or the SEHSR project limits (Scenario C) as much as possible. Battlefields in Dinwiddie include:

- Petersburg III/The Breakthrough Battlefield;
- Hatcher's Run Battlefield;
- Boydton Plank Road Battlefield;
- Lewis Farm Battlefield; and
- Dinwiddie Courthouse Battlefield.

Cultural Resources

The proposed greenway is designed to avoid sensitive and eligible architectural and archaeological resources. The Zehmer Farm/Honeymoon Hill Farm is the only cultural resource near the proposed greenway. The greenway is proposed for alignment on the east side of the proposed rail line partially within the SAL ROW (Scenario B) and across the SEHSR project limits from the Zehmer Farm/Honeymoon Hill Farm. No impacts to the property are anticipated from the greenway.

Natural Resources

The proposed greenway is designed to avoid sensitive natural resources including streams, wetlands, threatened or endangered species, and floodplains. Dinwiddie County lies within the Chowan River Basin and includes numerous streams, wetlands, and other waters.

The surface waters and wetlands within the environmental study corridor are included in Appendices C and D.

The Federal Emergency Management Agency (FEMA) 100-Year Floodplains within the environmental study corridor in Dinwiddie County include the surface water crossings at Hatcher Run, Stony Creek, and the Nottoway River.

Regarding threatened or endangered species, the environmental study corridor includes terrestrial, aquatic, and plant communities. The environmental study corridor contains 1,667 acres of mixed forest, 744 acres of pine forest, and 918 acres of maintained/disturbed terrestrial communities, as well as several protected species, including the Roanoke logperch (*Percina Rex*) and Michaux's sumac (*Rhus michauxii*). The proposed greenway will avoid or minimize impacts to these sensitive resources.

Agricultural/Open Space

Within the environmental study corridor are 3,096 acres of prime farmlands with 785 acres listed with statewide importance. The proposed greenway will avoid and/or minimize impacts to these sensitive resources.

Invasive Species

Invasive and noxious plant species are scattered throughout the environmental study corridor, typically in areas of past disturbances. Following ground-disturbing activities (such as greenway construction), appropriate measures must be employed to reduce the opportunities for the introduction of invasive and noxious plants. Preventative measures could include the inspection and cleaning of construction equipment; commitments to ensure the use of invasive-free mulches, topsoils, and seed mixes; incremental seeding of disturbed areas (VDOT Standard and Spec 303.03(b)); the use of proper erosion- and sediment-control devices; Best Management Practices (BMPs) as described in the Virginia Department of Conservation and Recreation's Virginia Erosion and Sediment Control Handbook; and eradication strategies to be deployed should an invasion occur.

Air Quality

The greenway would prohibit the use of motor vehicles; therefore, the greenway is not expected to negatively impact the area's air quality. In fact, motor vehicle emissions are a major contributor to air pollution, so providing a greenway for non-motorized transportation could divert potential vehicle trips to active transportation trips. Trip conversion from motorized to non-motorized modes could reduce vehicle emissions in the area, potentially improving air quality slightly.

Noise

Since the greenway prohibits the use of motor vehicles, it is not expected to contribute to noise or vibration in the area. In fact, use of motor vehicles can be a contributor to noise pollution. Providing

a greenway for non-motorized transportation could divert potential vehicle trips to active transportation trips. Trip conversion from motorized to non-motorized modes could reduce noise pollution slightly.

Utilities and Related Services

Dinwiddie County is served by the South Central Wastewater Authority for wastewater treatment and water supply. Electricity is provided by Dominion Virginia Power, the Southside Electric Co-op, and the Dominion Electric Co-op. The proposed greenway will avoid or minimize impacts to these services.

ROW and Relocations

The proposed greenway will be contained within the existing transportation and/or rail ROW (Scenarios B and C), where feasible, to avoid relocations. Additional ROW may be needed to construct the greenway as currently designed. To implement the proposed greenway design in Dinwiddie County, it is projected that 120 acres of ROW will be needed.

4.2.2 Brunswick County: Dinwiddie County Line to Alberta (Maps 53-65)

The proposed greenway crosses the Nottoway River into Brunswick County on the west side of, and adjacent to, the existing rail ROW (Scenario A). For much of this segment, the greenway deviates from the proposed SEHSR rail corridor and utilizes the existing, inactive SAL ROW (Scenario B). The greenway crosses the proposed SEHSR rail line at Flat Rock Road, where the proposed rail line merges with the inactive SAL ROW (Scenario B), to minimize property impacts. The greenway continues running to the east of rail corridor heading into Alberta.

A detailed alignment of the proposed greenway is located on Maps 53-65 in Appendix B. Table 4 includes a summary of the environmental impacts in this segment of the proposed greenway.

Phasing for Implementation

The recommended phasing for the Brunswick County line to Alberta segment of the greenway is a high priority for implementation. The recommended greenway alignment is located primarily within the existing, inactive SAL ROW (Scenario B). Between the county line and Rawlings Road, the greenway is aligned outside of the existing rail ROW, parallel to the SEHSR alignment (Scenario A). The greenway section that stretches between Rawlings Road and Flat Rock Road is aligned primarily within the SAL ROW (Scenario B) and is categorized as high priority for implementation. South of Flat Rock Road, the greenway alignment is either adjacent to the SEHSR ROW (Scenario A) or within the SAL ROW (Scenario B). Part of this segment is located outside of the environmental study corridor and will require further study before implementation.

Table 4: Phasing Priority for Brunswick County Segment North of Alberta

Map #	Phasing Priority	Scenario(s) Present	Notes	Potential Trailheads
53	Medium	A	Outside project limits; no trailheads; no major environmentally sensitive impacts	None
54	Low	A, B	Partially outside project limits; partially within SAL ROW; potential wetlands impacts	Rawlings Rd.
55	Low	A, B	Partially outside project limits; partially within SAL ROW; potential wetlands impacts	Rawlings Rd.
56	High	B	Within existing SAL ROW	None
57	n/a	n/a	Map does not include greenway alignment	n/a
58	High	B	Within existing SAL ROW	Kress Rd.
59	High	B	Within existing SAL ROW	Kress Rd.
60	High	B	Within existing SAL ROW	None
61	High	B	Within existing SAL ROW	None
62	Low	A, B, C	Mostly within existing SAL ROW; partially within project limits; partially outside project limits with small portion outside environmental study area	Flat Rock Rd.; Zero Rd.
63	Low	A, B	Partially within existing SAL ROW; partially outside project limits with small portion outside environmental study area	Zero Rd.
64	High	B	Within existing SAL ROW	Chestnut Rd.
65	Medium	A, B	Partially within existing SAL ROW; mostly outside project limits; no major environmentally sensitive impacts	Beaver Dam Rd.

Socio-Economic

Brunswick County is primarily rural with a low population density. According to the EPA's EJ viewer online mapping tool, near the proposed greenway between the Dinwiddie County line and Alberta, the population is approximately 49% minority, with over 18% living below poverty. The county average is 60% minority, with 21% living below poverty. As such, the population living near the greenway corridor is below the county average. Disproportionally high or adverse impacts are not expected for the EJ populations along the corridor, and relocations will not be needed. In fact, the construction of a greenway adjacent to minority and poverty population centers could improve non-motorized access to regional destinations, including the proposed rail.

The proposed greenway runs along and/or within an existing or planned transportation corridor. Therefore, it is a compatible use, and no public recreation or community services will be adversely impacted. In fact, the construction of a greenway could provide improved non-motorized access and connectivity to public recreation and community services.

Section 4(f) and Section 6(f)

The proposed greenway is designed to avoid sensitive and eligible historic resources, parks, recreational resources, and public wildlife areas.

Cultural Resources

The proposed greenway will not impact sensitive and eligible architectural and archaeological resources. The two resources along this segment are the eligible architectural resources at Wynnhurst and Blick's Store, both of which are located off of Rawlings Road. Wynnhurst is located outside of the project limits and on the opposite side of the rail corridor from the greenway. Impacts are not anticipated. Blick's store is located outside of the existing SAL ROW. As the greenway is aligned along the SAL ROW in this section (Scenario B), impacts are not anticipated.

Natural Resources

The proposed greenway will avoid sensitive natural resources including streams, wetlands, threatened or endangered species, and floodplains. Brunswick County lies within the Chowan River Basin and includes numerous streams, wetlands, and other waters.

The surface waters and wetlands within the environmental study corridor are included in Appendices C and D.

The FEMA 100-Year Floodplain areas within the environmental study corridor in Brunswick County include the surface water crossings at Great Branch, Waqua Creek, and Sturgeon Creek.

Regarding threatened or endangered species, the environmental study corridor includes terrestrial, aquatic, and plant communities. The environmental study corridor contains 3,880 acres of mixed forest, 658 acres of pine forest, and 1,142 acres of maintained/disturbed terrestrial communities. Several protected species are also found in this area, including the Roanoke logperch (*Percina Rex*) and Michaux's sumac (*Rhus michauxii*). Species of concern in the area include Bachman's Sparrow (*Aimophila aestivalis*) and yellow lance (*Elliptio lanceolata*). The proposed greenway will avoid or minimize impacts to these sensitive resources.

Agricultural/Open Space

Within the environmental study corridor in Brunswick County are 2,533 acres of prime farmland, 29 acres that would be prime if drained, 486 acres that would be prime if drained and protected from frequent flooding, and 788 acres of statewide importance. The proposed greenway will avoid or minimize impacts to these sensitive resources.

Invasive Species

Invasive and noxious plant species are scattered throughout the environmental study area, typically in areas of past disturbances. Following ground-disturbing activities (such as greenway construction), appropriate measures must be employed to reduce the opportunity for the introduction of invasive and noxious plants. Measures may include the inspection and cleaning of

construction equipment; commitments to ensure the use of invasive-free mulches, topsoils, and seed mixes; incremental seeding of disturbed areas (VDOT Standard and Spec 303.03(b)); the use of proper erosion- and sediment-control devices; BMPs as described in the Virginia Department of Conservation and Recreation's Virginia Erosion and Sediment Control Handbook; and eradication strategies to be deployed should an invasion occur.

Air Quality

The proposed greenway will prohibit the use of motor vehicles; therefore, the greenway is not expected to negatively impact the area's air quality. In fact, motor vehicle emissions are a major contributor to air pollution; so, providing a greenway for non-motorized transportation could divert potential vehicle trips to active transportation trips. Trip conversion from motorized to non-motorized modes could reduce vehicle emissions in the area, potentially improving air quality slightly.

Noise

Since the proposed greenway will prohibit the use of motor vehicles, it is not expected to contribute to noise or vibration in the area. In fact, motor vehicles are a major contributor to noise pollution; so, providing a greenway for non-motorized transportation could divert potential vehicle trips to active transportation trips. Trip conversion from motorized to non-motorized modes could reduce noise pollution slightly.

Utilities and Related Services

Most of Brunswick County, with the exception of the Town of Alberta, is served by personal wells and septic systems for wastewater treatment and water supply. The Town of Alberta has public service. Electricity is provided by Dominion Virginia Power, the Southside Electric Co-op, the Dominion Electric Co-op, and Mecklenburg Electric Co-op. The proposed greenway will avoid or minimize impacts to these services.

ROW and Relocations

The proposed greenway will be primarily contained within the existing transportation and/or rail ROW. However, there are areas where the proposed greenway deviates from the SAL ROW and additional ROW may be needed to construct the greenway as currently designed. In order to construct the greenway between the Brunswick County line and the Town of Alberta, an additional 24 acres of ROW will be needed.

4.2.3 Brunswick County: Alberta (66)

As part of this study, the design team did not propose an alignment within urban municipal boundaries. It is anticipated that each town or city will plan and design their own bicycle and pedestrian network to connect to the proposed greenway for regional transportation access.

4.2.4 Brunswick County: Alberta to Mecklenburg County Line (67-77)

South of Alberta, the proposed greenway is routed west of the proposed SEHSR rail alignment, due to the I-85 and Boydton Plank (Route 1) crossings (Scenario A). Alternative designs have been proposed at these locations to include rail-under-roadway bridges (final designs will determine if enough space is available to fit both a rail line and multi-use trail under these bridges and if the operating railroad will allow for such a design). As the greenway continues south through Brunswick County, the proposed route utilizes the existing, inactive SAL ROW and the area inside the project limits to minimize property impacts (Scenarios A and C).

A detailed alignment of the proposed greenway is located on Maps 67-77 in Appendix B. Table 5 provides a summary of the environmental impacts in this segment.

Phasing for Implementation

The recommended phasing for the Alberta to Mecklenburg County line segment of the greenway is a high priority for implementation. The section of the greenway from Christanna Highway to Millville Road is categorized as high priority for implementation because the majority of this section is aligned along the SAL ROW (Scenario B). Other high priority sections stretch from Grandy Road to Rustic Road and from Forksville Road to the county line. Part of this segment is located outside of the environmental study corridor and will require further study before implementation.

Table 5: Phasing Priority for Brunswick County Segment South of Alberta

Map #	Phasing Priority	Scenario(s) Present	Notes	Potential Trailheads
67	Low	A, C	Mostly outside project limits with much of the southern portion outside of environmental study corridor	Rosebud Ln.
68	Low	A	Mostly outside of environmental study corridor	Christanna Hwy.; Boydton Plank Rd.
69	Medium	A, B	Mostly within existing SAL ROW; trailhead connections outside of project limits and environmental study corridor	Christanna Hwy.
70	High	A, B	Partially within existing SAL ROW; partially outside project limits; no major environmentally sensitive impacts	Millville Rd.
71	Medium	A	Outside project limits; no major environmentally sensitive impacts	None
72	High	A, B, C	South of Grandy Rd, mostly within SAL ROW or project limits; no major environmentally sensitive impacts	Grandy Rd.; Old Indian Rd.
73	High	A, B, C	Mostly within SAL ROW or project limits; no major environmentally sensitive impacts	Old Indian Rd.; Meredith Mill Rd.
74	High	A, B	Mostly within SAL ROW; no major environmentally sensitive impacts	Rustic Rd.
75	High	A, B, C	Mostly within SAL ROW or project limits; no major environmentally sensitive impacts	Forksville Rd.
76	High	B	Within SAL ROW; no major environmentally sensitive impacts	Forksville Rd.
77	High	B, C	Within SAL ROW or project limits; no major environmentally sensitive impacts	Tanner Town Rd.; Anywhere along new road

Socio-Economic

Brunswick County is mainly rural with a low population density. According to the EPA's EJ viewer online mapping tool, along the proposed greenway corridor, from Alberta to the Mecklenburg County line, the population is comprised of 68% minority, with over 19% of the population living below the poverty. The county average is 60% minority, with 21% living below poverty. As such, this segment has a higher population of minorities than in the county at large. Although a higher percentage of EJ population is along the corridor, impacts to these populations, as a result of greenway construction, are not anticipated. In fact, the construction of a greenway adjacent to minority and poverty population centers could improve non-motorized access to regional destinations, including the proposed rail.

The proposed greenway runs along and/or within an existing or planned transportation corridor. Therefore, it is a compatible use, and no public recreation or community services will be adversely impacted. In fact, the construction of a greenway could provide improved non-motorized access and connectivity to public recreation and community services.

Section 4(f) and Section 6(f)

The proposed greenway is designed to avoid impacts to sensitive and eligible historic resources, parks, recreational resources, and public wildlife areas.

Cultural Resources

The proposed greenway is designed to avoid impacts to sensitive and eligible architectural and archaeological resources. Eligible resources in this segment include the Orgain House, Tourist Guest House, and Oak Shades. However, the proposed greenway is on the other side of the street from the Orgain House and is within the existing SAL ROW at the Tourist Guest House and at Oak Shades (Scenario B). Therefore, the greenway will not impact these properties.

Natural Resources

The proposed greenway is designed to avoid impacts to sensitive natural resources including streams, wetlands, threatened or endangered species, and floodplains. Brunswick County lies within the Chowan River Basin and includes numerous streams, wetlands, and other waters.

The surface waters and wetlands within the proposed greenway corridor are included in Appendices C and D.

The FEMA 100-Year Floodplain areas within the proposed greenway corridor include the surface water crossings at Gum Branch, Roses Creek, Great Creek, and the Meherrin River.

Regarding threatened or endangered species, the environmental study corridor includes terrestrial, aquatic, and plant communities. The environmental study corridor contains 3,880 acres of mixed forest, 658 acres of pine forest, and 1,142 acres of maintained/disturbed terrestrial communities within Brunswick County. The protected species in the corridor include the Roanoke logperch (*Percina Rex*) and Michaux's sumac (*Rhus michauxii*). Species of concern include Bachman's sparrow (*Aimophila aestivalis*) and yellow lance (*Elliptio lanceolata*). The proposed greenway will avoid or minimize impacts to these sensitive resources.

Agricultural/Open Space

Within the environmental study corridor in Brunswick County are 2,533 acres of prime farmland, 29 acres that would be prime if drained, 486 acres that would be prime if drained and protected from frequent flooding, and 788 acres of statewide importance. The proposed greenway will avoid or minimize impacts to these sensitive resources.

Invasive Species

Invasive and noxious plant species are scattered throughout the corridor, typically in areas of past disturbances. Following ground-disturbing activities (e.g., greenway construction), appropriate measures must be employed to reduce the opportunities for introduction of these species. Measures may include the inspection and cleaning of construction equipment; commitments to ensure the use of invasive-free mulches, topsoils, and seed mixes; incremental seeding of disturbed

areas (VDOT Standard and Spec 303.03(b)); the use of proper erosion- and sediment-control devices; BMPs as described in the Virginia Department of Conservation and Recreation's Virginia Erosion and Sediment Control Handbook; and eradication strategies to be deployed should an invasion occur.

Air Quality

The proposed greenway will prohibit the use of motor vehicles. As such, the greenway is not expected to impact the area's air quality. In fact, motor vehicle emissions are a major contributor to air pollution; so, providing a greenway for non-motorized transportation could divert potential vehicle trips to active transportation trips. Trip conversion from motorized to non-motorized modes could reduce vehicle emissions in the area, potentially improving air quality slightly.

Noise

Since the proposed greenway prohibits the use of motor vehicles, it is not expected to contribute additional noise or vibration in the area. In fact, motor vehicles are a major contributor to noise pollution; so, providing a greenway for non-motorized transportation could divert potential vehicle trips to active transportation trips. Trip conversion from motorized to non-motorized modes could reduce noise pollution slightly.

Utilities and Related Services

Most of Brunswick County, except for the Town of Alberta, is served by personal wells and septic systems for wastewater treatment and water supply. The Town of Alberta is publicly served. Electricity is provided by Dominion Virginia Power, the Southside Electric Co-op, the Dominion Electric Co-op, and Mecklenburg Electric Co-op. The proposed greenway will avoid or minimize impacts to these services.

ROW and Relocations

The proposed greenway is designed to fall within existing or planned transportation and rail ROW, where feasible (Scenarios B and C). However, in some areas, additional ROW may be needed to construct the greenway as currently designed. In order to construct the greenway between Alberta and the Mecklenburg County line, an additional 37 acres of ROW will be needed.

4.2.5 Mecklenburg County (Maps 77-92)

The proposed greenway continues south into Mecklenburg County and aligns to the west of, and immediately adjacent to, the rail corridor, primarily outside of the project limits (Scenario A). The proposed greenway shifts to the east of the proposed rail line at Northington Road, prior to the Town of La Crosse. The proposed greenway exits La Crosse to west of the rail corridor outside the project limits (Scenario A), and then the alignment switches back and forth between the east and west sides of the proposed rail line to minimize private property impacts. At Gaulding Road, the proposed greenway aligns to the east of the rail corridor and remains on the east side as it crosses Lake Gaston and continues into North Carolina.

A detailed alignment of the proposed greenway is located on Maps 77-92 in Appendix B. Table 6 provides a summary of the environmental impacts in this segment.

Phasing for Implementation

The recommended phasing for the Mecklenburg County segment of the greenway is categorized as a medium priority for implementation. The section of the greenway from Country Club Road to La Crosse town limits is aligned within the project limits or the existing SAL ROW and would be considered high priority for implementation. Other high priority sections would include the section along the new road just west of the county line, as well as the section along Marengo Road from Belfield Road to near the intersection of Marengo Road and Webb Road (Maps 84-86). Environmental impacts are not expected, but the recommended greenway alignment is primarily located outside of the SEHSR project limits.

Table 6: Phasing Priority for Mecklenburg County Segment

Map	Phasing	Scenario(s)	Notes	Potential Trailheads

#	Priority	Present		
77	High	A, C	Mostly within project limits; no major environmentally sensitive impacts	Anywhere along new road
78	Medium	A, C	Mostly outside project limits; no major environmentally sensitive impacts	Anywhere along new road; Wilson Rd.
79	Medium	A, B, C	Mostly within existing SAL ROW or project limits; lack of logical trailheads; no major environmentally sensitive impacts	Wilson Rd.
80	Medium	A, B	Outside project limits; no major environmentally sensitive impacts	Forksville Rd.; Wray Rd.
81	Medium	A, B, C	Mostly outside project limits; no major environmentally sensitive impacts	Wray Rd.; Country Club Rd.; Northington Rd.
82	High	B, C	Within existing SAL ROW or project limits; no major environmentally sensitive impacts	Country Club Rd.; Northington Rd.; Carter St.
83	Medium	A, C	Mostly outside project limits; no major environmentally sensitive impacts	Meredith St.; Morris Town Cir.; Peter Walker Rd.
84	High	A, B, C	Mostly within project limits or existing SAL ROW; no major environmentally sensitive impacts	Belfield Rd.; Marengo Rd.
85	High	A, B, C	Mostly within project limits or existing SAL ROW; no major environmentally sensitive impacts	Marengo Rd.
86	High	A, B, C	Mostly within project limits or existing SAL ROW; no major environmentally sensitive impacts	Marengo Rd.
87	Medium	A, C	Mostly outside project limits; no major environmentally sensitive impacts	Marengo Rd.; Gaulding Rd.
88	Medium	A	Outside project limits; no major environmentally sensitive impacts	Marengo Rd.
89	Medium	A, B	Mostly outside project limits; no major environmentally sensitive impacts	Bracey Dr.; Hwy 903
90	Medium	A, B	Mostly outside project limits; no major environmentally sensitive impacts	None
91	Low	A	Outside project limits; large lake crossing	Unnamed road near marina
92	Medium	A, B	Mostly within SAL ROW; no major environmentally sensitive impacts	Paschall Rd.

Socio-Economic

Mecklenburg County is primarily rural with a low population density. According to the EPA's EJ viewer online mapping tool, along the proposed greenway, the population is comprised of 49% minority, with 30% living below poverty. The county average is 41% minority, with 19% living below poverty. As such, the population living along the proposed greenway is above the county average for minority and poverty populations. Although a higher percentage of EJ population is along the corridor, impacts to these populations, as a result of greenway construction, are not anticipated. In fact, the construction of a greenway adjacent to minority and poverty population centers could improve non-motorized access to regional destinations, including the proposed rail.

The proposed greenway runs along, and/or is contained within, an existing or planned transportation corridor. Therefore, it is a compatible use, and no public recreation or community services will be adversely impacted. In fact, the construction of a greenway could provide improved non-motorized access and connectivity to public recreation and community services.

Section 4(f) and Section 6(f)

The proposed greenway alignment is designed to avoid sensitive and eligible historic resources, parks, recreational resources, and public wildlife areas.

Cultural Resources

The proposed greenway is designed to avoid sensitive and eligible architectural and archaeological resources. This segment includes the eligible architectural resources of the Evans House, Smelley House, Wright Farmstead, Sardis Methodist Church, Bracey Historic District, and the Granite Hall/Fitts House. However, the proposed greenway alignment is routed outside of these properties and, therefore, will not impact these properties, except for the Bracey Historic District. In the vicinity of the Bracey Historic District, the greenway is within the existing SAL ROW (Scenario B), and impacts are not anticipated.

Natural Resources

The proposed greenway is designed to avoid sensitive natural resources including streams, wetlands, threatened or endangered species, and floodplains. Mecklenburg County lies within the Chowan and Roanoke River Basins and includes numerous streams, wetlands, and other waters.

The surface waters and wetlands within the proposed greenway corridor are included in Appendices C and D.

The FEMA 100-Year Floodplain areas within proposed greenway corridor include the surface water crossings at Gum Branch, Roses Creek, Great Creek, and the Meherrin River.

Regarding threatened or endangered species, the proposed environmental study corridor includes terrestrial, aquatic, and plant communities. The environmental study corridor contains 3,880 acres of mixed forest, 658 acres of pine forest, and 1,142 acres of maintained/disturbed terrestrial communities in the study corridor. Protected species within the corridor include the Roanoke logperch (*Percina Rex*) and Michaux's sumac (*Rhus michauxii*). Species of concern include Bachman's Sparrow (*Aimophila aestivalis*) and yellow lance (*Elliptio lanceolata*). The proposed greenway will avoid or minimize impacts to these sensitive resources.

Agricultural/Open Space

Within the environmental study corridor in Mecklenburg County are 1,883 acres of prime farmland and 1,332 acres of statewide importance. The proposed greenway will avoid or minimize impacts to these sensitive resources.

Invasive Species

Invasive and noxious plant species are scattered throughout the environmental study corridor, typically in areas of past disturbances. Following ground-disturbing activities, appropriate measures must be employed to reduce the opportunity for the introduction invasive and noxious plants. Mitigation measures could include the inspection and cleaning of construction equipment; commitments to ensure the use of invasive-free mulches, topsoils, and seed mixes; incremental seeding of disturbed areas (VDOT Standard and Spec 303.03(b)); the use of proper erosion- and sediment-control devices; BMPs as described in the Virginia Department of Conservation and Recreation's Virginia Erosion and Sediment Control Handbook; and eradication strategies to be deployed should an invasion occur.

Air Quality

The proposed greenway would prohibit the use of motor vehicles; therefore, only non-motorized modes will be attributed to the greenway. In that regard, the greenway is not expected to impact the area's air quality. In fact, motor vehicle emissions are a major contributor to air pollution; so, providing a greenway for non-motorized transportation could divert potential vehicle trips to active transportation trips. Trip conversion from motorized to non-motorized modes could reduce vehicle emissions in the area, potentially improving air quality slightly.

Noise

Since the proposed greenway would prohibit the use of motor vehicles, it is not expected to contribute additional noise or vibration in the area. In fact, motor vehicles are a major contributor to noise pollution; so, providing a greenway for non-motorized transportation could divert potential vehicle trips to active transportation trips. Trip conversion from motorized to non-motorized modes could reduce noise pollution slightly.

Utilities and Related Services

Mecklenburg County is served by the Roanoke River Public Service Authority for wastewater treatment and water supply. Electricity is provided by Dominion Virginia Power, the Southside Electric Co-op, the Dominion Electric Co-op, and Mecklenburg Electric Co-op. The proposed greenway is designed to avoid or minimize impacts to these services.

ROW and Relocations

The proposed greenway is designed within existing and proposed transportation corridors and/or rail ROW, where feasible, to avoid relocations (Scenarios B and C). However in some areas, additional ROW may be needed to construct the greenway as designed. In order to construct the greenway in Mecklenburg County, an additional 76 acres of ROW will be needed.

4.3 North Carolina

Based on 2007 estimates by the North Carolina State Demographics unit, several populated areas are within 0.5 miles of the proposed rail corridor:

Norlina (1,083)
Middleburg (168)
Henderson (16,315)
Kittrell (135)
Franklinton (2,460)
Youngsville (1,168)
Wake Forest (4,793)
Raleigh (367,098)

Pictures (from top): Town of Franklinton, Norlina Landscape, Kerr Lake

Vance and Warren counties depend heavily on Lake Gaston and Kerr Lake for tourism, as well as other water-related recreation destinations. In Warren County, attractions include the Lakeland Cultural Arts Center, Norlina Train Museum, and Medoc Mountain State Park. Vance County is home to the East Coast Drag Times Hall of Fame, which includes the annual Corbitt Truck Show and "Show, Shine, Shag and Dine Car Show." Harper's Motor Speedway is located near Kittrell. However, in Franklin County, tourism provides limited economic activity, with agri-tourism as the most prevalent.

As the state capital, the Raleigh metropolitan area is a catalyst for tourism. It is home to many museums (e.g., the North Carolina Museum of History, Museum of Science and Art, Marbles Kids Museum), historic sites and cultural centers (e.g., the JC Raulston Arboretum, Progress Energy Center for the Performing Arts), as well as host to a number of festivals throughout the year. Raleigh is also home to the Carolina Hurricanes hockey team, as well athletic venues at North Carolina State University, Peace College, Shaw University, Meredith College, Saint Augustine's College, and other schools.

4.3.1 Warren County: VA/NC Border to Norlina (Maps 93-99)

From the Virginia state line to the municipal limits of Norlina, the proposed greenway aligns primarily to the east of the proposed rail corridor. The proposed rail corridor utilizes the existing RGRC ROW; so, the greenway is aligned adjacent to the existing RGRC ROW (Scenarios A and C). The exceptions are near the Virginia state line and just north of Norlina, where the proposed rail corridor diverts from the existing RGRC ROW in order to compensate for an existing curve in the rail line. Near the state line, the greenway is aligned along the RGRC ROW (Scenario B). North of Norlina, the greenway is primarily located to the east of, and immediately adjacent to, the proposed rail corridor (Scenario A).

A detailed alignment of the proposed greenway is located on Maps 93-99 in Appendix E. Table 7 provides a summary of the environmental impacts in this segment.

Phasing for Implementation

The recommended phasing for the North Carolina line to Norlina segment of the greenway is categorized high priority for implementation as the majority of the proposed greenway alignment is within either the existing RGRC ROW or the project limits (Scenarios B and C). Environmental impacts are not expected. The section of the greenway between the state line and the Warren County Training School (Map 95) follows the existing RGRC ROW and is categorized as high priority for development. Another high priority section stretches from Wise Five Forks Road to Weldon Road.

Table 7: Phasing Priority for Warren County Segment North of Norlina

Map #	Phasing Priority	Scenario(s) Present	Notes	Potential Trailheads
93	High	B	All within existing RGRC ROW	Wallace Paschall Rd.; Paschall Station Rd.; Felts Rd.
94	High	B	All within existing RGRC ROW	Paschall Station Rd.
95	Medium	A, B, C	Mostly within existing RGRC ROW or project limits; no major environmentally sensitive impacts	Paschall Station Rd.; Wise Five Forks Rd.; anywhere along new road; Falkner Quarter Rd.
96	High	C	Within project limits; no major environmentally sensitive impacts	Anywhere along new road; Falkner Quarter Rd.
97	High	A, C	Mostly within project limits; no major environmentally sensitive impacts	Anywhere along new road; Weldon Rd.
98	Medium	A, B, C	Mostly within RGRC ROW or project limits; no major environmentally sensitive impacts	Anywhere along new roads; Weldon Rd.
99	Medium	A, B, C	Mostly within existing RGRC ROW or project limits; no major environmentally sensitive impacts	Anywhere along new road

Socio-Economic

Warren County is a peripheral part of the Raleigh-Durham Metropolitan Statistical Area (MSA), also known as the Triangle Region. Historically, Warren County is considered agricultural and rural, although manufacturing has recently increased as an occupying land use. Recreation associated with Lake Gaston also accounts for some service and trade employment.

According to the EPA's EJ viewer online mapping tool, the population in Warren County along the proposed greenway is comprised of over 59% minority, with 33% living below poverty. The county average is over 62% minority, with 27% living below poverty. As such, the population living along the proposed greenway is below average for minority populations and above average for poverty when

compared to the rest of the county. Disproportionately high or adverse impacts to the EJ populations along the greenway are not anticipated, and relocations will not be needed. In fact, the construction of a greenway adjacent to minority and poverty population centers could improve non-motorized access to regional destinations, including the proposed rail.

The proposed greenway alignment is adjacent to, or within, an existing or planned transportation corridor. Therefore, it is a compatible use, and no public recreation or community services will be adversely impacted. In fact, the construction of a greenway could provide improved non-motorized access and connectivity to public recreation and community services.

Section 4(f) and Section 6(f)

The proposed greenway will avoid sensitive and eligible historic resources, parks, recreational resources, and public wildlife areas. In this segment, no impacts are anticipated to these resources.

Cultural Resources

The proposed greenway is designed to avoid sensitive and eligible architectural and archaeological resources. This segment includes the eligible architectural resources of the Warren County Training School, the Wise School, and a historic residence. However, the proposed greenway is aligned outside of these properties; therefore, impacts to the properties are not anticipated.

Natural Resources

The proposed greenway will avoid sensitive natural resources including streams, wetlands, threatened or endangered species, and floodplains. Warren County lies within the Roanoke River Basin and includes numerous streams, wetlands, and other waters.

The surface waters and wetlands within this segment are included in Appendices C and D.

No FEMA 100-Year Floodplain crossings are within this segment.

Regarding threatened or endangered species, the proposed environmental study corridor includes terrestrial, aquatic, and plant communities. The environmental study corridor contains 885 acres of mixed forest, 299 acres of pine forest, and 1,763 acres of maintained/disturbed terrestrial communities within Warren County. Protected species include bald eagle (*Haliaeetus leucocephalus*), dwarf wedgemussel (*Alasmidonta Heterodon*), and Tar River spinymussel (*Elliptio steinstansana*). Species of concern include Bachman's sparrow (*Aimophila aestivalis*), pinewoods shiner (*Lythrurus matutinus*), American eel (*Anguilla rostrate*), Roanoke bass (*Ambloplites cavifrons*), yellow lance (*Elliptio lanceolata*), Atlantic pigtoe (*Fusconaia masoni*), and prairie birdsfoottrefoil (*Lotus unifoliolatus var. helleri*). The proposed greenway will avoid or minimize impacts to these sensitive resources.

Agricultural/Open Space

Within the environmental study corridor in Warren County are 2,232 acres of prime farmland and 139 acres of statewide importance. The proposed greenway will avoid or minimize impacts to these sensitive resources.

Invasive Species

Invasive and noxious plant species are scattered throughout the environmental study corridor, typically in areas of past disturbances. Following ground-disturbing activities, appropriate measures must be employed to reduce the opportunity for the introduction of invasive and noxious plants. Mitigation measures could include the inspection and cleaning of construction equipment; commitments to ensure the use of invasive-free mulches, topsoils, and seed mixes; incremental seeding of disturbed areas; the use of proper erosion- and sediment-control devices; BMPs as described in the North Carolina Department of Environment and Natural Resources' Stormwater BMP Manual; and eradication strategies to be deployed should an invasion occur.

Air Quality

The proposed greenway prohibits use of motor vehicles; therefore, the greenway is not expected to impact the area's air quality. In fact, motor vehicle emissions are a major contributor to air pollution; so, providing a greenway for non-motorized transportation could divert potential vehicle trips to active transportation trips. Trip conversion from motorized to non-motorized modes could reduce vehicle emissions in the area, potentially improving air quality slightly.

Noise

The proposed greenway prohibits the use of motor vehicles; therefore, it is not expected to contribute additional noise or vibration in the area. In fact, motor vehicles are a major contributor to noise pollution; so, providing a greenway for non-motorized transportation could divert potential vehicle trips to active transportation trips. Trip conversion from motorized to non-motorized modes could reduce noise pollution slightly.

Utilities and Related Services

Warren County is served by the Kerr Lake Regional Water Authority for wastewater treatment and water supply. Electricity is provided by Progress Energy, Duke Energy, and Halifax Electric Membership Corporation. The proposed greenway will avoid or minimize impacts to these services.

ROW and Relocations

The proposed greenway is designed within existing and proposed transportation and rail ROW, where feasible (Scenarios B and C); therefore, relocations are not needed. However, in some areas, additional ROW may be needed to construct the greenway as currently designed. In order to

construct the greenway between the North Carolina/Virginia State line and the Town of Norlina, an additional 11 acres of ROW is needed.

4.3.2 Warren County: Norlina (Maps 99-100)

As part of this study, the design team did not propose an alignment within urban municipal boundaries. It is anticipated that each town or city will plan and design their own bicycle and pedestrian network to connect to the proposed greenway for regional transportation access.

4.3.3 Warren County: Norlina to Vance County (Maps 100-106)

South of Norlina, the proposed greenway aligns to the south or east of, and immediately adjacent to, the proposed rail corridor only deviating from the preferred rail alignment in short sections to minimize property impacts. The existing RGRC ROW is used minimally for the greenway in this segment (Scenario B), as the proposed SEHSR rail alignment utilizes the existing rail ROW.

A detailed alignment of the proposed greenway is located on Maps 100-106 in Appendix E. Table 8 provides a summary of the environmental impacts in this segment of the proposed greenway.

Phasing for Implementation

The recommended phasing for the Norlina to Vance County line segment of the greenway is medium priority for implementation. The proposed greenway alignment is predominantly routed outside of the existing RGRC ROW in this segment, and there is an expected impact to an environmentally sensitive area. The greenway section between Ridgeway Warrenton Road and the new road northeast of the William J. Hawkins House (Map 103) is aligned within the project limits and considered high priority for implementation. The other high priority section extends from Kimball Road to the county line.

Table 8: Phasing Priority for Warren County Segment South of Norlina

Map #	Phasing Priority	Scenario(s) Present	Notes	Potential Trailheads
100	Medium	A	Outside project limits; no trailheads; no major environmentally sensitive impacts	None
101	Medium	A, C	Mostly outside project limits; no trailheads to the east; no major environmentally sensitive impacts	Anywhere along new road; Ridgeway Warrenton Rd.
102	High	A, C	Mostly inside project limits; no major environmentally sensitive impacts	Anywhere along new road; Ridgeway Warrenton Rd.
103	Low	A, C	Mostly outside project limits; impact to environmentally sensitive area	Anywhere along new road; Axtell Ridgeway Rd.
104	Medium	A, B, C	Partially outside project limits with alternative routing to avoid private property; partially within RGRC ROW and project limits	Henderson Davis Rd.; Crescent Dr.; Collins Rd.; Soul City Blvd.
105	Low	A, B	Mostly outside project limits; potential wetlands impacts	Collins Rd.
106	High	A, C	Mostly within project limits; no major environmentally sensitive impacts	Kimball Rd.; Anywhere along new roads

Socio-Economic

Warren County is a peripheral part of the Raleigh-Durham MSA.

According to the EPA's EJ viewer online mapping tool, the population in Warren County along the proposed greenway is over 74% minority, with 33% living below poverty. The county average is over 62% minority, with 27% living below poverty. As such, the population living along the proposed greenway is above the average minority and poverty levels in the rest of the county. Although a higher percentage of EJ population lives along the corridor, there are no anticipated impacts to these populations. In fact, the construction of a greenway adjacent to minority and poverty population centers could improve non-motorized access to regional destinations, including the proposed rail.

The proposed greenway is routed adjacent to, or within, an existing or planned transportation corridor. Therefore, no public recreation or community services will be impacted. In fact, the construction of a greenway could provide improved non-motorized access and connectivity to public recreation and community services.

Section 4(f) and Section 6(f)

The proposed greenway will avoid sensitive and eligible historic resources, parks, recreational resources, and public wildlife areas.

Cultural Resources

The proposed greenway will avoid sensitive and eligible architectural and archaeological resources. This segment includes the eligible architectural resources of the Holtzmann Farm, the House and Office of Dr. Thomas B. Williams, and the Marshall House/Tavern. The corridor also includes the listed architectural resources of the William J. Hawkins House and the Chapel of the Good Shepherd. With the exception of the William J. Hawkins House, the proposed greenway is routed outside of these properties and will, therefore, not impact these properties. Potential impacts to the William J. Hawkins House should be minimized as much as possible during final design.

Natural Resources

The proposed greenway will avoid sensitive natural resources including streams, wetlands, threatened or endangered species, and floodplains. Warren County lies within the Roanoke River Basin and includes numerous streams, wetlands, and other waters.

The surface waters and wetlands within the proposed greenway corridor are included in Appendices C and D.

No FEMA 100-Year Floodplain crossings are within the proposed greenway corridor in Warren County.

Regarding threatened or endangered species, the environmental study corridor includes terrestrial, aquatic, and plant communities. The environmental study corridor contains 885 acres of mixed forest, 299 acres of pine forest, and 1,763 acres of maintained/disturbed terrestrial communities within Warren County. Protected species include bald eagle (*Haliaeetus leucocephalus*), dwarf wedgemussel (*Alasmidonta Heterodon*), and Tar River spinymussel (*Elliptio steinstansana*). Species of concern include Bachman's sparrow (*Aimophila aestivalis*), pinewoods shiner (*Lythrurus matutinus*), American eel (*Anguilla rostrate*), Roanoke bass (*Ambloplites cavifrons*), yellow lance (*Elliptio lanceolata*, Atlantic pigtoe (*Fusconaia masoni*), and prairie birdsfoottrefoil (*Lotus unifoliolatus var. helleri*). The proposed greenway is designed to avoid or minimize impacts to these sensitive resources.

Agricultural/Open Space

Within the environmental study corridor in Warren County are 2,232 acres of prime farmland and 139 acres of statewide importance. The proposed greenway will avoid or minimize impacts to these sensitive resources.

Invasive Species

Invasive and noxious plant species are scattered throughout the environmental study corridor, typically in areas of past disturbances. Following ground-disturbing activities, appropriate measures must be employed to reduce the opportunity for the introduction of invasive and noxious plants. Mitigation measures could include the inspection and cleaning of construction equipment; commitments to ensure the use of invasive-free mulches, topsoils, and seed mixes; incremental seeding of disturbed areas; the use of proper erosion- and sediment-control devices; BMPs as described in the North Carolina Department of Environment and Natural Resources' Stormwater BMP Manual; and eradication strategies to be deployed should an invasion occur.

Air Quality

The proposed greenway prohibits the use of motor vehicles; therefore, it is not expected to impact the area's air quality. In fact, motor vehicle emissions are a major contributor to air pollution; so, providing a greenway for non-motorized transportation could divert potential vehicle trips to active transportation trips. Trip conversion from motorized to non-motorized modes could reduce vehicle emissions in the area, potentially improving air quality slightly.

Noise

Since the greenway prohibits the use of motor vehicles, it is not expected to contribute additional noise or vibration in the area. In fact, motor vehicles are a major contributor to noise pollution; so, providing a greenway for non-motorized transportation could divert potential vehicle trips to active transportation trips. Trip conversion from motorized to non-motorized modes could reduce noise pollution slightly.

Utilities and Related Services

Warren County is served by the Kerr Lake Regional Water Authority for wastewater treatment and water supply. Electricity is provided by Progress Energy, Duke Energy, and Halifax Electric Membership Corporation. The proposed greenway will avoid or minimize impacts to these services.

ROW and Relocations

The proposed greenway is routed within existing and planned transportation and rail ROW, where feasible, to avoid relocations (Scenarios B and C). However, in some areas, additional ROW may be needed to construct the greenway as currently designed. In order to construct the greenway between the Town of Norlina and the Vance County line, an additional 29 acres of ROW will be needed.

4.3.4 Vance County: Warren County to Henderson (Maps 106-112)

Crossing into Vance County, the proposed greenway aligns adjacent to, and to the east of, the proposed rail corridor. However, the greenway and proposed rail corridors shift away from the existing RGRC ROW and head further east to reduce impacts and straighten curves to maintain a higher operating speed. Further south in this segment, as the proposed greenway approaches Henderson, the alignment separates from the proposed rail and follows existing roadways and property lines to reduce property impacts.

A detailed alignment of the proposed greenway is located on Maps 106-112 in Appendix E. Table 9 provides a summary of the environmental impacts in this segment of the proposed greenway.

Phasing for Implementation

The recommended phasing for the Warren County line to Henderson segment of the greenway is medium priority for implementation. The proposed greenway alignment is routed outside of the existing RGRC ROW (Scenario B) and the SEHSR project limits (Scenario C) for much of the segment. High-priority sections are located along new roads within the project limits (Scenario C) near the county line and northeast of Brookston Road. A small section near the Henderson city limits is located outside of the environmental study corridor and will require further study before implementation.

Table 9: Phasing Priority for Vance County Segment North of Henderson

Map #	Phasing Priority	Scenario(s) Present	Notes	Potential Trailheads
106	High	C	Within project limits; no major environmentally sensitive impacts	Anywhere along new road
107	Medium	A, C	Partially within project limits; no major environmentally sensitive impacts	Anywhere along new road
108	Medium	A, C	Mostly outside project limits; no major environmentally sensitive impacts	Allison Cooper Rd.; Anywhere along new road
109	High	C	Within project limits; no major environmentally sensitive impacts	Anywhere along new road
110	Medium	A, C	Mostly within project limits; parts outside project limits have alternative routing to avoid private property	Anywhere along new road; Brookston Rd.; Baptist Church Rd.
111	Medium	A, C	Mostly outside project limits with alternative routing to avoid private property	Greystone Rd.; N. Oliver Dr.; Warrenton Rd.
112	Low	A, C	Mostly outside project limits with alternative routing outside study area; partially outside environmental study corridor	N. Oliver Dr.; Warrenton Rd.

Socio-Economic

Vance County is a peripheral part of the Raleigh-Durham MSA and is composed primarily of agricultural lands and forests along the study corridor until Middleburg. The largest industry sectors include service and trade employment, which is partially attributed to the Lake Gaston area.

According to the EPA's EJ viewer online mapping tool, in Vance County between Warren County and Henderson, the population is approximately 90% minority, with 55% living below poverty. The county average is over 58% minority, with 28% living below poverty. As such, the population living near the proposed greenway is above the minority and poverty averages for the rest of the county. Although a higher percentage of EJ population is along the corridor, no impacts are anticipated as a result of the proposed greenway. In fact, the construction of a greenway adjacent to minority and poverty population centers could improve non-motorized access to regional destinations, including the proposed rail.

Since the proposed greenway runs adjacent to, or within, an existing or planned transportation corridor, it will not impact public recreation or community services. In fact, the construction of a greenway could provide improved non-motorized access and connectivity to public recreation and community services.

Section 4(f) and Section 6(f)

The proposed greenway is designed to avoid impacts to sensitive and eligible historic resources, parks, recreational resources, and public wildlife areas.

Cultural Resources

The proposed greenway will avoid sensitive and eligible architectural and archaeological resources. In this segment of the corridor, eligible resources include the Middleburg Community House (a historic residence), the Holloway Farm, and the Forrest Ellington Farm. However, the proposed greenway is aligned outside of these properties and will not impact these properties.

Natural Resources

The proposed greenway will avoid sensitive natural resources including streams, wetlands, threatened or endangered species, and floodplains. Vance County lies within the Roanoke and Tar-Pamlico River Basins and includes numerous streams, wetlands, and other waters.

The surface waters and wetlands within the proposed greenway corridor are included in Appendices C and D.

No FEMA 100-Year Floodplain crossings are within the proposed greenway corridor in Vance County.

Regarding threatened or endangered species, the environmental study corridor includes terrestrial, aquatic, and plant communities. The environmental study corridor contains 418 acres of mixed forest, 80 acres of pine forest, and 2,611 acres of maintained/disturbed terrestrial communities within Vance County. Protected species include bald eagle (*Haliaeetus leucocephalus*), and dwarf wedgemussel (*Alasmidonta Heterodon*). Species of concern include pinewoods shiner (*Lythrurus matutinus*), Carolina madtorn (*Noturus furiosus population 2*), American eel (*Anguilla rostrate*), yellow lance (*Elliptio lanceolata*), yellow lampmussel (*Lampsilis cariosa*), buttercup phacelia (*Phacelia Covillei*), and prairie birdsfoottrefoil (*Lotus unifoliolatus var. helleri*). The proposed greenway is designed to avoid or minimize impacts to these sensitive resources.

Agricultural/Open Space

Within the environmental study corridor in Vance County are 2,393 acres of prime farmland and 514 acres of statewide importance. The proposed greenway will avoid or minimize impacts to these sensitive resources.

Invasive Species

Invasive and noxious plant species are scattered throughout the environmental study corridor, typically in areas of past disturbances. Following ground-disturbing activities, mitigation measures must be employed to reduce the opportunity for the introduction of invasive and noxious plants. Measures could include the inspection and cleaning of construction equipment; commitments to ensure the use of invasive-free mulches, topsoils, and seed mixes; incremental seeding of disturbed areas; the use of proper erosion- and sediment-control devices; BMPs as described in the North Carolina Department of Environment and Natural Resources' Stormwater BMP Manual; and eradication strategies to be deployed should an invasion occur.

Air Quality

The proposed greenway prohibits the use of motor vehicles; therefore, it is not expected to impact the area's air quality. In fact, motor vehicle emissions are a major contributor to air pollution; so, providing a greenway for non-motorized transportation could divert potential vehicle trips to active transportation trips. Trip conversion from motorized to non-motorized modes could reduce vehicle emissions in the area, potentially improving air quality slightly.

Noise

Since the greenway will prohibit the use of motor vehicles, it is not expected to contribute additional noise or vibration in the area. In fact, motor vehicles are a major contributor to noise pollution; so, providing a greenway for non-motorized transportation could divert potential vehicle trips to active transportation trips. Trip conversion from motorized to non-motorized modes could reduce noise pollution slightly.

Utilities and Related Services

Vance County is served by the Kerr Lake Regional Water Authority for wastewater treatment and water supply. Electricity is provided by Progress Energy, Duke Energy, and Halifax Electric Membership Corporation. The proposed greenway will avoid or minimize impacts to these services.

ROW and Relocations

The proposed greenway is routed within existing or planned transportation and rail ROW, where feasible, to avoid relocations (Scenarios B and C). However, in some areas, additional ROW may be needed to construct the trail, as currently designed. In order to construct the greenway between the Vance County line and the Town of Henderson, an additional 23 acres of ROW will be needed.

4.3.5 Vance County: Henderson (Maps 112-116)

As part of this study, the design team did not propose an alignment within urban municipal boundaries. It is anticipated that each town or city will plan and design their own bicycle and pedestrian network to connect to the proposed greenway for regional transportation access.

4.3.6 Vance County: Henderson to Franklin County (Maps 116-124)

South of Henderson, alignment of the proposed greenway is constrained by development along US 1 Business. Therefore, the alignment follows existing property boundaries, rather than the proposed rail corridor, to reduce major property impacts. Further south, the greenway is designed to traverse the proposed rail corridor multiple times alternates for short sections between the west and east sides of the proposed rail to reduce property impacts.

As part of this study, the design team did not propose an alignment within the urban municipal boundaries of Kittrell.

A detailed alignment of the proposed greenway is located on Maps 116-124 in Appendix E. Table 10 provides a summary of the environmental impacts in this segment of the proposed greenway.

Phasing for Implementation

The recommended phasing for the Henderson to Franklin County segment of the greenway is medium priority for implementation. The recommended alignment primarily falls outside of the existing RGRC ROW (Scenarios A and C), but there are no expected environmental impacts. A section near the county line is located outside of the environmental study corridor and will require further study before implementation.

Table 10: Phasing Priority for Vance County Segment South of Henderson

Map #	Phasing Priority	Scenario(s) Present	Notes	Potential Trailheads
116	Low	A, C	Mostly outside project limits with alternative routing to avoid private property	J.P. Taylor Rd.; Warehouse Rd.
117	Low	A, C	Mostly outside project limits with alternative routing to avoid private property	Warehouse Rd.; Bear Pond Rd.; M. Lynnbank Rd.; Raleigh Rd.
118	Low	A, B, C	Mostly outside project limits with alternative routing outside study area; partially outside of environmental study area	Raleigh Rd.; Wildlife Ln.
119	Medium	A, B, C	Partially within RGRC ROW and project limits; partially outside project limits; no major environmentally sensitive impacts	Raleigh Rd.; Wildlife Ln.; Anywhere along new road; Edwards Rd.
120	Medium	A, C	Mostly outside project limits; no major environmentally sensitive impacts	Edwards Rd.; N. Chavis Rd.;
121	Medium	A	Outside project limits; no trailheads; no major environmentally sensitive impacts	None
122	Medium	A, C	Mostly outside project limits; no major environmentally sensitive impacts	Oak Ridge Church Rd.; Anywhere along new road
123	Medium	A, B, C	Partially outside project limits with a portion outside the environmental study area	Anywhere along new road; US 1
124	Low	A	Outside project limits and mostly outside environmental study area	US 1; S. Chavis Rd.

Socio-Economic

Vance County is a peripheral part of the Raleigh-Durham MSA. The largest industry sectors include service and trade employment, which can be partially attributed to the Lake Gaston area.

According to the EPA's EJ viewer online mapping tool, in Vance County along the proposed greenway between Henderson and the Franklin County line, the population is approximately 70% minority, with 37% living below poverty. The county average is over 58% minority, with 28% living below poverty. As such, the population living along the greenway corridor is above the minority and poverty average for the rest of the county. Although a higher percentage of EJ population is along the corridor, there are no anticipated impacts as a result of the greenway. In fact, the construction of a greenway adjacent to minority and poverty population centers could improve non-motorized access to regional destinations, including the proposed rail.

The proposed greenway is routed along, or within, an existing or planned transportation corridor. Therefore, no public recreation or community services will be impacted. In fact, the construction of a greenway could provide improved non-motorized access and connectivity to public recreation and community services.

Section 4(f) and Section 6(f)

The proposed greenway is designed to avoid impacts to sensitive and eligible historic resources, parks, recreational resources, and public wildlife areas.

Cultural Resources

The proposed greenway is designed to avoid impacts to sensitive and eligible architectural and archaeological resources. Resources in this segment include the eligible architectural resource of the Josiah Crudup House. However, the proposed greenway is routed outside of the property and will, therefore, have no impact to the property.

Natural Resources

The proposed greenway is designed to avoid sensitive natural resources including streams, wetlands, threatened or endangered species, and floodplains. Vance County lies within the Roanoke and Tar-Pamlico River Basins and includes numerous streams, wetlands, and other waters.

The surface waters and wetlands within the proposed greenway corridor are included in Appendices C and D.

No FEMA 100-Year Floodplain crossings are within the proposed greenway corridor in Vance County.

Regarding threatened or endangered species, the environmental study corridor includes terrestrial, aquatic, and plant communities. The environmental study corridor contains 418 acres of mixed forest, 80 acres of pine forest, and 2,611 acres of maintained/disturbed terrestrial communities within Vance County. Protected species include the bald eagle (*Haliaeetus leucocephalus*) and dwarf wedgemussel (*Alasmidonta Heterodon*). Species of concern include pinewoods shiner (*Lythrurus matutinus*), Carolina madtorn (*Noturus furiosus population 2*), American eel (*Anguilla rostrate*), yellow lance (*Elliptio lanceolata*), yellow lampmussel (*Lampsilis cariosa*), buttercup phacelia (*Phacelia Covillei*), and prairie birdsfoottrefoil (*Lotus unifoliolatus var. helleri*). The proposed greenway will avoid or minimize impacts to these sensitive resources.

Agricultural/Open Space

Within the environmental study corridor in Vance County are 2,393 acres of prime farmland and 514 acres of statewide importance. The greenway is designed to avoid or minimize impacts to these sensitive resources.

Invasive Species

Invasive and noxious plant species are scattered throughout the environmental study corridor, typically in areas of past disturbances. Following ground disturbing activities, mitigation measures must be employed to reduce the opportunity for the introduction of these invasive and noxious plants. Measures could include the inspection and cleaning of construction equipment; commitments to ensure the use of invasive-free mulches, topsoils, and seed mixes; incremental seeding of disturbed areas; the use of proper erosion- and sediment-control devices; BMPs as described in the North Carolina Department of Environment and Natural Resources' Stormwater BMP Manual; and eradication strategies to be deployed should an invasion occur.

Air Quality

The proposed greenway prohibits the use of motor vehicles; therefore, it is not expected to impact the area's air quality. In fact, motor vehicle emissions are a major contributor to air pollution; so, providing a greenway for non-motorized transportation could divert potential vehicle trips to active transportation trips. Trip conversion from motorized to non-motorized modes could reduce vehicle emissions in the area, potentially improving air quality slightly.

Noise

Since the proposed greenway will prohibit the use of motor vehicles, it is not expected to contribute additional noise or vibration in the area. In fact, motor vehicles are a major contributor to noise pollution; so, providing a greenway for non-motorized transportation could divert potential vehicle trips to active transportation trips. Trip conversion from motorized to non-motorized modes could reduce noise pollution slightly.

Utilities and Related Services

Vance County is served by the Kerr Lake Regional Water Authority for wastewater treatment and water supply. Electricity is provided by Progress Energy, Duke Energy, and Halifax Electric Membership Corporation. The proposed greenway will avoid or minimize impacts to these services.

ROW and Relocations

The proposed greenway is routed within existing and planned transportation and rail ROW, where feasible, to avoid relocations (Scenarios B and C). However, in some areas, additional ROW may be needed to construct the trail as currently designed. In order to construct the greenway between Henderson and the Franklin County line, an additional 55 acres of ROW will be needed.

4.3.7 Franklin County: Vance County to Franklinton (Maps 124-127)

Crossing into Vance County, the proposed alignment for the greenway is partially routed within the existing RGRC ROW (Scenario B) or immediately adjacent to the west side of the proposed rail (Scenario A), before crossing to the east side of the proposed rail in Franklinton (Scenario A). The majority greenway alignment within this segment is located outside of the SEHSR project limits (Scenario A).

A detailed alignment of the proposed greenway is located on Maps 124-127 in Appendix E. Table 11 provides a summary of the environmental impacts in this segment of the proposed greenway.

Phasing for Implementation

The recommended phasing for the Vance County line to Franklinton segment of the greenway is low priority for implementation. The proposed greenway alignment is routed primarily outside the project limits (Scenario A) and, in some areas, is routed outside of the environmental study corridor. Part of this segment is located outside of the environmental study corridor and will require further study before implementation.

Table 11: Phasing Priority for Franklin County Segment North of Franklinton

Map #	Phasing Priority	Scenario(s) Present	Notes	Potential Trailheads
124	Low	A, B	Partially outside project limits with historic property impact; no trailheads	None
125	Low	A, B, C	Partially outside project limits and environmental study area; historic property impact	Winston St.; Anywhere along new street; Montgomery Rd.
126	Medium	A	Outside project limits; no major environmentally sensitive impacts	Winston St.; Misty Way; Cambridge Dr.; Rustic Ridge Rd.; Marlless Dr.; Emerald Forest; Scarlett Cir.
127	Medium	A	Outside project limits; no major environmentally sensitive impacts	Winston St.; Beechwood Rd.; Chicken Farm Rd.; Massenberg St.

Socio-Economic

Franklin County is primarily suburban, with population growth recently fueled by employment opportunities in Wake County and the Research Triangle Park.

According to the EPA's EJ viewer online mapping tool, in Franklin County between the Vance County line and Franklinton, the population is comprised of approximately 59% minority, with less than 20% living below poverty. The county average is over 36% minority, with 15% living below poverty. As such, the population living along the proposed greenway corridor is above the average compared to the rest of the county. Although a higher percentage of EJ population is along the corridor, there are no anticipated impacts as a result of the greenway. In fact, the construction of a greenway adjacent to minority and poverty population centers could improve non-motorized access to regional destinations, including the proposed rail.

The proposed greenway is routed along, or within, an existing or planned transportation corridor. Therefore, it is a compatible use, and no public recreation or community services will be impacted. In fact, the construction of a greenway could provide improved non-motorized access and connectivity to public recreation and community services.

Section 4(f) and Section 6(f)

The proposed greenway is designed to avoid impacts to sensitive and eligible historic resources, parks, recreational resources, and public wildlife areas.

Cultural Resources

The proposed greenway, in this segment of the corridor, is expected to disturb the eligible architectural resource of the Person-McGhee Farm. The Person-McGhee Farm is listed in, and remains eligible for, the National Register of Historic Places (NRHP) under Criterion A for agriculture and Criterion C for architecture. The Person-McGhee Farm is an expansive, well-preserved farmstead established in the valley of the Tar River in the 1830s. The centerpiece of the farm is a large and elaborate Queen Anne dwelling surrounded by outbuildings. This house includes a federal-style rear section built for the Person family. The present 500-acre working farm is both historically and visually significant with clearly defined natural boundaries of streams and hills, and manmade boundaries of farm roads and railroad tracks. The existing rail corridor runs along the eastern edge of the farm, and the proposed greenway is designed to be constructed to the west of the existing rail corridor, just within the farm's property line (Scenario A).

Natural Resources

The proposed greenway will avoid impacts to sensitive natural resources including streams, wetlands, threatened or endangered species, and floodplains. Franklin County lies within the Tar-Pamlico and Neuse River Basins and includes numerous streams, wetlands, and other waters.

The surface waters and wetlands within the proposed greenway corridor are included in Appendices C and D.

The FEMA 100-Year Floodplain crossing at the Tar River is within the proposed greenway corridor in this segment.

Regarding threatened or endangered species, the environmental study corridor includes terrestrial, aquatic, and plant communities. The environmental study corridor contains 1,039 acres of mixed forest, 217 acres of pine forest, and 1,042 acres of maintained/disturbed terrestrial communities within Franklin County. Protected species include dwarf wedgemussel (*Alasmidonta Heterodon*), Tar River spinymussel (*Eliptio steinstansana*), and Michaux's sumac (*Rhus michauxii*). Species of concern include pinewoods shiner (*Lythrurus matutinus*), Neuse madtorn (*Noturus furiosus population 1*), American eel (*Anguilla rostrate*), Roanoke bass (*Ambloplites cavifrons*), yellow lance (*Elliptio lanceolata*), Atlantic pigtoe (*Fusconaia masoni*), and or yellow lampmussel (*Lampsilis cariosa*). The proposed greenway is designed to avoid or minimize impacts to these sensitive resources.

Agricultural/Open Space

Within the environmental study corridor in Franklin County are 1,304 acres of prime farmland, 49 acres of prime farmland if drained and protected from frequently flooding, and 2,131 acres of statewide importance. The proposed greenway will avoid or minimize impacts to these sensitive resources.

Invasive Species

Invasive and noxious plant species are scattered throughout the study area, typically in areas of past disturbances. Following ground-disturbing activities, mitigation measures must be employed to reduce the opportunity for the introduction of invasive and noxious plants. Measures could include the inspection and cleaning of construction equipment; commitments to ensure the use of invasive-free mulches, topsoils, and seed mixes; incremental seeding of disturbed areas; the use of proper erosion- and sediment-control devices; BMPs as described in the North Carolina Department of Environment and Natural Resources' Stormwater BMP Manual; and eradication strategies to be deployed should an invasion occur.

Air Quality

The proposed greenway prohibits the use of motor vehicles; therefore, it is not expected to impact the area's air quality. In fact, motor vehicle emissions are a major contributor to air pollution; so, providing a greenway for non-motorized transportation could divert potential vehicle trips to active transportation trips. Trip conversion from motorized to non-motorized modes could reduce vehicle emissions in the area, potentially improving air quality slightly.

Noise

Since the greenway will prohibit the use of motor vehicles, it is not expected to contribute additional noise or vibration in the area. In fact, motor vehicles are a major contributor to noise pollution; so, providing a greenway for non-motorized transportation could divert potential vehicle trips to active transportation trips. Trip conversion from motorized to non-motorized modes could reduce noise pollution slightly.

Utilities and Related Services

Franklin County is served by the Kerr Lake Regional Water Authority for wastewater treatment and water supply. Electricity is provided by Progress Energy and Duke Energy. The proposed greenway is designed to avoid or minimize impacts to these services.

ROW and Relocations

The proposed greenway is routed within existing and planned transportation and rail ROW, where feasible, to avoid relocations (Scenarios B and C). However, in some areas, additional ROW may be needed to construct the trail as currently designed. In order to construct the greenway between the Franklin County line and the Town of Franklinton, an additional 21 acres of ROW will be needed.

4.3.8 Franklin County: Franklinton (Maps 127-128)

As part of this study, the design team did not propose an alignment within urban municipal boundaries. It is anticipated that each town or city will plan and design their own bicycle and pedestrian network to connect to the proposed greenway for regional transportation access.

4.3.9 Franklin County: Franklinton to Wake County (Maps 128-134)

Exiting Franklinton, the proposed greenway aligns on the west side of the proposed rail. The greenway alignment alternates between following the proposed rail outside of the project limits (Scenario A) and using the existing RGRC ROW (Scenario B) before crossing to the east side of the proposed rail alignment as it approaches Youngsville. The proposed greenway exits Youngsville on the west side of the proposed rail and is routed adjacent to the proposed track approaching Wake County (Scenario A).

As part of this study, the design team did not propose an alignment within urban municipal boundaries of Youngsville.

A detailed alignment of the proposed greenway is located on Maps 128-134 in Appendix E. Table 12 provides a summary of the environmental impacts in this segment of the proposed greenway.

Phasing for Implementation

The recommended phasing for the Franklinton to Wake County line segment of the greenway is medium priority for implementation. The proposed greenway is primarily routed outside the SEHSR project limits throughout this segment (Scenario A). Environmental impacts are not expected. A section near the southern extent is located outside of the environmental study corridor and will require further study before implementation.

Table 12: Phasing Priority for Franklin County Segment South of Franklinton

Map #	Phasing Priority	Scenario(s) Present	Notes	Potential Trailheads
128	Medium	A, B, C	Partially outside project limits; no major environmentally sensitive impacts	Main St.; Hicks Rd.
129	Medium	A, B	Mostly outside project limits; no trailheads; no major environmentally sensitive impacts	None
130	Medium	A, B, C	Mostly outside project limits; no major environmentally sensitive impacts	Bert Winston Rd.
131	Medium	A, B, C	Mostly outside of project limits; some alternative routing to avoid impacts; no major environmentally sensitive impacts	Bert Winston Rd.; Anywhere along new road; Northbrook Rd.
132	Medium	A, C	Partially outside project limits; no major environmentally sensitive impacts	Anywhere along new road
133	Medium	A	Outside project limits; no trailheads; no major environmentally sensitive impacts	None
134	Low	A	Partially outside environmental study corridor; no trailheads	None

Socio-Economic

Franklin County is primarily suburban within the Triangle Region. Much of the county's recent population growth can be attributed to job opportunities in Wake County and Research Triangle Park.

According to the EPA's EJ viewer online mapping tool, Franklin County between the Vance County line and Franklinton along the proposed greenway has a population comprised of up to 59% minority, with less than 20% living below poverty. The county average is over 36% minority, with 15% living below poverty. As such, the population living along the greenway corridor is above the minority and poverty average when compared to the rest of the county. Although a higher percentage of EJ population is along the corridor, disproportionate and adverse impacts to these populations, as a result of greenway construction, are not anticipated. In fact, the construction of a greenway adjacent to minority and poverty population centers could improve non-motorized access to regional destinations, including the proposed rail.

The proposed trail is routed along, or within, an existing or planned transportation corridor. Therefore, it is a compatible use and no public recreation or community services will be adversely impacted. In fact, the construction of a greenway could provide improved non-motorized access and connectivity to public recreation and community services.

Section 4(f) and Section 6(f)

The proposed greenway is designed to avoid impacts to sensitive and eligible historic resources, parks, recreational resources, and public wildlife areas.

Cultural Resources

The proposed greenway is designed to avoid impacts to sensitive and eligible architectural and archaeological resources. Of note, no architectural or archaeological resources are within this segment.

Natural Resources

The proposed greenway is designed to avoid impacts to sensitive natural resources including streams, wetlands, threatened or endangered species, and floodplains. Franklin County lies within the Tar-Pamlico and Neuse River Basins and includes numerous streams, wetlands, and other waters.

The surface waters and wetlands within the proposed greenway corridor are included in Appendices C and D.

In this segment, a FEMA 100-Year Floodplain crossing is at the Tar River.

Regarding threatened or endangered species, the environmental study corridor includes terrestrial, aquatic, and plant communities. The environmental study corridor contains 1,039 acres of mixed forest, 217 acres of pine forest, and 1,042 acres of maintained/disturbed terrestrial communities within Franklin County. Protected species include dwarf wedgemussel (*Alasmidonta Heterodon*), Tar River spinymussel (*Eliptio steinstansana*), and Michaux's sumac (*Rhus michauxii*). Species of concern include pinewoods shiner (*Lythrurus matutinus*), Neuse madtorn (*Noturus furiosus population 1*), American eel (*Anguilla rostrate*), Roanoke bass (*Ambloplites cavifrons*), yellow lance (*Elliptio*

lanceolata), Atlantic pigtoe (*Fusconaia masoni*), and yellow lampmussel (*Lampsilis cariosa*). The proposed greenway will avoid or minimize impacts to these sensitive resources.

Agricultural/Open Space

Within the environmental study corridor in Franklin County are 1,304 acres of prime farmland, 49 acres of prime farmland if drained and protected from frequently flooding, and 2,131 acres of statewide importance. The proposed greenway will avoid or minimize impacts to these sensitive resources.

Invasive Species

Invasive and noxious plant species are scattered throughout the study area, typically in areas of past disturbances. Following ground-disturbing activities, mitigation measures must be employed to reduce the opportunity for the introduction of invasive and noxious plants. Measures could include the inspection and cleaning of construction equipment; commitments to ensure the use of invasive-free mulches, topsoils, and seed mixes; incremental seeding of disturbed areas; the use of proper erosion- and sediment-control devices; BMPs as described in the North Carolina Department of Environment and Natural Resources' Stormwater BMP Manual; and eradication strategies to be deployed should an invasion occur.

Air Quality

The proposed greenway prohibits the use of motor vehicles; therefore, it is not expected to impact the area's air quality. In fact, motor vehicle emissions are a major contributor to air pollution; so, providing a greenway for non-motorized transportation could divert potential vehicle trips to active transportation trips. Trip conversion from motorized to non-motorized modes could reduce vehicle emissions in the area, potentially improving air quality slightly.

Noise

Since the proposed greenway will prohibit the use of motor vehicles, it is not expected to contribute additional noise or vibration in the area. In fact, motor vehicles are a major contributor to noise pollution; so, providing a greenway for non-motorized transportation could divert potential vehicle trips to active transportation trips. Trip conversion from motorized to non-motorized modes could reduce noise pollution slightly.

Utilities and Related Services

Franklin County is served by the Kerr Lake Regional Water Authority for wastewater treatment and water supply. Electricity is provided by Progress Energy and Duke Energy. The proposed greenway will avoid or minimize impacts to these services.

ROW and Relocations

The proposed greenway is routed within existing and planned transportation and rail ROW, where feasible, to avoid relocations (Scenarios B and C). However, in some areas, additional ROW may be needed to construct the trail, as currently designed. In order to construct the greenway between Franklinton and the Wake County line, an additional 43 acres of ROW will be needed.

5. Public Involvement

The public involvement efforts for the SEHSR Greenway have been coordinated with the SEHSR Tier II EIS from Richmond to Raleigh. Information regarding the greenway has been made available during the SEHSR Public Hearings. To date, there has not been any public controversy regarding the construction of the proposed greenway as drafted in this plan.

Following publication of the Draft EIS, FRA, DRPT, and NCDOT hosted eight public hearings (four in Virginia and four in North Carolina). Public hearing dates, locations, and approximate attendance at each of the meetings are displayed in Table 13. The public hearings provided a venue to view the proposed greenway design, ask questions, and provide feedback. Each hearing consisted of a two hour open-house, followed by a presentation with time for attendees to provide formal comments.

Over 2,000 people attended the combined hearings, which were advertised in the Federal Register, local newspapers, on the project website, through Twitter, email updates, and with a direct mailing to owners of property located within the proposed rail and greenway corridors.

Of the comments received at the hearings in 2010, 76 support the implementation of the proposed greenway.

Table 13: DEIS Public Hearing Schedule

Location	Date	Area Served	Attendance
Northside Elementary School, Norlina, NC	July 13, 2010	Warren County, NC	250
Southside VA Community College, Alberta, VA	July 15, 2010	Brunswick and Mecklenburg Counties, VA	183
Virginia DMV Cafeteria, Richmond, VA	July 20, 2010	City of Richmond, VA	193
Union Station, Petersburg, VA	July 21, 2010	City of Petersburg, VA	255
Sunnyside Elementary School, McKenney, VA	July 22, 2010	Dinwiddie County, VA	198
Raleigh Convention Center, Raleigh, NC	July 26, 2010	Wake County, NC	470
Aycock Elementary School, Henderson, NC	July 27, 2010	Vance County, NC	302
Franklinton High School, Franklinton, NC	July 29, 2010	Franklin County, NC	373